Civil Aviation Authority

CAR-172

Civil Aviation Regulation

Air Traffic Services

Effective: 01st September 2025

Approved by H.E. Eng. Naif Ali Hamed Al-Abri

President of CAA

Corrigendum of Amendments

Rev No.	Applicability Date	Description
-	Apr 2010	Initial
01	Jul 2011	
02	Nov 2018	
03	Jan 2020	
04	May 2023	**Rev 04 Incorporating Amendment 52 to Annex 11 and the followings:** 1. Title change of PACA to CAA; 2. Logo Change; 3. ATS provider applicant assumed as an applicant before granted till certificate issuance, then as ATS provider; 4. Glossary of Terms or Abbreviations added: ATS, CAA, IFPDS, IFDPSP; 5. Foreword: Reword CAA-DGCAR as the Authority; 6. Entry into force added (172.002) and Transitional period for ATS provider removed; 7. Definitions: i. Appropriate ATS authority changed and added Notes to specify relevant authority ii. Added IFPDS and IFPDSP; 8. Establishment of Authority changed as per Foreword; 9. Added: Delegation of Responsibility of providing Air Traffic Services to the ATS provider of another state; 10. Suspension and Revocation of Certification added; 11. Classification of Airspaces: added by (d) to determine the airspace boundaries classification; 12. Specifications for Flight Information Regions, Control Areas and Control Zones: added regarding a control zone is located outside a controlled area; 13. Coordination of Activities Potentially Hazardous to Civil Aircraft changed as per amendment 52 to ensure safety risk assessment conducted by ATS provider for military activities; 14. Aeronautical Data: Determination and reporting of air traffic services-related aeronautical data changed in accordance with the accuracy and integrity requirements set forth in appropriate ICAO documentation AMC CAR 175 and other details removed; 15. Instrument Flight Procedure Design Service revised as per CAR 173 requirement; 16. Organization that Provides Air Traffic Services added as CAR 172.100 to specify the required ATS provider's organization elements; 17. Language Proficiency item (c) added for the conditions in which mutually agreed language is used for communication between ATS units; 18. Requirements for the Provision of Air Traffic Control Services added as CAR172.122; 19. In Area and Approach Control Services: Separation within airspace classification revised for clarification and added the condition to maintain own separation by pilot and for vectoring direct routing; 20. In Aerodrome Control Service added the separation as per Area control centre; 21. In Operation of Air Traffic Control Service section d revised; 22. Responsibility for Control changed; 23. Read-Back of Clearances revised in accordance the amendment 52; 24. ATFM amended in line with DOC 4444 (3.2.5.2); 25. Fatigue Management developed in line with the Fatigue Management Guide for Air Traffic Service Providers;

		26. Safety assessment changed to safety risk assessment in SMS (172.165); 27. Safety Reviews added in accordance with DOC 4444 (2.5); 28. Organization Exposition deleted and reworded to Operation manual (172.303); 29. Appendix 1 added as "Principles governing the identification of navigation specifications and the identification of ATS routes other than standard departure and arrival routes"; 30. Appendix 2 added as "Principles governing the establishment and identification of significant points"; 31. Appendix 3 added as "Principles governing the identification of standard departure and arrival routes and associated procedures"; 32. Appendix 4 added as "ATS airspace classes — services provided and flight requirements"; 33. Appendix 5 added as "Prescriptive fatigue management regulations"; 34. Appendix 6 added as "Fatigue risk management system (FRMS) requirements"; 35. Appendix 7 added as "State responsibilities concerning an instrument flight procedure design service"; 36. Attachment A added as "Air Traffic Control Currency and Proficiency Requirements".
05		**Rev 05 Incorporating Amendment 53 to Annex 11 and the followings:** 1. Logo change 2. CAR 172.002 Entry into force. 28 November 2024 3. CAR 172.003 Definitions. To incorporate Amendment 53 to Annex and added new definitions & notes. 4. CAR 172.005 Bis Delegation of Responsibility of providing Air Traffic Services. To be deleted due to the duplication with CAR 172.005 5. CAR 172.015 Privileges of Certificate. The holder of aerodrome control to certificate provide aerodrome control service remotely. 6. CAR 172.025 Divisions of Air Traffic Service. To be aligned with Annex 11 7. CAR 172.027 Determination of the Need for Air Traffic Services. To be aligned with Annex 11. 8. CAR 172.031 Classification of Airspaces. To be aligned with Annex 11. 9. CAR 172.035 Specifications for Flight Information Regions, Control Areas and Control Zones. To be aligned with Annex 11. 10. CAR 172.037 Identification of Air Traffic Service Units and Airspaces. To be aligned with Annex 11 11. CAR 172.039 Establishment and Identification of ATS Routes. To be aligned with Annex 11 12. CAR 172.045 Establishment and Identification of Standard Routes for Taxiing Aircraft. To be aligned with Annex 11 13. CAR 172.047 Coordination Requirements – General. To be deleted due to the duplication with CAR 172.49 &51 & 53 & 55 & 57 14. AR 172.049 Coordination between Aircraft Operators and Air Traffic Service Providers. To be aligned with Annex 11 15. CAR 172.053 Coordination of Activities Potentially Hazardous to Civil Aircraft. To be aligned with Annex 11 16. CAR 172.059 Aeronautical Data. To be aligned with Annex 11 17. CAR 172.063 Prohibited, Restricted and Danger Areas. To be aligned with Annex 11 18. CAR 172.067 Instrument Flight Procedure Design Service. To be aligned with Annex 11

		19. CAR 172.069 Performance-Based Navigation (PBN) Operations. To be aligned with Annex 11 20. CAR 172.071 Performance-Based Communication (PBC) Operations. To be aligned with Annex 11 21. CAR 172.073 Performance-Based Surveillance (PBS) Operations. To be aligned with Annex 11 22. CAR 172.101 Personnel Requirements. Introduce of new Personnel Requirements. 23. CAR 172.103 Language Proficiency. To be aligned with Annex 11 24. CAR 172.105 ATS Training. To be aligned with PANS – TRG Doc 9868 & Doc 10056 Manual on ATC CBTA 25. CAR 172.107 Facility Requirements. To be aligned with Annex 11 & Doc 9426 26. CAR 172.115 Security. To change Shall to Should 27. CAR 172.125 Aerodrome Control Service. To be replaced by CAR 180 Instead of CAR OPS 0. 28. CAR 172.155 In-flight Contingencies - Strayed or Unidentified Aircraft. To be aligned with Annex 11 29. CAR 172.167 Quality Management System (QMS). Change Shall to Should. 30. CAR 172.179 Alerting Service – Application. Incorporating amendment 53. 31. CAR 172.181 Alerting Service – Notification of Rescue Coordination Centres. Incorporating amendment 53.
06	Nov 25	**Rev 06 Incorporating Amendment 54 to the Annex concerning the improved definition of meteorological authority, the introduction of a new definition for meteorological service provider and the alignment of references with the new Procedures for Air Navigation Services Meteorology (AMC- CAR 174) and adding requirements & Recommendation & notes to be aligned with Annex 11 as the following:** **1.** CAR 172.001 Applicability: - Introduction of the applicability of the New AMC for Air Navigation Services and adding requirements to be aligned with Annex 11 **2.** CAR 172.002 Entry into force **3.** CAR 172.003 Definitions: - Incorporating Amendment 54 **4.** CAR 172.055 Coordination Between Meteorological service provider and appropriate Air Traffic Services authority: - - Incorporating Amendment 54 **5.** CAR 172.057 Coordination between Aeronautical Information Service and ATS appropriate air traffic services authorities - Incorporating Amendment 54 and Adding notes to be aligned with Annex 11 **6.** CAR 172.127 Operation of Air Traffic Control Service - Adding recommendation and notes to be aligned with Annex 11 **7.** CAR 172.133 Flight Information Service: - Adding Notes, Recommendation (e) and requirement (f) to be aligned with Annex 11 **8.** CAR 172.135 Air Traffic Control Clearances: - Adding recommendation and notes and to be aligned with Annex 11 **9.** CAR 172.137 Read-Back of Clearances and Safety-Related Information: - Adding notes to be aligned with Annex 11 **10.** CAR 172.139 Coordination of Clearances

		- Adding notes to be aligned with Annex 11 **11.** CAR 145 Air Traffic Flow Management - - Adding recommendation and notes to be aligned with Annex 11 **12.** CAR 172.153 Service to Aircraft in the Event of an Emergency - Adding note to be aligned with Annex11 **13.** CAR172.163 Fatigue Management - Replacing the current text by a new text to be aligned with Annex 11 **14.** CAR 172.165 Safety Management System (SMS) - Additional of note to be aligned with Annex 11 **15.** CAR 172.168 Safety Reviews - Aligned with the new issue of the AMC- CAR172 **16.** CAR 172.173 Data-Link Automatic Terminal Information Service (D-ATIS) - incorporating Amendment 54 **17.** CAR172.175 Automatic Terminal Information Service (voice and/or data-link) - incorporating Amendment 54 **18.** CAR172.203 Meteorological Information - incorporating Amendment 54 **19.** CAR 172.207 Information on the Operational Status of Navigation Services - Adjustment by adding the en route areas to the text **20.** CAR 172.305 Trials - Adding significant changes to enhance safety **21.** CAR 172.501 Separation Criteria and Minima - Adjustment by adding AMC- CAR 172 instead of Document 4444 to the text **22.** CAR 172.701 Surveillance Procedures - Adjustment by adding a requirement related to the surveillances procedures **23.** Attachment A – Air Traffic Control Currency and Proficiency Requirements - Removal of the attachment A due to the Lack of ICAO references.

Glossary of Terms or Abbreviations

The following terms or acronyms may be used in any manual or document published by CAA. Reproduction in part or whole is allowed without prior approval. The Document Control Office reserves the rights to include such a listing in any CAA manual or document prior to publishing.

ACAS	Airborne Collision Avoidance System
ACC	Area Control Centre
ACCID	Accident
ADREP	Accident/Incident Reporting System
AFIS	Aerodrome Flight Information Service
AFTN	Aeronautical Fixed Telecommunication Network
AIC	Aeronautical Information Circular
AIP	Aeronautical Information Publication
AIS	Aeronautical Information Service
A/C	Aircraft
AMSL	Above Mean Sea Level
AOC	Air Operator Certificate
APP	Approach Control Office
ARO	Air Traffic Services Reporting Office
ATC	Air Traffic Control
ATS	Air Traffic Service
CAA	Civil Aviation Authority
CAR	Civil Aviation Regulation
COM	Communications/Equipment
FIC	Flight Information Centre
FIR	Flight Information Region
FIS	Flight Information Service
GM	Guidance Material
IATA	International Air Transport Association
ICAO	International Civil Aviation Organisation
IFPDS	Instrument Flight Procedure Design Service
IFPDSP	Instrument Flight Procedure Design Service Provider
IIC	Investigator in Charge
INCID	Serious Incident
ISA	International standard atmosphere
NOTAM	Notice to Airmen
NPA	Notice of Proposed Amendment
OTSB	Oman Transport Safety Bureau
PL	Policy Lead
RCC	Rescue Co-ordination Centre of the Sultanate
RNAV	Area Navigation
RMA	Regional Monitoring Agency
SAR	Search and Rescue
SIGMET	Significant Meteorological Report
SPOC	Single Point of Contact
SRA	Surveillance Radar Approach
SSR	Secondary Surveillance Radar
TCAS	Traffic Alert and Collision Avoidance System
TL	Technical Lead
UTC	Coordinated Universal Time
VHF	Very High Frequency
WX	Weather

Contents

FOREWORD

(a) The Civil Aviation Requirements for Civil Aviation Regulation Enforcement Procedures have been issued by the Civil Aviation Authority of Oman – DGCAR (hereinafter referred to as "the AUTHORITY") under the provisions of the Civil Aviation Law of the Sultanate of Oman.

(b) This CAR has been modelled upon ICAO Annex 11, *Air Traffic Services* for standards for the establishment of airspace, units and services necessary to promote a safe, orderly and expeditious flow of air traffic.

(c) CAR 172 prescribes the requirements for the establishing, implementation, and maintaining a system for the provision of air traffic services.

(d) Amendments to the text in CAR 172 in revised editions are issued as a complete amendment of pages contained within.

(e) The editing practices used in this document are as follows:

(1) 'Shall' and 'Must' are used to indicate a mandatory requirement and may appear in this CAR.

(2) 'Should' is used to indicate a recommendation.

(3) 'May' is used to indicate discretion by the AUTHORITY, or the industry as appropriate.

(4) 'Will' indicates a mandatory requirement and is used to advise of action incumbent on the Authority.

Note. — *The use of the male gender implies the female gender and vice versa.*

SUBPART A - GENERAL

CAR 172.001 Applicability

(a) The requirement in this CAR together with CAR 180, govern the application of the AMC Procedures for Air Navigation Services — Air Traffic Management (AMC-CAR172) and the Regional Supplementary Procedures — Rules of the Air and Air Traffic Services, contained in Doc 7030, in which latter document will be found subsidiary procedures of regional application.

(b) CAR 172 pertains to the establishment of airspace, units and services necessary to promote a safe, orderly and expeditious flow of air traffic. A clear distinction is made between air traffic control service, flight information service and alerting service. Its purpose, together with CAR180, is to ensure that flying on international air routes is carried out under uniform conditions designed to improve the safety and efficiency of air operation.

(c) The Requirements in CAR 172 apply in those parts of the airspace under the jurisdiction of Oman wherein air traffic services are provided and also wherever Oman accepts the responsibility of providing air traffic services over the high seas or in airspace of undetermined sovereignty. Oman accepting such responsibility may apply the Requirements in a manner consistent with that adopted for airspace under its jurisdiction

(d) The requirements prescribed in this Regulation are mandatory for ATS providers to implement within their operations and shall constitute a regulatory basis for ATS certification.

(e) The requirements to provide other air traffic services as specified in CAR 172.025 (d).

CAR 172.002 Entry into force

(a) This Civil Aviation Regulation (CAR) shall come into force on 01 September 2025 (the effective date). It shall become applicable on 27 November 2025, unless otherwise specified for individual provisions within this Regulation.

(b) The requirement of the ATS Providers certification shall enter into force on 31 December 2028.

CAR 172.003 Definitions

Definitions associated with this regulation are contained in CAR 1.

Note 1. — *Throughout the text of this CAR the term* ***"service"*** *is used as an abstract noun to designate functions, or service rendered; the term "****unit****" is used to designate a collective body performing a service.*

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

Accident. An occurrence associated with the operation of an aircraft which takes place between the time any person boards the aircraft with the intention of flight until such time as all such persons have disembarked, in which:

(a) A person is fatally or seriously injured as a result of:
  (1) being in the aircraft, or
  (2) direct contact with any part of the aircraft, including parts which have become detached from the aircraft, or
  (3) direct exposure to jet blast,

  except when the injuries are from natural causes, self-inflicted or inflicted by other persons, or when the injuries are to stowaways hiding outside the areas normally available to the passengers and crew; or

(b) The aircraft sustains damage or structural failure which:

(1) adversely affects the structural strength, performance or flight characteristics of the aircraft, and
(2) would normally require major repair or replacement of the affected component,

except for engine failure or damage, when the damage is limited to the engine, its cowlings or accessories; or for damage limited to propellers, wing tips, antennas, tires, brakes, fairings, small dents or puncture holes in the aircraft skin; or

(c) The aircraft is missing or is completely inaccessible.

Note 1. — *For statistical uniformity only, an injury resulting in death within thirty days of the date of the accident is classified, by ICAO, as a fatal injury.*

Note 2. — *An aircraft is considered to be missing when the official search has been terminated and the wreckage has not been located.*

Note 3. — *The type of unmanned aircraft system to be investigated is addressed in CAR 13.*

Note 4. — *Guidance for the determination of aircraft damage can be found in CAR 13*

ADS-C agreement. A reporting plan which establishes the conditions of ADS-C data reporting (i.e. data required by the air traffic services unit and frequency of ADS-C reports which have to be agreed to prior to using ADS-C in the provision of air traffic services).

Note. — *The terms of the agreement will be exchanged between the ground system and the aircraft by means of a contract, or a series of contracts.*

Advisory airspace. An airspace of defined dimensions, or designated route, within which air traffic advisory service is available.

Advisory route. A designated route along which air traffic advisory service is available.

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.

Note. — *The term "aerodrome" where used in the provisions relating to flight plans and ATS messages is intended to cover also sites other than aerodromes which may be used by certain types of aircraft, e.g. helicopters or balloons.*

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 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 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 Information Publication (AIP). A publication issued by or with the authority of a State and containing aeronautical information of a lasting character essential to air navigation.

Aeronautical mobile service (RR S1.32). A mobile service between aeronautical stations and aircraft stations, or between aircraft stations, in which survival craft stations may participate; emergency position-

indicating radio beacon stations may also participate in this service on designated distress and emergency frequencies.

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

Airborne collision avoidance system (ACAS). An aircraft system based on secondary surveillance radar (SSR) transponder signals which operates independently of ground-based equipment to provide advice to the pilot on potential conflicting aircraft that are equipped with SSR transponders. This system is also known as Traffic Collision Avoidance System (TCAS).

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 proximity**.** A situation in which, in the opinion of a pilot or air traffic services personnel, the distance between aircraft as well as their relative positions and speed have been such that the safety of the aircraft involved may have been compromised. An aircraft proximity is classified as follows:

Risk of collision*. The risk classification of an aircraft proximity in which serious risk of collision has existed.*

Safety not assured. *The risk classification of an aircraft proximity in which the safety of the aircraft may have been compromised.*

No risk of collision. *The risk classification of an aircraft proximity in which no risk of collision has existed.*

Risk not determined. *The risk classification of an aircraft proximity in which insufficient information was available to determine the risk involved, or inconclusive or conflicting evidence precluded such determination.*

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

AIRMET 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 low-level aircraft operations and which was not already included in the forecast issued for low-level flights in the flight information region concerned or sub-area thereof.

Air-taxiing*.* Movement of a helicopter/VTOL above the surface of an aerodrome, normally in ground effect and at a ground speed normally less than 37 km/h (20 kts).

Note. — *The actual height may vary, and some helicopters may require air-taxiing above 8 m (25 ft) AGL to reduce ground effect turbulence or provide clearance for cargo slingloads.*

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 practical, 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:

(a) Preventing collisions:
    (1) between aircraft, and
    (2) on the manoeuvring area between aircraft and obstructions; and
(b) Expediting and maintaining an orderly flow of air traffic.

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

Air traffic controller schedule. A plan for allocating air traffic controller duty periods and non-duty periods over a period of time, otherwise referred to as a roster.

Air traffic flow management (ATFM). A service established with the objective of contributing to a safe, orderly and expeditious flow of air traffic by ensuring that ATC capacity is utilized to the maximum extent possible and that the traffic volume is compatible with the capacities declared by the ATS provider.

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.

Air traffic management system. A system that provides ATM through the collaborative integration of humans, information, technology, facilities and services, supported by air and ground- and/or space-based communications, navigation and surveillance

Air traffic service (ATS). A generic term meaning variously, flight information service, alerting service, air traffic advisory service and air traffic control service (area control service, approach control service or aerodrome control service).

Air traffic services airspaces. Airspaces of defined dimensions, alphabetically designated, within which specific types of flights may operate and for which air traffic services and rules of operation are specified

Note. — *ATS airspaces are classified as Class A to G as described CAR 172.031 Classification of Airspaces***.**

***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.

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.

Alternate aerodrome. An aerodrome to which an aircraft may proceed when it becomes either impossible or inadvisable to proceed to or to land at the aerodrome of intended landing. Alternate aerodromes include the following:

> ***Take-off alternate****. An alternate aerodrome at which an aircraft can land should this become necessary shortly after take-off and it is not possible to use the aerodrome of departure.*
> ***En-route alternate****. An aerodrome at which an aircraft would be able to land after experiencing an abnormal or emergency condition while en-route.*
> ***ETOPS en-route alternate****. A suitable and appropriate alternate aerodrome at which an aircraft would be able to land after experiencing an engine shutdown or other abnormal or emergency condition while en route in an ETOPS operation.*
> ***Destination alternate****. An alternate aerodrome to which an aircraft may proceed should it become either impossible or inadvisable to land at the aerodrome of intended landing.*

Note. — *The aerodrome from which a flight departs may also be an en-route or a destination alternate aerodrome for that flight.*

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

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

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

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

Appropriate authority.

a) Regarding flight over the high seas: The relevant authority of the State of Registry.

b) Regarding flight other than over the high seas: *The relevant authority of the State having sovereignty over the territory being overflown*

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

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

Area control centre (ACC)**.** 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 ground or space-based navigation aids or within the limits of the capability of self-contained aids, or a combination of these.

Note—*Area navigation includes performance-based navigation as well as other operations that do not meet the definition of performance-based navigation.*

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

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

Note 1. — *The term "ATS route" is used to mean variously, airway, advisory route, controlled or uncontrolled route, arrival or departure route, etc.*

Note 2. — *An ATS route is defined by route specifications which include an ATS route designator, the track to or from significant points (waypoints), distance between significant points, reporting requirements and, as determined by the appropriate ATS authority, the lowest safe altitude.*

Automatic dependent surveillance-broadcast (ADS-B)**.** A means by which aircraft, aerodrome vehicles and other objects can automatically transmit and/or receive data such as identification, position and additional data, as appropriate, in a broadcast mode via a data link.

Automatic dependent surveillance — contract (ADS-C). A means by which the terms of an ADS-C agreement will be exchanged between the ground system and the aircraft, via a data link, specifying under what conditions ADS-C reports would be initiated, and what data would be contained in the reports.

Note. — *The abbreviated term "ADS contract" is commonly used to refer to ADS event contract, ADS demand contract, ADS periodic contract or an emergency mode*

Automatic terminal information service (ATIS). The automatic provision of current, routine information to arriving and departing aircraft throughout twenty-four (24) hours or a specified portion thereof:

> ***Data link-automatic terminal information service (D-ATIS).*** *The provision of ATIS via data link.*
> ***Voice-automatic terminal information service (Voice-ATIS).*** *The provision of ATIS by means of continuous and repetitive voice broadcasts.*

***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.*

Calendar. Discrete temporal reference system that provides the basis for defining temporal position to a resolution of one day (ISO 19108*).

Change-over point. The point at which an aircraft navigating on an ATS route segment defined by reference to very high frequency omnidirectional radio ranges is expected to transfer its primary navigational reference from the facility behind the aircraft to the next facility ahead of the aircraft.

Note. — *Change-over points are established to provide the optimum balance in respect of signal strength and quality between facilities at all levels to be used and to ensure a common source of azimuth guidance for all aircraft operating along the same portion of a route segment*

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

***Conference communications*.** Communication facilities whereby direct speech conversation may be conducted between three or more locations simultaneously.

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

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.*

***Controlled airspace*.** An airspace of defined dimensions within which air traffic control service is provided in accordance with the airspace classification

Note. — *Controlled airspace is a generic term which covers ATS airspace Classes A, B, C, D and E as described CAR 172.031 Classification of Airspaces.*

Controlled flight. Any flight which is subject to an air traffic control clearance.

Controller-pilot data link communications (CPDLC). A means of communication between controller and pilot, using data link for ATC communications.

***Control zone*.** A controlled airspace extending upwards from the surface of the earth to a specified upper limit.

***Cruising level*.** A level maintained during a significant portion of a flight.

Current data authority. The designated ground system through which a CPDLC dialogue between a pilot and a controller currently responsible for the flight is permitted to take place.

Current flight plan (CPL). The flight plan that reflects changes to the field flight plan, if any, by subsequent ATC clearances.

Cyclic redundancy check (CRC). A mathematical algorithm applied to the digital expression of data that provides a level of assurance against loss or alteration of data.

Danger area. An airspace of defined dimensions within which activities dangerous to the flight of aircraft may exist at specified times.

***Data accuracy*.** A degree of conformance between the estimated or measured value and the true value.

***Data integrity (assurance level)*.** A degree of assurance that an aeronautical data and its value has not been lost or altered since the origination or authorized amendment.

***Data link communications*.** A form of communication intended for the exchange of messages via a data link.

***Data quality*.** A degree or level of confidence that the data provided meets the requirements of the data user in terms of accuracy, resolution and integrity.

Datum. Any quantity or set of quantities that may serve as a reference or basis for the calculation of other quantities (ISO 19104*).

Declared capacity. A measure of the ability of the ATC system or any of its subsystems or operating positions to provide service to aircraft during normal activities. It is expressed as the number of aircraft entering a specified portion of airspace in a given period of time, taking due account of weather, ATC unit configuration, staff and equipment available, and any other factors that may affect the workload of the controller responsible for the airspace.

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

***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.

***Downstream clearance*.** A clearance issued to an aircraft by an air traffic control unit that is not the current controlling authority of that aircraft.

***Duty*.** Any task that an air traffic controller is required by an air traffic services provider to perform. These tasks include those performed during time-in-position, administrative work and training.

***Duty period*.** A period which starts when an air traffic controller is required by an air traffic services provider to report for or commence a duty and ends when that person is free from all duties.

***Emergency phase*.** A generic term meaning, as the case may be, uncertainty phase, alert phase or distress phase.

Fatigue. A physiological state of reduced physical or mental performance capability resulting from sleep loss, extended wakefulness, circadian phase, and/or workload (mental and/or physical activity) that can impair a person's alertness and ability to perform safety-related operational duties.

***Fatigue risk management system (FRMS)*.** A data-driven means of continuously monitoring and managing fatigue-related safety risks, based upon scientific principles, knowledge and operational experience that aims to ensure relevant personnel are performing at adequate levels of alertness.

***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 point 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 a flight duty period.

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

***Flight information region (FIR)*.** 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 hectopascals (hPa), and is separated from other such surfaces by specific pressure intervals.

Note 1. — *A pressure type altimeter calibrated in accordance with the Standard Atmosphere:*

a) When set to a QNH altimeter setting, will indicate altitude;

b) When set to a QFE altimeter setting, will indicate height above the QFE reference datum;

c) When set to a pressure of 1 013.2 hPa, may be used to indicate flight levels.

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

Flight plan. Specified information relative to an intended flight or portion of a flight of an aircraft.

Note 1. —*the term flight plan may be prefixed by the words "preliminary", "flied", "current" or "operational" to indicate the context and different stages of a flight.*

Note 2. — *When the word "message" is used as a suffix to this term, it denotes the content and format of the flight plan data as transmitted.*

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

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

***Gregorian calendar*.** Calendar in general use; first introduced in 1582 to define a year that more closely approximates the tropical year than the Julian calendar (ISO 19108*).

Note. — *In the Gregorian calendar, common years have 365 days and leap years 366 days divided into twelve sequential months.*

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

***Human Factors principles*.** Principles which apply to aeronautical design, certification, training, operations and maintenance and which seek safe interface between the human and other system components by proper consideration to human performance.

Human performance. Human capabilities and limitations which have an impact on the safety and efficiency of aeronautical operations.

***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.

Incident*.** An occurrence, other than an accident, associated with the operation of an aircraft which affects or ***Note. — *The types of incidents which are of main interest for accident prevention studies are listed in CAR 13 could affect the safety of operation.*

***Instrument Flight Procedure Design Service (IFPDS)*.** A service established for the design, documentation, validation, continuous maintenance and periodic review of instrument flight procedures necessary for the safety, regularity and efficiency of air navigation.

***Instrument Flight Procedure Design Service Provider (IFPDSP)*.** A body that provides an IFPDS.

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

Note. — *The specified minima for visual meteorological conditions are contained in CAR 180.*

Integrity (aeronautical data). A degree of assurance that an aeronautical data and its value has not been lost nor altered since the data origination or authorized amendment.

***Integrity classification (aeronautical data)*.** Classification based upon the potential risk resulting from the use of corrupted data. Aeronautical data is classified as:

a) **routine data:** there is a very low probability when using corrupted data that the continued safe flight and landing of an aircraft would be severely at risk with the potential for catastrophe;
b) **essential data:** there is a low probability when using corrupted data that the continued safe flight and landing of an aircraft would be severely at risk with the potential for catastrophe; and
c) **critical data:** there is a high probability when using corrupted data that the continued safe flight and landing of an aircraft would be severely at risk with the potential for catastrophe;

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

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

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

Meteorological service provider. The relevant entity designated to provide meteorological service for international air navigation on behalf of Sultanate of Oman.

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

***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).

***Navigation specification*.** A set of aircraft and flight crew requirements needed to support performance-based navigation operations within a defined airspace. There are two kinds of navigation specifications:

- Required navigation performance (RNP) specification. A navigation specification based on area navigation that includes the requirement for performance monitoring and alerting, designated by the prefix RNP, e.g. RNP 4, RNP APCH.

- Area navigation (RNAV) specification. A navigation specification based on area navigation that does not include the requirement for performance monitoring and alerting, designated by the prefix RNAV, e.g. RNAV 5, RNAV 1.

Note 1. — *The Performance-based Navigation (PBN) Manual (Doc 9613), Volume II contains detailed guidance on navigation specifications*

Note 2. — *The term RNP, previously defined as "a statement of the navigation performance necessary for operation within a defined airspace," has been removed from this CAR as the concept of RNP has been overtaken by the concept of PBN. The term RNP in this CAR is now solely used in the context of navigation specifications that require performance monitoring and alerting,*

e.g. RNP 4 refers to the aircraft and operating requirements, including a 4 NM lateral performance with on-board performance monitoring and alerting that are detailed in Doc 9613.

Non-duty period. A continuous and defined period of time, subsequent to and/or prior to duty periods, during which the air traffic controller is free of all duties.

***NOTAM*.** A notice distributed by means of telecommunication 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.

***Obstacle*.** All fixed (whether temporary or permanent) and mobile objects, or parts thereof, that:

a) Are located on an area intended for the surface movement of aircraft; or
b) Extend above a defined surface intended to protect aircraft in flight; or
c) Stand outside those defined surfaces and that have been assessed as being a hazard to air navigation.

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

Performance-based communication (PBC). Communication based on performance specifications applied to the provision of air traffic services.

Note. — *An RCP specification includes communication performance requirements that are allocated to system components in terms of the communication to be provided and associated transaction time, continuity, availability, integrity, safety and functionality needed for the proposed operation in the context of a particular airspace concept.*

Performance-based navigation (PBN). Area navigation based on performance requirements for aircraft operating along an ATS route, on an instrument approach procedure or in a designated airspace.

Note. — *Performance requirements are expressed in navigation specifications (RNAV specification, RNP specification) in terms of accuracy, integrity, continuity, availability and functionality needed for the proposed operation in the context of a particular airspace concept.*

Performance-based surveillance (PBS). Surveillance based on performance specifications applied to the provision of air traffic services.

Note. — *An RSP specification includes surveillance performance requirements that are allocated to system components in terms of the surveillance to be provided and associated data delivery time, continuity, availability, integrity, accuracy of the surveillance data, safety and functionality needed for the proposed operation in the context of a particular airspace concept.*

***Pilot-in-command*.** The pilot designated by the operator, or in the case of general aviation, the owner, as being in command and charged with the safe conduct of a flight.

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

***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.

***Radio navigation service*.** A service providing guidance information or position data for the efficient and safe operation of aircraft supported by one or more radio navigation aids.

***Radiotelephony*.** A form of radio communication primarily intended for the exchange of information in the form of speech.

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

***Required communication performance (RCP) specification*.** A set of requirements for air traffic service provision and associated ground equipment, aircraft capability, and operations needed to support performance-based communication.

***Required surveillance performance (RSP) specification*.** A set of requirements for air traffic service provision and associated ground equipment, aircraft capability, and operations needed to support performance-based surveillance.

Rescue coordination centre. A unit responsible for promoting efficient organization of search and rescue services and for coordinating the conduct of search and rescue operations within a search and rescue region.

***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.

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

Runway visual range (RVR). 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.

Safety management system (SMS). A systematic approach to managing safety, including the necessary organizational structures, accountabilities, policies and procedures.

***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.

***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.

Note. — *There are three categories of significant points: ground-based navigation aid, intersection and waypoint. In the context of this definition, intersection is a significant point expressed as radials, bearings and/or distances from ground-based navigation aids.*

***Special VFR flight*.** A VFR flight cleared by air traffic control to operate within a control zone in meteorological conditions below VMC.

State safety program (SSP). An integrated set of regulations and activities aimed at improving safety.

***Station declination*.** An alignment variation between the zero-degree radial of a VOR and true north, determined at the time the VOR station is calibrated.

Taxiing. Movement of an aircraft on the surface of an aerodrome under its own power, excluding take-off and landing.

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

***Time-in-position*.** The period of time when an air traffic controller is exercising the privileges of the air traffic controller's license at an operational position.

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).

***Traffic avoidance advice*.** Advice provided by an air traffic services unit specifying manoeuvres to assist a pilot to avoid a collision.

***Traffic information*.** Information issued by an air traffic services unit to alert a pilot to other known or observed air traffic which may be in proximity to the position or intended route of flight and to help the pilot avoid a collision.

***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*.** Air traffic control unit in the process of transferring the responsibility for providing air traffic control service to an aircraft to the next air traffic control unit along the route of flight.

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

VAAC. Volcanic Ash Advisory Centre.

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

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

Visual meteorological conditions (VMC). 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 CAR 180.*

VMC. The symbol used to designate visual meteorological conditions.

***Waypoint*.** A specified geographical location used to define an area navigation route or the flight path of an aircraft employing area navigation. Waypoints are identified as either:

Fly-by waypoint. A waypoint which requires turn anticipation to allow tangential interception of the next segment of a route or procedure, or
Flyover waypoint. A waypoint at which a turn is initiated in order to join the next segment of a route or procedure.

CAR 172.005 Establishment of Authority

(a) Directorate General of Civil Aviation Regulation (DGCAR) established under the Civil Aviation Authority (CAA), referred to in this regulation as the AUTHORITY, shall determine, in accordance with the provisions of the Civil Aviation Law of the Sultanate of Oman and this regulation, those portions of sovereign airspace and those aerodromes where air traffic services will be provided.
(b) The AUTHORITY shall arrange for such services to be established, except that, by mutual agreement, the AUTHORITY may delegate to another State the responsibility for establishing and providing air traffic services in flight information regions, control areas or control zones extending over the territories of the AUTHORITY.
(c) Those portions of the airspace over the high seas or in airspace of undetermined sovereignty where air traffic services will be provided shall be determined on the basis of regional air navigation agreements. Where the AUTHORITY has accepted the responsibility to provide air traffic services in such portions of airspace it shall arrange for the services to be established and provided in accordance with the provisions of this CAR.
(d) When it has been determined that air traffic services will be provided, the AUTHORITY shall designate the service provider(s) responsible for providing such services.
(e) Where air traffic services are established, information shall be published by the AUTHORITY and/or the designated service provider to permit the utilization of such services.

CAR 172.006 Exemptions

The AUTHORITY may grant a temporary exemption from the provisions of CAR 172, as outlined under CAR 10, provided the exemption will not reduce the level of safety below an acceptable level. The AUTHORITY may impose conditions or restrictions on the exemption and may also require a service provider proposal for an alternate means of compliance and/or a safety case and associated functional hazard analysis that supports the granting of the exemption.

CAR 172.007 Requirement for Certificate

No person shall provide an air traffic service within the Oman FIR except under the authority of, and in accordance with the provisions of, an air traffic service certificate issued under this CAR.

Service providers that fail to meet the certification compliance requirements, shall provide alternative means of compliance with this regulation in the conducting of their operational activities, subject to the approval and provisions granted by the authority.

CAR 172.009 Application for Certificate

An application for an air traffic services provider certificate can be made through direct post correspondence with the AUTHORITY or, through electronic correspondence with the AUTHORITY as per the CAA website.

CAR 172.011 Establishment and Transfer of Service

(a) An applicant for the grant of an air traffic service certificate shall include with its application:
  (1) For each aerodrome and airspace, a schedule of the proposed hours of service for the first 12 months of operation; and
  (2) In respect of an aerodrome, or airspace, not currently provided with an air traffic service, a summary of safety factors considered before seeking certification.

(b) An applicant for the grant of an air traffic service certificate intending to assume responsibility for providing any air traffic service from an existing certificate holder, shall include with its application, full details of transitional arrangements endorsed by the chief executives of both organizations.

CAR 172.013 Issue of Certificate

An applicant is entitled to an air traffic service certificate if the Authority is satisfied that:

(a) The applicant meets the requirements of Subpart B; and
(b) The applicant, and the applicant's senior person or persons required, are fit and proper persons; and
(c) The granting of the certificate is not contrary to the interests of aviation safety.

CAR 172.015 Privileges of Certificate

(a) An air traffic service certificate specifies which of the following air traffic services, and which training and assessment for such services, the certificate holder is authorized to provide:
  (1) Area control service;
  (2) Approach control service;
  (3) Aerodrome control service or a unit capable of providing aerodrome control service remotely;
  (4) Flight information service;
  (5) Alerting service;
  (6) Any other service provided in accordance with Subpart D.

(b) An air traffic service certificate:
  (1) States the aerodrome or airspace at, or within which, the service is provided; and
  (2) May include such conditions as the Authority considers appropriate.

CAR 172.017 Duration of Certificate

(a) An air traffic service certificate may be granted or renewed for a period of up to 3 years.
(b) An air traffic service certificate remains in force until it expires or is suspended or revoked.
(c) The holder of an air traffic service certificate that expires or is revoked shall forthwith surrender the certificate to the Authority.
(d) The holder of an air traffic service certificate that is suspended shall forthwith produce the certificate to the Authority for appropriate endorsement.
(e) The validity of the certificate is based upon the continued operation in accordance with this CAR.
(f) The validity of the certificate shall be subject to periodic audits conducted by, and at the discretion of, the Authority to confirm ongoing compliance with this CAR.

CAR 172.018 Renewal of Certificate

(a) An application for the renewal of an air traffic service certificate shall be made online using the CAA website.
(b) An application for the renewal of an air traffic service certificate shall be submitted to the Authority not less than thirty (30) days before the current certificate expires.

CAR 172.019 Transfer of Certificate

An air traffic services certificate, granted in accordance with the requirements of this CAR, is not transferrable.

CAR 172.020 Safety and Regulatory Audits and Inspections

(a) The Authority shall conduct an initial certification audit and thereafter audits at intervals not exceeding two (2) years at the certificate holder's office and/or unit or facility.
(b) The Authority may require the certificate holder to provide such documentation and information as the Authority considers relevant to the audit or inspection.
(c) The Authority shall be granted, by the applicant or certificate holder, unrestricted access to the ATS provider's facilities and shall be permitted to carry its own equipment (e.g. computers, cameras and recording devices) under all conditions while carrying out its oversight functions.

CAR 172.021 Resolution of Safety Issues

(a) When objective evidence is found showing regulatory non-compliance by the holder of an air traffic services certificate, the finding shall be classified as follows:
  (1) A level one finding is any significant non-compliance which reduces the level of safety.
  (2) A level two finding is any non-compliance that does not result in an immediate risk to safety.
  (3) A level three finding is any item where it has been identified, by objective evidence, to contain potential problems that could lead to a non-compliance. These are considered as observations only and will not impact a certificate.
(b) After a certificate holder receives notification of a finding:
  (1) A level one finding must be rectified immediately or within the timescale specified by the AUTHORITY.

(2) A level two finding shall be addressed in a corrective action plan with a resolution period specified by the AUTHORITY and shall be appropriate to the nature of the finding, but in any circumstance shall not be more than ninety (90) days. In certain circumstances, the AUTHORITY may extend the ninety (90) day period subject to justification that is acceptable to the AUTHORITY.

(3) The certificate holder's corrective action plan shall:

i. be submitted by the date specified by the Authority;
ii. identify the root cause of the non-compliance;
iii. indicate the person, position, department or entity responsible for the corrective action;
iv. indicate the corrective action required including any multiple steps; and
v. be acceptable to the Authority.

(c) Upon the completion and/or implementation of a corrective action, the ATS provider shall notify the Authority and provide evidence of its resolution.

(d) In the event of level one or level two findings, the certificate may be subject to revocation or a partial or full suspension or restriction.

CAR 172.022 Suspension and Revocation of Certification

(a) The Authority may state, that a certificate is suspended if the AUTHORITY reasonably considers that not suspending the certificate would be likely to have an adverse effect on the safety of air navigation.

(b) Suspension of Air Traffic Service provider certificate may be imposed if:

(1) the service provider does not comply with the requirements stated in the certificate;
(2) the service provider failed to perform the corrective action plan stated in the certificate in the exact period of time if so stated; and
(3) The investigation, in case of an accident, proves that it was caused due to the faulty procedures and/or the malfunction or failure of system.

(c) When a suspension is imposed, the AUTHORITY will state the reasons for such action and furnish them to the service provider.

(d) The service provider may appeal against such notice within thirty (30) days of receipt.

(e) The service provider shall furnish to the AUTHORITY any documents, records, or other pertinent information supporting the appeal.

(f) The Authority may confirm, modify, or set aside the proposed suspension based on the appeal.

(g) The AUTHORITY may permanently revoke Air Traffic Service provider certificate as a subsequent procedure to suspension if:

(1) The Service provider carries out an action in violation of the Civil Aviation Law or the regulation;
(2) It is verified that the certificate holder will not be able to remedy non-compliant areas; or
(3) The certificate holder stops providing the air traffic service concerned without a convincing argument.

(h) The revoked certificate cannot be renewed; it has to be reissued not less than one year after the revocation date.

(i) The amendment as referred in paragraphs (b) and (g) shall take effect at the time the decision is made.

CAR 172.023 Objectives of Air Traffic Service

The objectives of air traffic services shall be to:

(a) Prevent collisions between aircraft;

(b) Prevent collisions 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.

CAR 172.025 Divisions of Air Traffic Service

The air traffic services shall comprise three services identified as follows.

(a) ***The air traffic control service***, to accomplish objectives a), b) and c) of CAR 172.023 Objectives of Air Traffic Service, this service being divided in three parts as follows:
  (1) ***Area control service****: the provision of air traffic control service for controlled flights, except for those parts of such flights described in (1) b) and c), in order to accomplish objectives a) and c) of CAR 172.023 Objectives of Air Traffic Service;*
  (2) ***Approach control service****: the provision 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 CAR 172.023 Objectives of Air Traffic Service;*
  (3) ***Aerodrome control service****: the provision of air traffic control service for aerodrome traffic, except for those parts of flights described in (1) b), in order to accomplish objectives a), b) and c) of CAR 172.023 Objectives of Air Traffic Service.*
(b) ***The flight information service***, to accomplish objective d) of CAR 172.023 Objectives of Air Traffic Service
(c) ***The alerting service***, to accomplish objective e) of CAR 172.023 Objectives of Air Traffic Service
(d) Any other service provided in accordance with SUBPART D.

CAR 172.027 Determination of the Need for Air Traffic Services

(1) The need for the provision of air traffic services shall be determined by the AUTHORITY in consideration of the following:
  (a) the types of air traffic involved;
  (b) the density of air traffic;
  (c) the meteorological conditions; and
  (d) Such other factors as may be relevant.

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 operation is involved would not;
b) meteorological conditions might have considerable effect in areas where there 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.

(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 area.

CAR 172.029 Designation of the Portions of Airspace and Controlled Aerodromes Where Air Traffic Services will be provided

When it has been determined that air traffic services will be provided in particular portions of the airspace or at particular aerodromes, then those portions of the airspace or those aerodromes shall be designated by the AUTHORITY in relation to the air traffic services that are to be provided.

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

(a) ***Flight information regions***. 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 regions.

(b) ***Control areas and control zones***. Those portions of the airspace where it is determined that air traffic control service will be provided to IFR flights shall be designated as control areas or control zones.

Note. — *The distinction between control areas and control zones is made in CAR 172.035.*

(1) 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 B, C, or D airspace.

(2) Where designated within a flight information region, control areas and control zones shall form part of that flight information region.

(c) ***Controlled aerodromes***. Those aerodromes where it is determined that air traffic control service will be provided to aerodrome traffic shall be designated as controlled aerodromes.

CAR 172.031 Classification of Airspaces

(a) ATS airspaces shall be classified and designated in accordance with Appendix 4 of this CAR

(b) The Authority shall select those airspace classes appropriate to their needs.

(c) The requirements for flights within each class of airspace shall be as shown in Appendix 4.

Note. — *Where the ATS airspaces adjoin vertically, i.e. one above the other, flights at a common level would comply with requirements of, and be given services applicable to, the less restrictive class of airspace. In applying these criteria, Class B airspace is therefore considered less restrictive than Class A airspace; Class C airspace less restrictive than Class B airspace, etc.*

CAR 172.033 Establishment and Designation of the Units Providing Air Traffic Services

The Air traffic services shall be provided by units established and designated as follows:

(a) Flight information centres shall be established to provide flight information service and alerting service within flight information regions, unless the responsibility of providing such services within a flight information region is assigned to an air traffic control unit having adequate facilities for the discharge of such responsibility

Note. — *This does not preclude delegating to other units the function of providing certain elements of the flight information service.*

(b) Air traffic control units shall be established to provide air traffic control service, flight information service and alerting service within control areas, control zones and at controlled aerodromes.

Note. — *The services to be provided by various air traffic control units are indicated in CAR 172.035 Specifications for Flight Information Regions, Control Areas and Control Zones.*

CAR 172.035 Specifications for Flight Information Regions, Control Areas and Control Zones

(a) The delineation of airspace, wherein air traffic services are to be provided, should be related to the nature of the route structure and the need for efficient service rather than to national boundaries.

Note 1. — *Agreements to permit the delineation of airspace lying across national boundaries are advisable when such action will facilitate the provision of air traffic services (see CAR 172.005). Agreements which permit delineation of airspace boundaries by straight lines will, for example, be most convenient where data processing techniques are used by air traffic services units.*

Note 2. *— Where delineation of airspace is made by reference to national boundaries there is a need for suitably sited transfer points to be mutually agreed upon*.

(b) Flight information regions:

(1) Shall be delineated to cover the whole of the air route structure to be served by such regions.

(2) Shall include all airspace within its lateral limits, except as limited by an upper flight information region.

(3) 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 flight information region and shall coincide with a VFR cruising level of the tables in ICAO CAR 180, Appendix 3.

Note. — *In cases where an upper flight information region is established the procedures applicable therein need not be identical with those applicable in the underlying flight information region*

(c) Control areas

(1) Including, inter alia, airways and terminal control areas shall be delineated so as to encompass sufficient airspace to contain the flight paths of those IFR flights or portions thereof to which it is desired to provide the applicable parts of the air traffic control service, considering the capabilities of the navigation aids normally used in the area.

Note. — *In a control area other than one formed by a system of airways, a system of routes may be established to facilitate the provision of air traffic control.*

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

Note*. — This does not imply that the lower limit has to be established uniformly in a given control area (see Figure A-5 of the Air Traffic Services Planning Manual (Doc 9426), Part I, Section 2, Chapter 3).*

(3) The lower limit of a control area should, when practicable and desirable in order to allow freedom of action for VFR flights below the control area, be established at a greater height than the minimum specified in (2).

(4) When the lower limit of a control area is above 900 m (3 000 ft) MSL it should coincide with a VFR cruising level of the tables in Appendix 3 to CAR180.

Note. — *This implies that the selected VFR cruising level be such that expected local atmospheric pressure variations do not result in a lowering of this limit to a height of less than 200 m (700 ft) above ground or water.*

(5) an upper limit of a control area shall be established when either:

i. Air traffic control service will not be provided above such upper limit; or

ii. The control area is situated below an upper control area, in which case the upper limit shall coincide with the lower limit of the upper control area.

When established, such upper limit shall coincide with a VFR cruising level of the tables in Appendix 3 to CAR180

(d) Flight information regions or control areas in the upper airspace

(1) Where it is desirable to limit the number of flight information regions or control areas through which high flying aircraft would otherwise have to operate, a flight information region or control area, as appropriate, should be delineated to include the upper airspace within the lateral limits of a number of lower flight information regions or control areas.

(e) Control zones:

(1) The lateral limits of control zones shall encompass at least those portions of airspace, which are not within control areas, containing the paths of IFR flights arriving at and departing from aerodromes to be used under instrument meteorological conditions.

Note. — *Aircraft holding in the vicinity of aerodromes are considered as arriving aircraft.*

(2) the lateral limits of a control zone shall extend to at least 5 NM from the centre of the aerodrome or aerodromes concerned in the directions from which approaches may be made.

Note. — *A control zone may include two or more aerodromes situated close together.*

(3) If a 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.

Note. — *An upper limit higher than the lower limit of the overlying control area may be established when desired.*

(4) If a control zone is located outside of the lateral limits of a control area, an upper limit should be established.

(5) If it is desired to establish the upper limit of a control zone at a level higher than the lower limit of the control area established above it, or if the control zone is located outside of the lateral limits of a control area, its upper limit should be established at a level which can easily be identified by pilots. When this limit is above 900 m (3 000 ft) MSL it should coincide with a VFR cruising level of the tables in Appendix 3 to CAR 180.

Note. — *This implies that, if used, the selected VFR cruising level be such that expected local atmospheric pressure variations do not result in a lowering of this limit to a height of less than 200 m (700 ft) above ground or water.*

CAR 172.037 Identification of Air Traffic Service Units and Airspaces

(a) An area control centre or flight information centre should be identified by the name of a nearby town, city, or geographic feature.

(b) An aerodrome control tower or approach control unit should be identified by the name of the aerodrome at which it is located.

(c) A control zone, control area, or flight information region should be identified by the name of the unit having jurisdiction over such airspace.

CAR 172.039 Establishment and Identification of ATS Routes

(a) When ATS routes are established, a protected airspace along each ATS route and a safe spacing between adjacent ATS routes shall be provided.

(b) When warranted by density, complexity or nature of the traffic, special routes should be established for use by low-level traffic, including helicopters operating to and from helidecks on the high seas. When determining the lateral spacing between such routes, account should be taken of the navigational means available and the navigation equipment carried on board helicopters.

(c) ATS routes shall be identified by designators.

(d) Designators for ATS routes other than standard departure and arrival routes shall be selected in accordance with the principles set forth in Appendix 1.

(e) Standard departure and arrival routes and associated procedures shall be identified in accordance with the principles set forth in Appendix 3.

Note 1. *— Guidance material relating to the establishment of ATS routes is contained in the Air Traffic Services Planning Manual (Doc 9426).*

Note 2. — *Guidance material relating to the establishment of ATS routes defined by VOR is contained in Attachment A.*

Note 3. — *The spacing between parallel tracks or between parallel ATS route centre lines based on performance-based navigation will be dependent upon the relevant navigation specification required.*

CAR 172.041 Establishment of Change-over Points

(a) Change-over points should be established on ATS route segments defined by reference to VHF omnidirectional radio ranges and should be limited to route segments of 110 km (60 NM) or more, except where route complexity, density of NAVAIDs, technical, or operational reasons warrant the establishment of change-over points on shorter segments.

(b) Unless otherwise established in relation to the performance of navigational aids or frequency protection criteria, the change-over point should be the mid-point between the facilities in the case of a straight route segment or the intersection of radials in the case of a route segment which changes direction between the facilities.

Note. — *Guidance on the establishment of change-over points is contained in Attachment A.*

CAR 172.043 Establishment and Identification of Significant Points

(a) Significant points shall be established for the purpose of defining an ATS route or instrument approach procedure and/or in relation to the requirements of air traffic services for information regarding the progress of aircraft in flight.

(b) Significant points shall be identified by designators.

(c) Significant points shall be established and identified in accordance with the principles set forth in Appendix 2.

CAR 172.045 Establishment and Identification of Standard Routes for Taxiing Aircraft

(a) Where necessary, standard routes for taxiing aircraft should be established on an aerodrome between runways, aprons and maintenance areas. Such routes should be direct, simple and where practicable, designed to avoid traffic conflicts.

(b) Standard routes for taxiing aircraft should be identified by designators distinctively different from those of the runways and ATS routes.

CAR 172.047 Coordination Requirements – General

(a) The ATS provider shall establish procedures to ensure that coordination can be effected between all of the ATS units listed in its operation manual in addition to the requirements in CAR 049 & 051 & 053 & 055 & 057 and the following:

(1) rescue coordination centres (RCCs);
(2) adjacent area control centres (ACCs)/Flight Information Regions (FIRs),
(3) aeronautical telecommunication providers;
(4) any other ATS unit with which regular operational co-ordination is required; and

If the ATS unit listed in the ATS provider's operation manual is an aerodrome control tower:

(5) the airport operator; and
(6) The apron management service,

(b) The ATS provider shall establish procedures for ensuring that an ATS letter of agreement for coordination is in place between each ATS unit listed in its operation manual and the entities listed in paragraph (a).

(c) The ATS provider shall establish procedures for ensuring that each ATS letter of agreement in paragraph (b):

(1) details matter that are necessary for effective co-ordination between the units party to the agreement; and
(2) is kept current; and

(3) is signed by senior representatives of the participating units; and
(4) is part of the ATS provider's operation manual.

(d) The ATS provider shall provide systems and procedures for facilitating communications between those ATS units that have an operational requirement to communicate with each other.

(e) The ATS provider shall provide systems and procedures for ensuring that ATS units, aircraft operators, and aviation meteorological service providers, if they require the information, are provided, through the exchange of ATS messages, with details of:
(1) the intended movement of each aircraft for which a flight plan has been filed, and any amendments to the flight plan; and
(2) Current information on the actual progress of the flight.

(f) The ATS provider shall establish procedures for ensuring that ATS messages are prepared and transmitted in accordance with procedures detailed and cross-referenced in AMC-CAR172 (Chapter 11 – Air Traffic Services Messages).

CAR 172.049 Coordination between the Operator and Air Traffic Service

(a) The ATS provider shall establish procedures to ensure that air traffic service units, in carrying out their objectives, shall have due regard for the requirements of the aircraft operator's consequent on their obligations as specified in CAR-OPS 1, and, if so required by the aircraft operators, shall make available to them or their designated representatives such information as may be available to enable them or their designated representatives to carry out their responsibilities.

(b) When so requested by an operator, messages (including position reports) received by air traffic service units and relating to the operation of the aircraft for which operational control service is provided by that operator shall, so far as practicable, be made available immediately to the operator or a designated representative in accordance with locally agreed procedures.

Note. — *For aircraft subjected to unlawful interference, see CAR 172.153 Service to Aircraft in the Event of an Emergency.*

CAR 172.051 Coordination between Military Authorities and Air Traffic Service

(a) The ATS provider shall establish procedures to maintain close cooperation with military authorities responsible for activities that may affect flights of civil aircraft. Coordination of activities potentially hazardous to civil aircraft shall be affected in accordance with CAR 172.053.

(b) The ATS provider procedures shall ensure that arrangements are made to permit information relevant to the safe and expeditious conduct of flights of civil aircraft to be promptly exchanged between air traffic service units and appropriate military units.

(c) The ATS provider procedures shall, either routinely or on request, in accordance with locally agreed procedures, provide appropriate military units with pertinent flight plan and other data concerning flights of civil aircraft. In order to eliminate or reduce the need for interceptions, the ATS provider shall designate any areas or routes where the requirements concerning flight plans, two-way communications and position reporting apply to all flights to ensure that all pertinent data is available in appropriate air traffic service units specifically for the purpose of facilitating identification of civil aircraft.

Note. — *For aircraft subjected to unlawful interference, see CAR 172.153 Service to Aircraft in the Event of an Emergency.*

(d) The ATS provider shall establish special procedures with military authorities in order to ensure that:
(1) air traffic service units are notified if a military unit observes that an aircraft which is, or might be, a civil aircraft is approaching, or has entered, any area in which interception might become necessary; and

(2) All possible efforts are made to confirm the identity of the aircraft and to provide it with the navigational guidance necessary to avoid the need for interception.

CAR 172.053 Coordination of Activities Potentially Hazardous to Civil Aircraft

(a) The ATS provider shall establish procedures to ensure that arrangements for activities potentially hazardous to civil aircraft, whether over the territory of Oman or over the high seas, are coordinated with the ATS provider. The coordination shall be effected early enough to permit timely promulgation of information regarding the activities in accordance with Procedures for Air Navigation Services — Aeronautical Information Management AMC- CAR 175.

(b) If the ATS Provider is not that of the State where the organization planning the activities is located, initial coordination should be effected through the ATS Provider responsible for the airspace over the State where the organization is located.

(c) In determining these arrangements, the following should be applied:
a) the locations or areas, times and durations for the activities should be selected to avoid closure or realignment of established ATS routes, blocking of the most economic flight levels, or delays of scheduled aircraft operations, unless no other options exist;
b) The size of the airspace designated for the conduct of the activities should be kept as small as possible; c) direct communication between the ATS Provider and the organization or unit conducting the activities should be provided for use in the event that civil aircraft emergencies or other unforeseen circumstances require discontinuation of the activities.

(d) The ATS provider shall ensure that a safety risk assessment is conducted, as soon as practicable, for activities potentially hazardous to civil aircraft and that appropriate risk mitigation measures are implemented.

Note 1. — *Such risk mitigation measures may include, but would not be limited to, airspace restriction or temporary withdrawal of established ATS routes or portions thereof.*

Note 2. — *Guidance on safety risk management can be found in CAR 100.*

(e) The ATS provider shall establish procedures to enable the organization or unit conducting or identifying activities potentially hazardous to civil aircraft to contribute to the safety risk assessment in order to facilitate consideration of all relevant safety significant factors.

Note. — *Guidance on collaborative decision-making (CDM) processes for safety risk assessment and promulgation through NOTAM that could involve military authorities can be found in the Manual Concerning Safety Measures Relating to Military Activities Potentially Hazardous to Civil Aircraft Operations (Doc 9554).*

(f) The ATS provider shall be responsible for initiating the promulgation of information regarding the activities.

(g) If activities potentially hazardous to civil aircraft take place on a regular or continuing basis, special committees should be established as required to ensure that the requirements of all parties concerned are adequately coordinated.

(h) Adequate steps shall be taken to prevent emission of laser beams from adversely affecting flight operations.

Note 1. — *Guidance material regarding the hazardous effects of laser emitters on flight operations is contained in the Manual on Laser Emitters and Flight Safety (Doc 9815).*

Note 2. — *See also CAR 139*

(i) In order to provide added airspace capacity and to improve efficiency and flexibility of aircraft operations, the ATS provide should establish procedures providing for a flexible use of airspace

reserved for military or other special activities. The procedures should permit all airspace users to have safe access to such reserved airspace.

CAR 172.055 Coordination Between Meteorological service provider and appropriate Air Traffic Services authority

The ATS provider shall establish procedures to ensure that aircraft receive the most up-to-date meteorological information for aircraft operations; arrangements shall be made, where necessary, between the meteorological service provider and the appropriate ATS authority for air traffic services personnel:

(a) In addition to using indicating instruments, to report, if observed by air traffic services personnel or communicated by aircraft, such other meteorological elements as may be agreed upon;
(b) To report as soon as possible to the associated meteorological office, meteorological phenomena of operational significance, if observed by air traffic services personnel or communicated by aircraft, which have not been included in the aerodrome meteorological report; and
(c) To report as soon as possible to the associated meteorological office pertinent information concerning pre-eruption volcanic activity, volcanic eruptions and information concerning volcanic ash cloud. In addition, area control centres and flight information centres shall report the information to the associated meteorological watch office and volcanic ash advisory centres (VAACs).

Note 1. — *VAACs are designated by regional air navigation agreements in accordance with AMC- CAR 174.*

Note 2. — *See CAR 172.133(d) Flight Information Service regarding transmission of special air-reports.*

(d) To maintain close coordination between area control centres, flight information centres and associated meteorological watch offices to ensure that information on volcanic ash included in NOTAM and SIGMET information is consistent.

CAR 172.057 Coordination between Aeronautical Information Service and appropriate air traffic services authorities

(a) The ATS provider shall establish procedures to ensure that aeronautical information service units obtain information to enable them to provide up-to-date pre-flight information and to meet the need for in-flight information; arrangements shall be made between aeronautical information service and ATS providers to report to the responsible aeronautical information services unit, with a minimum of delay:
    (1) Information on aerodrome conditions;
    (2) The operational status of associated facilities, services and navigation aids within their area of responsibility;
    (3) The occurrence of volcanic activity observed by air traffic services personnel or reported by aircraft; and
    (4) Any other information considered to be of operational significance.
(b) Before introducing changes to the air navigation system, due account shall be taken by the services responsible for such changes of the time needed by the aeronautical information service for the preparation, production and issuance of relevant material for promulgation. To ensure timely provision of the information to the aeronautical information service, close coordination between those services concerned is therefore required.
(c) Of particular importance are changes to aeronautical information that affect charts and/or computer-based navigation systems which qualify to be notified by the Aeronautical Information Regulation and Control (AIRAC) system, as specified in CAR 175 / AMC CAR175. The predetermined,

internationally agreed AIRAC effective dates, shall be observed by the responsible ATS provider when submitting the raw information/data to aeronautical information services.

Note. *— Detailed specifications concerning the AIRAC system are contained in AMC CAR 175*

(d) The ATS provider responsible for the provision of raw aeronautical information/data to the aeronautical information services shall do so while taking into account accuracy and integrity requirements required to meet the needs of end-user of aeronautical data.

Note 1. — *Specifications concerning the accuracy and integrity classification of air traffic services-related aeronautical data are contained in AMC CAR 175.*

Note 2.— *Specifications for the issue of a NOTAM, SNOWTAM and ASHTAM are contained in CAR 175.*

Note 3.— *Reports of volcanic activity comprise the information detailed in AMC- CAR 174.*

Note 4*.— AIRAC information is distributed by the aeronautical information service at least 42 days in advance of the AIRAC effective dates with the objective of reaching recipients at least 28 days in advance of the effective date.*

Note 5.— *The schedule of the predetermined, internationally agreed AIRAC common effective dates at intervals of 28 days and guidance for the AIRAC use are contained in the Aeronautical Information Services Manual (Doc 8126, Chapter 2, 2.6).*

CAR 172.059 Aeronautical Data

(a) The ATS provider responsible for the Determination and the reporting of air traffic services-related aeronautical data shall be in accordance with the accuracy and integrity requirements set forth in AMC CAR 175 Aeronautical Information Management which shall meet the needs of the end-user of aeronautical data.

Note. — *Specifications concerning the accuracy and integrity classification of air traffic services-related aeronautical data are contained in AMC CAR 175.*

(b) The ATS provider shall implement digital data error detection techniques to be used during the transmission and/or storage of aeronautical data and digital data sets.

Note. — *Detailed specifications concerning digital data error detection techniques are contained in AMC CAR 175.*

CAR 172.061 Common Reference Systems

(a) ***Horizontal reference system:***

World Geodetic System-1984 (WGS-84) shall be used as the horizontal (geodetic) reference system for air navigation. Reported aeronautical geographical coordinates (indicating latitude and longitude) shall be expressed in terms of the WGS-84 geodetic reference datum.

Note. — *Comprehensive guidance material concerning WGS-84 is contained in the World Geodetic System — 1984 (WGS-84) Manual (Doc 9674).*

(b) ***Vertical reference system:***

Mean sea level (MSL) datum, which gives the relationship of gravity-related height (elevation) to a surface known as the geoid, shall be used as the vertical reference system for air navigation.

Note. — *The geoid globally most closely approximates MSL. It is defined as the equipotential surface in the gravity field of the Earth which coincides with the undisturbed MSL extended continuously through the continents.*

(c) ***Temporal reference system:***

The Gregorian calendar and Coordinated Universal Time (UTC) shall be used as the temporal reference system for air navigation. When a different temporal reference system is used, this shall be indicated in GEN 2.1 of the Oman Aeronautical Information Publication (AIP).

CAR 172.063 Prohibited, Restricted and Danger Areas

(a) Each prohibited area, restricted area, or danger area established by the ATS Provider shall, upon initial establishment, be given an identification and full details shall be promulgated.

Note. — *See AMC – CAR 175,*

(b) The identification so assigned shall be used to identify the area in all subsequent notifications pertaining to that area.

(c) The identification shall be composed of a group of letters and figures as follows:
   (1) nationality letters for location indicators assigned to Oman;
   (2) a letter P for prohibited area, R for restricted area and D for danger area as appropriate; and
   (3) a number, unduplicated within Oman.

Note. — *Nationality letters are those contained in Location Indicators (Doc 7910)*

(d) To avoid confusion, identification numbers shall not be reused for a period of at least one year after cancellation of the area to which they refer.

(e) When a prohibited, restricted or danger area is established, the area should be as small as practicable and be contained within simple geometrical limits, so as to permit ease of reference by all concerned.

CAR 172.065 Special Use Airspace (SUAs)

(a) The ATS provider shall establish procedures to ensure that separation is provided between controlled flights and active designated special use airspace, except when:
   (1) The pilot has approval from the Authority to operate in the airspace; or
   (2) In the case of a danger area or a volcanic hazard zone, the pilot has notified an express intention to operate in the danger area or the volcanic hazard zone, as the case may be; or
   (3) It is known, or reasonably believed, that the pilot of a VFR flight or an IFR flight navigating by visual reference is aware that the airspace is active; or
   (4) On a request by the pilot, the flight is cleared to maintain its own separation from the airspace.

CAR 172.067 Instrument Flight Procedure Design Service

(a) The ATS provider shall establish and maintain an instrument flight procedure design service in accordance with Appendix 7, CAR173/ ICAO Doc 8168, and Doc 9906.

(b) Procedure design shall use qualified personnel, a quality assurance system, and independent validation.

(c) Safety assessments and post-implementation reviews shall be conducted and documented.

CAR 172.069 Performance-Based Navigation (PBN) Operations

(a) The ATS provider shall prescribe navigation specifications for designated airspace, routes and procedures in accordance with ICAO Doc 9613 and regional agreements, considering infrastructure and functionality limitations.

(b) Navigation specifications shall be appropriate to the level of communications, navigation and ATS available

(c) Safety assessments shall be conducted prior to implementation, with post-implementation reviews to ensure continued suitability and safety performance

(d) Documented evidence of prescribed specifications, assessments and reviews shall be maintained.

CAR 172.071 Performance-Based Communication (PBC) Operations

(a) The ATS provider shall prescribe required communication performance (RCP) specifications for designated airspace, routes or procedures, in accordance with CAR172, CAR171, and regional agreements, considering infrastructure and communication functionality limitations.

(b) Prescribed RCP specifications shall be appropriate to the air traffic services provided and the communication capabilities of the systems used.

(c) The ATS provider shall conduct safety assessments prior to implementation of RCP specifications and perform post-implementation reviews to ensure continued operational suitability and compliance to this CAR, CAR100.

(d) Documented evidence of RCP specifications, safety assessments and reviews shall be maintained.

CAR 172.073 Performance-Based Surveillance (PBS) Operations

(a) The ATS provider shall prescribe required surveillance performance (RSP) specifications for designated airspace, routes or procedures, in accordance with this CAR, CAR171 and regional agreements, taking into account infrastructure and surveillance functionality limitations.
(b) Prescribed RSP specifications shall be appropriate to the air traffic services provided and the surveillance capabilities available.
(c) Where RSP specifications are prescribed, ATS units shall be equipped and operated in a manner consistent with those specifications.
(d) The ATS provider shall maintain documented evidence of prescribed RSP specifications, assessments, and reviews.

SUBPART B – CERTIFICATION REQUIREMENTS

CAR 172.100 Organisation that Provides Air Traffic Services

(a) The organisation that provides an Air Traffic Service shall establish and maintain an effective management structure necessary for the safe and efficient provision of air traffic services by ensuring the following adequate elements are in place:
   i. Organisation structures
   ii. ATS systems
   iii. Management functions and activities
   iv. Operational positions

(b) The management structure shall be responsible to ensure compliance of all of its personnel to provide air traffic services as covered in the certificate in accordance with these regulations.

CAR 172.101 Personnel Requirements

(a) The ATS provider shall engage, employ, or contract:

(1) A senior person identified as an Accountable Manager who is approved by the Authority and has full control of the resources, final authority over operations under the certificate/approval of the ATS provider organization and ultimate responsibility and accountability for the establishment, implementation and maintenance of the SMS; safety policy and the resolution of all safety issues.

(2) The accountable manager shall nominate ATS / ATM post holders, approved by the Authority, who are responsible for the management and supervision of safety critical aspects for ATS provider organization.

(3) The Authority requires ATS provider to hold an appropriate approval for the ATC post holders (key management personnel) as follows:
- ATM/ATC Director
- ACC Chief of sections
- APP Chief of sections
- TWR Chief of sections
- Airspace Chief of sections
- Senior Air Traffic Control Officer (SATCO)

(4) The Authority requires ATS provider to submit the CV(s) & certificates & qualifications for the candidates of those persons in CAR 172.101 (1) and (2).

(5) The Authority Evaluates the candidature files and a written approval or rejection decision shall be submitted to the ATS provider organisation.

(6) The Authority in coordination with the organisation may restrict, suspend, or revoke, the approval of a Post Holder. A report shall be submitted to ATS provider organization indicating the reasons for this restriction, suspension, or revocation.

(7) A vacancy, or potential vacancy, of any of the Post Holder positions, shall be notified to the Authority within 5 working days, be followed by an action plan and a submission of new candidates for the position.

(8) The ATS provider should establish and implement a training program to upgrade the competency of the personnel referred to in CAR 172.101 (1) and (2).

(b) The ATS provider shall establish policies and procedures in to:

(1) ensure the competence of those personnel who are authorized by the ATS provider to provide the air traffic services, and training and assessment for those services, listed in the ATS provider's operation manual; and
(2) provide those authorized personnel with written evidence of the scope of their authorization; and
(3) ensure that those authorized personnel hold appropriate current licenses and ratings consistent with Appendix 2; and
(4) ensure, where practicable, that authorized personnel only exercise the privileges of their rating or ratings if they are familiar with all relevant and current information; and
(5) facilitate, for rated air traffic service license holders, compliance with the recent experience requirements; and
(6) ensure, where practicable, that an air traffic controller shall not exercise the privileges of their rating or ratings:
    i. unless they comply with any endorsements on their medical certificate; and
    ii. when any decrease in their medical fitness might render them unable to safely exercise these privileges; and
    iii. unless they comply with the English language proficiency requirements; and
(7) Determine the capacity of the ATS system, including the number of staffs required, to ensure the provision of an adequate ATS system; and
(8) Enable recruitment and retention of appropriately qualified and experienced ATS staff; and
(9) Provide job descriptions for operational ATS staff and significant support positions.

CAR 172.103 Language Proficiency

(a) The ATS provider shall ensure that air traffic controllers meet ICAO language proficiency requirements and are able to speak and understand the language(s) used for radiotelephony communications, as specified in CAR-ATCO.
(b) English shall be used in communications between air traffic control units, except where another language has been mutually agreed in advance.

CAR 172.105 ATS Training

1) Training Requirement

(a) The ATS provider shall establish and implement a Competency-based training and assessment programme for air traffic controllers (ATCOs) and ATC on-the-job training instructors (OJTIs).
(b) Training may be delivered by an approved training organization, the ATS Provider, or a combination of both.
(c) ATCOs shall meet the competency standards approved by the Authority for licensing and unit endorsements.
(d) The training programme shall include:
    i. Initial training (basic and rating),
    ii. Unit training (pre-OJT and OJT), and
    iii. Continuation training (refresher and conversion).
(e) Training and assessment shall be competency-based, include ongoing evaluation, and incorporate remedial actions where needed.

(f) Unit training and OJT shall be conducted under the supervision of qualified, authorized OJTIs. within the ATS provider SMS framework.
(g) Competence shall be assured through approved assessment schemes defining scope, frequency and follow-up actions for underperformance.
(h) Competency assessments for ATCOs shall be undertaken by qualified assessors who are independent of the direct provision of training to the candidate being assessed.
(i) Assessor authorization shall be granted by the Authority, and records of assessor qualifications and assessment activities shall be maintained by the ATS provider.
(j) The ATS provider shall maintain secure training and competence records for all ATCOs, OJTIs, and assessors.

2) Unit Training Plan (UTP)

(a) The ATS provider shall develop, implement and maintain a documented Unit Training Plan (UTP) for each ATS unit, in accordance with CAR ATCO, ICAO Annex 1, PANS-TRG (Doc 9868) and ICAO Doc 10056.
(b) The UTP shall:
    i. Define the phases of unit training (pre-OJT and OJT) and their objectives;
    ii. Be tailored to the unit's specific operational procedures, environment, and systems;
    iii. Include training gap analysis for each trainee;
    iv. Incorporate simulation or equivalent training tools where traffic complexity requires; and
    v. Provide for evaluation, remedial training, and documentation of trainee progress.
(c) The UTP shall be Accepted by the Authority and subject to continuous review within the ATS Safety Management System (SMS).
(d) Records of all unit training activities and assessments shall be securely maintained.

CAR 172.107 Facility Requirements

1) General Requirements

(a) The ATS provider shall establish and maintain facilities appropriate to the type of ATS provided, including but not limited to:
    1. Aerodrome Control Towers (local, remote, or temporary);
    2. Approach Control Offices;
    3. Area Control Centres (ACC);
    4. Flight Information Centres (FIC); and Dedicated training and assessment facilities, as documented in the operations manual.

2) Aerodrome Control Towers

(a) Towers shall be designed, located, and equipped to ensure:
    1. Maximum practicable visibility of aerodrome traffic;
    2. Protection from glare, reflection, noise, and unauthorized interference;
    3. Safeguarding against developments affecting visibility;
    4. Security controls restricting unauthorized entry and ensuring protection of operational areas, systems, and records;
    5. Integration of safety and security risk assessments into facility design and operation.
    6. Display and control equipment positioned in accordance with ICAO Doc 9426 ergonomic principles.

3) Facilities at Solo-Watch Locations

1. Rest facilities minimizing interruption to ATS duties;
2. Food and beverage storage and preparation in the VCR;
3. Safety and security provisions ensuring staff welfare and protection from external hazards.

4) Communications

(a) ATS facilities shall be equipped with secure, reliable, and redundant communications, including:

1. Air–Ground: Two-way voice with all aircraft in the area of responsibility, with separate frequencies for aerodrome control (TWR), ground movement control (GND), and clearance delivery (CD) where justified by traffic density. All frequencies shall be continuously recorded, UTC-stamped, and safeguarded.
2. Ground–Ground: Direct and secure circuits, independent of public networks, shall exist between:
   i. ATS units (TWR, APP, ACC, FIC, AFISOs,…);
   ii. MET offices;
   iii. Military units (where applicable);
   iv. AIS/AIM services
   v. Rescue Coordination Centres (RCCs) And aerodrome Rescue and Fire Fighting Services (RFFS) (where applicable);
   vi. Apron Management Services (where applicable);
   vii. Aerodrome operator and security services (where applicable);
   viii. Adjacent ACCs/Flight Information Regions (FIRs) (where applicable);
   ix. Aerodrome operator and security services (where applicable)
3. Data Communications: access to AFTN/AMHS or alternate agreed means, with redundancy and cyber-security provisions.

(b) Such circuits shall be independent of public networks, continuously available, and subject to regular operational testing. Where practicable, communications shall be voice-recorded and logs maintained

(c) Fallback Telephone communications shall be available as a backup, tested regularly, and recorded where practicable

5) Core Facility Equipment (Applies to TWR, ACC, APP, FIC unless noted)

1. Traffic situation display (current and pending flights).
2. Flight data/strip system (electronic or manual).
3. Independent and redundant power supply.
4. Current aeronautical maps and charts.
5. Clocks synchronized to UTC.
6. Log-keeping system.
7. Voice and data recording systems for all channels.
8. Status monitoring of navaids, approach/landing aids, aerodrome facilities, and critical systems, ensuring information is available without delay to ATS units.
9. Emergency alerting system (aural and visual).
10. Fire detection and suppression systems.
11. Backup/emergency lighting in VCRs, ops rooms, and evacuation routes.

12. Clearly marked and unobstructed evacuation routes with muster points.
13. Access-controlled telecommunications and IT systems.
14. Operational information displays shall comply with ICAO Doc 9426 requirements

(a) Additional Tower-Specific Equipment:

1. Binoculars.
2. Signal lamp (green/red/white).
3. Airfield lighting control panel (if applicable).
4. Two independent sources of altimeter setting (one calibrated barometer in VCR).
5. Wind speed/direction display (aligned with MET source).
6. Visibility and cloud base checkpoints.
7. Outside temperature indicator.

(b) Additional APP/ACC Equipment:

1. ILS/MLS status monitors for aerodromes under responsibility.
2. Wind data display aligned with tower source.
3. Surveillance system displays (where available)

6) Safety & Security Management

(a) Facilities shall operate under the ATS provider's SMS (CAR100), with documented hazard identification, risk assessments, and mitigation measures.

(b) Security provisions shall protect ATS facilities, systems, and personnel against unlawful interference, cyber threats, and unauthorized access.

(c) Safety/security reporting, investigation, and corrective action shall be included in provider processes.

7) Reliability & Redundancy

(a) All operational systems (comms, surveillance, navigation, displays) shall be designed with sufficient reliability, availability, and redundancy to minimize service interruption.

(b) Telecommunications equipment shall be operated in accordance with CAR 171

(c) Testing of Redundancy: The ATS provider shall establish procedures for the regular testing and documentation of redundancy measures, including backup power supplies, emergency lighting, evacuation routes, and communication systems. Test results shall be logged, reviewed, and retained.

8) Status Monitoring

(a) All status monitors shall provide:

1. Continuous visual indication of current status;
2. Aural alerts on status change;
3. Secure logging and protection against data loss or manipulation.

CAR 172.109 Notification of Facility Status

(a) The ATS provider shall establish procedures to notify the users of its air traffic services and/or relevant operational information and of any changes in the operational status of each facility or service listed in the ATS provider's operation manual.

(b) The ATS provider's procedures shall ensure that the procedures established under paragraph (a) require:

(1) operational information for each of the ATS provider's air traffic services to be forwarded to the holder of the aeronautical information service certificate; and
(2) the users of the ATS provider's air traffic services to be notified without delay of any change in operational status of a facility or service that may affect the safety of air navigation, and
(3) except if the change is temporary in nature, information concerning any change in operational status is forwarded to the holder of the aeronautical information service certificate for the NOTAM service.

CAR 172.111 Shift Administration

The ATS provider shall establish procedures to ensure that:

(1) adequate time is provided at the beginning and end of each shift, for the performance of those duties required:
    i. before providing an air traffic service; and
    ii. after ceasing to provide an air traffic service; and
(2) a minimum of five (5) minutes is provided for each transfer of watch at an ATS operational position.

CAR 172.113 Service Disruptions

(a) The ATS provider shall establish procedures to:
    (1) advise the AUTHORITY of any planned disruption to the provision of air traffic services that could have an impact on safety; and
    (2) investigate any unplanned disruption to the provision air traffic services; and
    (3) report to the AUTHORITY, within forty-eight (48) hours of the occurrence, the circumstances surrounding any unplanned disruption to air traffic services when the disruption affected, or could have affected, the safety of air traffic.
(b) Disruptions reportable under paragraph (a) shall include, but are not limited to, any:
    (1) failure to open watch within fifteen (15) minutes of the promulgated opening time; and
    (2) any interruption, of greater than ten (10) minutes, to the normal provision of an air traffic service; and
    (3) Curtailment of watch, by greater than thirty (30) minutes, from the promulgated off watch time.

CAR 172.115 Security

(a) The ATS provider shall prepare an ATS security program.
(b) Each ATS security program should specify the physical security requirements, practices, and procedures to be followed for the purposes of minimizing the risk of destruction of, damage to, or interference with the operation of, any ATS unit operated by ATS provider where such destruction, damage, or interference is likely to endanger the safety of aircraft.
(c) Without limiting the generality of paragraph (b), the security program should specify such physical security requirements, practices, and procedures as may be necessary:
    (1) to ensure that entrances to permanent ATS facilities operated by the ATS provider are subject to positive access control at all times, so as to prevent unauthorized entry; and
    (2) to protect personnel on duty; and

(3) to be followed in the event of a bomb threat or other threat of violence against an ATS unit; and
(4) to monitor unattended ATS unit buildings to ensure that any intrusion or interference is detected.

CAR 172.117 Logbooks and Position Logs

(a) The ATS provider shall establish procedures to ensure that a logbook or electronic logbook, with sequentially numbered pages, is kept at each ATS unit, and, where a unit has physically separate operations areas, at each such location within the unit.
(b) The procedure shall ensure that:
  (1) the logbook is maintained by the senior person on duty, or the person on watch at a nominated operating position; and
  (2) the logbook is maintained throughout the hours of watch of the unit or operations room; and
  (3) all entries include the time of entry; and
  (4) the person responsible for maintaining a logbook signs "On Watch", and effects transfer of responsibility by successive "On Watch" entries; and
  (5) logbook entries are:
    i. in chronological sequence and in ink; and
    ii. without erasure, defacement, or obliteration; and
    iii. corrected by drawing a single line through the erroneous information and initialling the correction; and
  (6) actual times of opening and closing watch are recorded in the logbook, together with the reason for every variation from published hours of service; and
  (7) Logbooks are retained for a period of three (3) years from the date of final entry.
(c) Each ATS provider shall establish a system or procedure to ensure the keeping of an operating position log consisting of the elements in paragraph (d)(1), when such information is not available in the logbook required by paragraphs (a) and (b).
(d) The system or procedure shall ensure that the operating position log:
  (1) contains sufficient information to identify:
    i. the name of the operational position; and
    ii. when that position was in operation; and
    iii. all of the services and/or functions being provided from that position during the period it was operational including:
      - operational services such as ATC;
      - on-the-job training;
      - operational assessment, validation, or examination;
      - monitoring;
    iv. the identity of the individual(s) in (iii) above; and
    v. if the position had other operational positions combined with it; and
  (2) is retained for a period of thirty (30) days from the date of filing.

CAR 172.119 Documentation

(a) The ATS provider shall hold copies of the relevant technical manuals, and all other documents, necessary for the provision and operation of the services listed in its operation manual.

(b) The ATS provider shall establish a procedure to control all the documentation required by paragraph (a). The procedure shall ensure that:

(1) all incoming documentation is reviewed, and actioned as required, by authorized personnel; and

(2) all documentation is reviewed and authorized before issue; and

(3) current issues of all relevant documentation are available to personnel at all locations where they need access to such documentation for the provision and operation of air traffic services; and

(4) all obsolete documentation is promptly removed from all points of issue or use; and

(5) any obsolete documents retained as archives are suitably identified as obsolete; and

(6) changes to documentation are reviewed and approved by authorized personnel who shall have access to pertinent background information upon which to base their review and approval; and

(7) the current version of each item of documentation can be identified to preclude the use of out-of-date editions.

CAR 172.121 Records

(a) The ATS provider shall establish systems and procedures to identify, collect, index, file, archive, secure, maintain, access, and dispose of, records necessary for:

(1) the operational provision of air traffic services; and

(2) the purpose of assisting with any accident or incident investigation.

(b) The records shall include:

(1) telephone communications; and

(2) radio broadcasts and communications; and

(3) air-ground digital data exchanges; and

(4) radar and/or surveillance information; and

(5) filed flight plans including standard and repetitive plans; and

(6) flight progress strips where used or equivalent electronic flight strips; and

(7) staff duty rosters; and

(8) appropriate meteorological and aeronautical information, except where the information is retained for an equivalent period by a meteorological or AIS organization; and

(9) a record of each internal quality assurance review carried out under the procedures required by CAR 172.167. The record shall detail the activities reviewed and any necessary follow-up corrective and preventive actions.

(c) The ATS provider shall establish systems and procedures to ensure the electronic recording of:

(1) all ATS radio and telephone communications; and

(2) all high-frequency air-ground communications; and

(3) all relevant data from primary and secondary radar equipment, or obtained through automatic dependent surveillance (ADS) or any other system, used in providing or supporting an ATC service; and

(4) any transfer and acceptance of control process not conducted by telephone.

(d) The ATS provider shall establish systems and procedures to ensure that electronic records required by paragraph (c):

(1) include time recording, correct to within five (5) seconds of UTC, as determined by reference to a standard time station or GPS time standard; and

(2) either:

i. replicate the voice communications, and, if applicable, the situation displays, applying at the particular operating position; or

ii. are accompanied by a statement fully describing the differences between the recording supplied and a recording in accordance with paragraph (d)(2)(i).

(e) For the purposes of paragraph (d)(2) the term "situation display" includes any visual presentation of aircraft position, however derived.

(f) The option provided by paragraph (d)(2)(ii) shall apply only to equipment in service on the date this CAR comes into force.

(g) The ATS provider shall establish systems and procedures to ensure that all records, except where replication is required by paragraph (d)(2)(i), are of sufficient clarity to convey the required information.

(h) The ATS provider shall establish procedures to ensure that the records referred to in paragraph (b) are retained for thirty-one (31) days from the date of entry, except for:

(1) staff duty rosters; and

(2) Written records associated with the requirements of CAR 172.113 paragraphs (a)(2) and (3) which shall be retained for two (2) years.

(i) The ATS provider shall ensure that the determination and reporting of air traffic services related aeronautical data shall be in accordance with the accuracy and integrity requirements set forth in CAR 175.

CAR 172.122 Requirements for the Provision of Air Traffic Control Services

(a) The ATS provider shall provide an air traffic control service:

(1) to all IFR flights in airspace Classes A, B, C, D and E;

(2) to all VFR flights in airspace Classes B, C and D;

(3) to all special VFR flights; and

(4) to all aerodrome traffic at controlled aerodromes.

(b) The ATS provider shall provide air traffic control services described in CAR 172.025 by various units as follows:

(1) Area control service:

i. by an area control centre; or

ii. by the unit providing approach control service in a control zone or in a control area of limited extent which is designated primarily for the provision of approach control service and where no area control centre is established.

(2) Approach control service:

i. by an aerodrome control tower or area control centre when it is necessary or desirable to combine under the responsibility of one unit the functions of the approach control service with those of the aerodrome control service or the area control service; and

ii. by an approach control unit when it is necessary or desirable to establish a separate unit.

(3) Aerodrome control service: by an aerodrome control tower.

CAR 172.123 Area and Approach Control Services

(a) The ATS provider in respect of an area or approach control service shall establish systems and procedures to:
   (1) determine from information received, the positions of known aircraft relative to each other; and
   (2) provide for the issue of ATC clearances, instructions, and information in accordance with the airspace classification and type of flight for the purpose of preventing collisions between aircraft under the control of the unit, and for expediting and maintaining a safe and efficient flow of traffic; and
   (3) co-ordinate clearances with other ATC units as necessary; and
   (4) display information on aircraft movements together with a record of clearances issued, in a manner that permits ready analysis of such information.

(b) Except as provided in paragraph (d) and CAR 172.141, the procedures required by paragraph (a)(2) must specify that vertical or horizontal or composite separation in accordance with paragraph (c) must be provided between:
   (1) all flights in airspace Classes A, and B;
   (2) all IFR flights in airspaces Classes C, D and E;
   (3) all IFR flights and VFR flights in airspace Class C
   (4) All IFR flights and special VFR flights
   (5) all special VFR flights;

(c) The separation required by paragraph (b) must be in accordance with the applicable criteria and minima prescribed in Subpart E.

(d) In Class D or E airspace, the ATC separation required by paragraph (b)(2) does not apply to an IFR flight if the pilot has been cleared to climb or descend subject to maintaining own separation from one other IFR flight. The clearance must not be issued unless:
   (1) the clearance is in response to a specific request from the pilot of the aircraft; and
   (2) the flight is during the day and visual meteorological conditions exist; and
   (3) an ATS Surveillance service is not available; and
   (4) the clearance is for a specific portion of the flight at or below 10 000ft AMSL, during climb or descent; and
   (5) the pilot of the other aircraft that will be essential traffic agrees with the application of the procedure; and
   (6) essential traffic information is passed to the pilots of all affected flights; and
   (7) the flights concerned are on the same ATC frequency.

(e) Where the air traffic control unit has cleared an IFR flight to fly maintain own separation to one other aircraft as in (d) the following shall apply:
   (1) The flight shall be instructed to remain in visual meteorological conditions
   (2) 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 visual meteorological conditions (VMC) cannot be maintained for the term of the clearance;

(3) 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 instrument meteorological conditions (IMC) and shall proceed in accordance with the alternative instructions given.

(f) When an air traffic control unit is vectoring an IFR flight and when giving an IFR flight a direct routing which takes the aircraft off an ATS route;

(1) the controller shall issue clearances such that the prescribed obstacle clearance will exist at all times until the aircraft reaches the point where the pilot will resume own navigation.

(2) The ATS provider shall be responsible for providing the controller with the minimum altitudes. When necessary, the relevant minimum vectoring altitude shall include a correction for low temperature effect.

CAR 172.125 Aerodrome Control Service

(a) The ATS provider in respect of an aerodrome control service shall establish systems and procedures to:

(1) determine, from information received and visual observation, the relative positions of known aircraft to each other; and

(2) provide for the issue of ATC clearances, instructions, and information, for the purpose of preventing collisions between:

i. aircraft flying in the vicinity of an aerodrome; and
ii. aircraft landing and taking off; and
iii. aircraft operating on the manoeuvring area; and
iv. aircraft, vehicles, and persons, operating on the manoeuvring area; and
v. aircraft on the manoeuvring area and obstructions on that area; and

(3) The procedures required by paragraph (a)(2) must specify the separation in accordance with paragraph (5) must be provided between:

i. all IFR flights in airspaces Classes C, D and E;
ii. all IFR flights and VFR flights in airspace Class C
iii. All IFR flights and special VFR flights
iv. all special VFR flights;

(4) provide for the issue of ATC clearances, instructions, and information, for the purpose of expediting and maintaining a safe and efficient flow of traffic; and

(5) except as provided in CAR 172.141, provide runway and wake turbulence separation in accordance with criteria and minima prescribed by Subpart E

(6) ensure that emergency vehicles responding to an aircraft emergency are given priority over all other surface movement traffic; and

(7) provide for the control of the movement of persons or vehicles, including towed aircraft, on the manoeuvring area, as necessary to avoid hazard to them or to aircraft landing, taxiing, or taking off; and

(8) co-ordinate as necessary with other ATS units; and

(9) display, at operating positions, continuously updated information on aircraft movements.

(b) The ATS provider's procedures shall ensure that, when radio communication is not available, basic clearances, instructions, and information required by paragraph (a)(2) can be conveyed by the use of the light signals described in CAR 180

(c) The ATS provider's procedures shall ensure that when required by either the weather, or category of approach, or both:
  (1) aircraft on an ILS or MLS approach are informed of ILS/MLS critical area incursions, or the imminent possibility of an incursion; or
  (2) The applicable ILS/MLS critical areas are protected from incursion when an aircraft is on an ILS or MLS approach, or has reached a point on the approach from which protection from incursion is necessary.

(d) The ATS provider's procedures shall ensure that, except as provided in CAR 172.141, and subject to authorization by the applicable approach control unit, aerodrome control units provide separation between:
  (1) IFR flights and Special VFR flights; and
  (2) Special VFR flights when the flight visibility is reported to be less than five (5) km.

(e) The ATS provider's procedures shall ensure that, when authority has been delegated by, and accepted from, the applicable area or approach control unit, aerodrome control units provide separation between controlled flights in accordance with the delegation.

(f) The separation required by paragraphs (d) and (e) shall be obtained by the use of vertical or horizontal or composite separation, in accordance with criteria and minima prescribed by Subpart E.

CAR 172.127 Operation of Air Traffic Control Service

(a) The ATS provider shall establish systems and procedures to ensure that air traffic control units shall:
  (1) be provided with information on the intended movement of each aircraft, or variations therefrom, and with current information on the actual progress of each aircraft;
  (2) determine from the information received, the relative positions of known aircraft to each other;
  (3) issue clearances and information for the purpose of preventing collision between aircraft under its control and of expediting and maintaining an orderly flow of traffic;
  (4) coordinate clearances as necessary with other units:
    i. whenever an aircraft might otherwise conflict with traffic operated under the control of such other units;
    ii. before transferring control of an aircraft to such other units.

(b) The ATS provider shall establish systems and procedures to ensure that information on aircraft movements, together with a record of air traffic control clearances issued to such aircraft, shall be so displayed as to permit ready analysis in order to maintain an efficient flow of air traffic with adequate separation between aircraft.

(c) Air traffic control units should be equipped with devices that record background communication and the aural environment at air traffic controller work stations, capable of retaining the information recorded during at least the last twenty-four hours of operation.

Note. — *Provisions related to the non-disclosure of recordings and transcripts of recordings from air traffic control units are contained in CAR 13.150.*

(d) The ATS provider in respect of an air traffic control service shall establish systems and procedures to ensure that clearances issued by air traffic control units shall provide separation:

(1) between all flights in airspace Classes A and B;
(2) between IFR flights in airspace Classes C, D and E;
(3) between IFR flights and VFR flights in airspace Class C;
(4) between IFR flights and special VFR flights;
(5) between special VFR flights when as prescribed by the Authority.

(e) The ATS provider shall establish systems and procedures to ensure that separation by an air traffic control unit shall be obtained by at least one of the following:
(1) vertical separation, obtained by assigning different levels selected from:
i. the appropriate table of cruising levels in Appendix 3 of CAR 180, except that the correlation of levels to track as prescribed therein shall not apply whenever otherwise indicated in appropriate aeronautical information publications or air traffic control clearances; or
ii. a modified table of cruising levels, when so prescribed in accordance with Appendix 3 of CAR 180 for flight above FL 410, except that the correlation of levels to track as prescribed therein shall not apply whenever otherwise indicated in appropriate aeronautical information publications or air traffic control clearances;
(2) horizontal separation, obtained by providing:
(1) longitudinal separation, by maintaining an interval between aircraft operating along the same, converging or reciprocal tracks, expressed in time or distance; or
(2) lateral separation, by maintaining aircraft on different routes or in different geographical areas;
(3) composite separation, consisting of a combination of vertical separation and one of the other forms of separation contained in b) above, using minima for each which may be lower than, but not less than half of, those used for each of the combined elements when applied individually. Composite separation shall only be applied on the basis of regional air navigation agreements.

Note. — *Guidance material relating to the implementation of composite lateral/vertical separation is contained in the Air Traffic Services Planning Manual (Doc 9426).*

(f) The ATS provider shall establish systems and procedures for all airspace where a reduced vertical separation minimum (RVSM) of 1,000 ft is applied between FL 290 and FL 410 inclusive to ensure:
(1) aircraft are approved for operation in RVSM airspace;
(2) a program is instituted, on a regional basis, for monitoring the height-keeping performance of aircraft operating at these levels, in order to ensure that the implementation and continued application of this vertical separation minimum meets the safety objectives.
(3) The scope of regional monitoring programmes shall be adequate to conduct analyses of aircraft group performance and evaluate the stability of altimetry system error
(4) The coverage of the height-monitoring facilities provided under this program shall be adequate to permit monitoring of the relevant aircraft types of all operators that operate in RVSM airspace;
(5) the information obtained from paragraph (2) is exchanged with the Authority and the ICAO Regional Monitoring Agency (RMA).

Note. — *Guidance material relating to vertical separation and monitoring of height-keeping performance is contained in the Manual on a 300 m (1 000 ft) Vertical Separation Minimum Between FL 290 and FL 410 Inclusive (Doc 9574)*

(g) The ATS provider shall establish and implement procedures for the collection of large height deviations and coordination failures and subsequent regularly reporting to the Authority and Regional Monitoring Agency (RMA).

(h) The ATS provider shall establish procedures that All reported Large Height Deviations (LHDs) shall be thoroughly investigated, and appropriate remedial action shall be identified and implemented in a timely manner. The investigation shall determine the root cause, assess the risk to RVSM airspace integrity, and document findings and corrective actions. All the remedial actions shall be reported to the AUTHORITY

(i) Where RCP/RSP specifications are applied, programmes shall be instituted for monitoring the performance of the infrastructure and the participating aircraft against the appropriate RCP and/or RSP specifications, to ensure that operations in the applicable airspace continue to meet safety objectives. The scope of monitoring programmes shall be adequate to evaluate communication and/or surveillance performance, as applicable.

Note. — *Guidance material relating to RCP and RSP specifications and monitoring of communication and surveillance performance is contained in the Performance-based Communication and Surveillance (PBCS) Manual (Doc 9869).*

(j) Arrangements should be put in place by the ATS provider, through interregional agreement, for the sharing between regions of data and/or information from monitoring programmes

CAR 172.129 Responsibility for Control

The ATS provider shall establish procedures to ensure that:

(1) the responsibility for control of individual flights is determined so that a controlled flight shall be under the control of only one air traffic control unit at any given time;

(2) a single air traffic control unit shall be vested with the responsibility for the control of all aircraft operating within a given block of airspace, except that the control of an aircraft or groups of aircraft may be delegated to other air traffic control units provided that coordination between all air traffic control units concerned is assured.

CAR 172.131 Transfer of Responsibility for Control

The ATS provider shall establish procedures to ensure the transfer of responsibility of an aircraft from one air traffic control unit to another.

(a) The ATS provider's procedures shall consider the place or time of transfer including:

(1) between two units providing area control service;

(2) between a unit providing area control service and a unit providing approach control service;

(3) between a unit providing approach control service and an aerodrome control tower; and

(4) between control sectors/positions within the same air traffic control unit.

(b) The ATS provider's procedures shall consider the coordination of the transfer including:

(1) consent of the accepting control unit;

(2) appropriate parts of the current flight plan and any control information pertinent to the transfer; and

(3) the control information pertinent to the transfer regarding the position and, if required, the track and speed of the aircraft as observed by the surveillance system prior to the transfer.

(c) The ATS provider's procedures as the accepting control unit shall:

(1) indicate its ability to accept control of the aircraft on the terms specified by the transferring control unit, unless by prior agreement between the two units concerned, the absence of any such indication is understood to signify acceptance of the terms specified, or indicate any necessary changes thereto; and

(2) Specify any other information or clearance for a subsequent portion of the flight, which it requires the aircraft to have at the time of the transfer.

(d) The accepting control unit shall notify the transferring control unit when it has established two-way voice communications with, and assumed control of the aircraft concerned, unless specified by agreement between the two control units concerned.

(e) Applicable coordination procedures, including transfer of control points, shall be specified in letters of agreement and ATS operation manual as appropriate.

CAR 172.133 Flight Information Service

(a) The ATS provider shall establish procedures to ensure that a flight information service is provided to the following:

(1) each aircraft being provided with an ATC service that is likely to be affected by the information in paragraph (c);

(2) each aircraft being provided with an aerodrome flight information service that is likely to be affected by the information in paragraph (c);

(3) each aircraft operating IFR that is likely to be affected by the information in paragraph (c);

(4) any aircraft operating VFR for which the pilot has submitted a VFR flight plan to an ATS unit;

(5) any aircraft operating VFR if the pilot makes a specific request to an ATS unit for flight information.

(b) Where air traffic service units provide both flight information service and air traffic control service, the provision of air traffic control service shall have precedence over the provision of flight information service whenever the provision of air traffic control service so requires.

(c) The ATS provider shall ensure that the procedures required by paragraph (a) for the provision of the flight information service includes the provision of available and relevant:

(1) SIGMET and AIRMET information; and

(2) information on weather conditions reported or forecast at departure, destination, and alternate aerodromes; and

(3) information concerning pre-eruption volcanic activity, volcanic eruptions, and volcanic ash clouds; and

(4) information concerning the release into the atmosphere of radioactive materials or toxic chemicals; and

(5) information on changes in the serviceability of navigation aids; and

(6) information on changes in the condition of aerodromes and associated facilities, including information on the state of the aerodrome movement areas when they are affected by snow, ice, or significant depth of water; and

(7) information on unmanned free balloons; and

(8) other information likely to affect safety.

(d) Flight information service provided to flights shall include, in addition to that outlined in paragraph (c), the provision of information concerning:

(1) weather conditions reported or forecast at departure, destination and alternate aerodromes;
(2) collision hazards, to aircraft operating in airspace Classes C, D, E, F and G;
(3) for flight over water areas, in so far as practicable and when requested by a pilot, any available information such as radio call sign, position, true track, speed, etc., of surface vessels in the area.

***Note 1**.— The information in (2), including only known aircraft, the presence of which might constitute a collision hazard to the aircraft informed, will sometimes be incomplete and air traffic services cannot assume responsibility for its issuance at all times or for its accuracy.*

***Note 2.—** When there is a need to supplement collision hazard information provided in compliance with (2), or in case of temporary disruption of flight information service, traffic information broadcasts by aircraft may be applied in designated airspaces. Guidance on traffic information broadcasts by aircraft and related operating procedures is contained in Attachment B. Annex 11*

(e) ATS units should transmit, as soon as practicable, special air-reports to other aircraft concerned, to the associated meteorological office, and to other ATS units concerned. Transmissions to aircraft should be continued for a period to be determined by agreement between the meteorological service provider and appropriate ATS authorities.

(f) Flight information service provided to VFR flights shall include, in addition to that outlined in (a) the provision of available information concerning traffic and weather conditions along the route of flight that are likely to make operation under the visual flight rules impracticable.

CAR 172.135 Air Traffic Control Clearances

The ATS provider in respect of an air traffic control service shall establish procedures to ensure that air traffic control clearances contain the following elements:

(1) aircraft identification as shown in the flight plan;
(2) clearance limit;
(3) route of flight;
(4) level(s) of flight for the entire route or part thereof and changes of levels if required;

***Note. —** If the clearance for the levels covers only part of the route, it is important for the air traffic control unit to specify a point to which the part of the clearance regarding levels applies whenever necessary to ensure compliance with CAR 180.133 (2) (b).*

(5) any necessary instructions or information on other matters such as approach or departure manoeuvres, communications and the time of expiry of the clearance.

***Note. —** The time of expiry of the clearance indicates the time after which the clearance will be automatically cancelled if the flight has not been commenced.*

(6) Standard departure and arrival routes and associated procedures should be established when necessary to facilitate:
a) the safe, orderly and expeditious flow of air traffic;
b) the description of the route and procedure in air traffic control clearances.

***Note. —** Material relating to the establishment of standard departure and arrival routes and associated procedures is contained in the Air Traffic Services Planning Manual (Doc 9426). The design criteria are contained in CAR173/PANS-OPS (Doc 8168), Volume II.*

CAR 172.137 Read-Back of Clearances and Safety-Related Information

(a) The ATS provider shall establish procedures to ensure that air traffic control clearances and instructions always include read-backs when they pertain to:
(1) ATC route clearances;

(2) clearances and instructions to enter, land on, take off from, hold short of, cross and backtrack on any runway; and

(3) Runway-in-use, altimeter settings, SSR codes, level instructions, heading and speed instructions and, whether issued by the controller or contained in ATIS broadcasts, transition levels.

(b) The ATS provider shall establish procedures to ensure other clearances or instructions, including conditional clearances, shall be read back or acknowledged in a manner to clearly indicate that they have been understood and will be complied with.

(c) The ATS provider shall establish procedures to ensure that the controller shall listen to the read-back to ascertain that the clearance or instruction has been correctly acknowledged by the flight crew and shall take immediate action to correct any discrepancies revealed by the read-back.

Note. — *The procedures and provisions relating to the exchange and acknowledgement of CPDLC messages are contained in CAR 171, and the AMC – CAR 172 Chapter 14.*

(d) The ATS provider shall establish procedures to ensure that vehicle drivers operating or intending to operate on the manoeuvring area shall read back to the air traffic controller safety-related parts of instructions which are transmitted by voice, such as instructions to enter, hold short of, cross and operate on any operational runway or taxiway.

(e) The ATS provider shall establish procedures to ensure that the controller shall listen to the read-back to ascertain that the instruction has been correctly acknowledged by the vehicle driver and shall take immediate action to correct any discrepancies revealed by the readback.

CAR 172.139 Coordination of Clearances

The ATS provider shall establish procedures to ensure that an air traffic control clearance is coordinated between air traffic control units to cover the entire route of an aircraft or a specified portion thereof as follows:

(a) An aircraft shall be cleared for the entire route to the aerodrome of first intended landing:

(1) When it has been possible, prior to departure, to coordinate the clearance between all the units under whose control the aircraft will come; or

(2) When there is reasonable assurance that prior coordination will be effected between those units under whose control the aircraft will subsequently come.

Note. — *Where a clearance is issued covering the initial part of the flight solely as a means of expediting departing traffic, the succeeding en-route clearance will be as specified above even though the aerodrome of first intended landing is under the jurisdiction of an area control centre other than the one issuing the en-route clearance*

(b) When coordination as in paragraph (a) has not been achieved or is not anticipated, the aircraft shall be cleared only to that point where coordination is reasonably assured; prior to reaching such point, or at such point, the aircraft shall receive further clearance, with holding instructions being issued as appropriate.

(1) When prescribed by the appropriate ATS provider, aircraft shall contact a downstream air traffic control unit, for the purpose of receiving a downstream clearance prior to the transfer of control point.

(2) Aircraft shall maintain the necessary two-way communication with the current air traffic control unit whilst obtaining a downstream clearance.

(3) A clearance issued as a downstream clearance shall be clearly identifiable as such to the pilot.

(4) Unless coordinated, downstream clearances shall not affect the aircraft's original flight profile in any airspace, other than that of the air traffic control unit responsible for the delivery of the downstream clearance.

(c) When an aircraft intends to depart from an aerodrome within a control area to enter another control area within a period of thirty minutes, or such other specific period of time as has been agreed between the area control centres concerned, coordination with the subsequent area control centre shall be effected prior to issuance of the departure clearance.

(d) When an aircraft intends to leave a control area for flight outside controlled airspace, and will subsequently re-enter the same or another control area, a clearance from point of departure to the aerodrome of first intended landing may be issued.

(e) Such clearance or revisions thereto shall apply only to those portions of the flight conducted within controlled airspace.

CAR 172.141 Deviation from an ATC Clearance

(a) Subject to paragraph (b), The ATS provider shall establish procedures to ensure that instructions issued by ATC to restore a loss of separation do not hinder the responses of a pilot to:
   (1) an ACAS or TCAS resolution advisory; or
   (2) a GPWS or TAWS alert; or
   (3) a weather, or other emergency situation that necessitates a deviation from an ATC clearance.

(b) The procedures required by paragraph (a) must specify that if any separation has been lost it is restored once the emergency situation has been resolved.

CAR 172.143 Flight Plans

(a) The ATS provider shall establish procedures for the acceptance and actioning of flight plans.

(b) The ATS provider's procedures shall ensure that the acceptance procedures required by paragraph (a) include, for the first ATS unit receiving a filed flight plan:
   (1) a check for compliance with any prescribed flight plan format and data convention; and
   (2) a check for completeness, and to the extent practical, for accuracy; and
   (3) Provision for any action necessary to make the plan acceptable to ATS.

(c) Any ATS provider intending to provide air traffic services from more than one location may nominate a single ATS unit within the ATS provider's organization to accept filed flight plans on behalf of any or every unit.

(d) The ATS provider intending to operate a centralized flight planning office shall ensure the office is equipped with:
   (1) AFTN, facsimile, and computer data-link connection facilities, for the acceptance of flight plans from aircraft operators and any other ATS unit; and
   (2) facilities for the advance filing, retention, and activation of standard or repetitive elements of flight plan information; and
   (3) e-mail.

CAR 172.145 Air Traffic Flow Management

(a) The ATS provider shall implement Air traffic flow management (ATFM) for airspace where air traffic demand at times exceeds, or is expected to exceed, the declared capacity of the air traffic control services concerned

(b) The capacity of the air traffic control services concerned shall be declared by the ATS provider to the authority

(c) The ATS provider shall establish and maintain a mechanism to systematically review the implementation of procedures governing the provision of Air Traffic Flow Management (ATFM) services within the Muscat FIR including strategic planning, pre-tactical planning and tactical operations.

(d) The procedures established for ATFM shall take into account, at a minimum:

1. Forecasting of traffic demand on a strategic, pre-tactical, and tactical basis.
2. Determination and declaration of ATC unit and airport capacities.
3. Application of demand–capacity balancing measures, including slot allocation and regulations.
4. Coordination with adjacent ATFM units, ATS units, and regional flow management structures.
5. Integration of meteorological information, contingency measures, and special use airspace constraints.
6. Timely dissemination of information on ATFM measures to operators, flight crews, and other stakeholders.
7. Post-operations analysis, feedback collection, and incorporation of lessons learned into future ATFM planning.

(e) ATFM should be implemented by the ATS provider on the basis of regional air navigation agreements or, if appropriate, through multilateral agreements. Such agreements should make provision for common procedures and common methods of capacity determination.

(f) When it becomes apparent to an ATC unit that traffic additional to that already accepted cannot be accommodated within a given period of time at a particular location or in a particular area, or can only be accommodated at a given rate, that unit shall so advise the ATFM unit, when such is established, as well as, when appropriate, ATS units concerned. Flight crews of aircraft destined to the location or area in question and operators concerned shall also be advised of the delays expected or the restrictions that will be applied.

Note. — *Operators concerned will normally be advised, in advance where possible, of restrictions imposed by the air traffic flow management unit when such is established*

CAR 172.147 Control of Persons and Vehicles at Aerodromes

(a) The ATS provider shall establish procedures to control the movement of persons and/or vehicles including towed aircraft on the manoeuvring area as necessary to avoid hazard to them or to aircraft landing, taxiing or taking off.

(b) In conditions where low visibility procedures are in operation:

(1) persons and vehicles operating on the manoeuvring area of an aerodrome shall be restricted to the essential minimum, and particular regard shall be given to the requirements to protect the ILS/MLS sensitive area(s) when Category II or Category III precision instrument operations are in progress;

(2) subject to the provisions in paragraph (c), the minimum separation between vehicles and taxiing aircraft shall be prescribed by the ATS provider taking into account the aids available;

(3) when mixed ILS and MLS Category II or Category III precision instrument operations are taking place to the same runway continuously, the more restrictive ILS or MLS critical and sensitive areas shall be protected.

Note. — *The period of application of low visibility procedures is determined in accordance with ATS unit instructions. Guidance on low visibility operations on an aerodrome is contained in the Manual of Surface Movement Guidance and Control Systems (SMGCS) (Doc 9476)*

(c) Emergency vehicles proceeding to the assistance of an aircraft in distress shall be afforded priority over all other surface movement traffic.

(d) Subject to the provisions in paragraph (c), vehicles on the manoeuvring area shall be required to comply with the following rules:

(1) vehicles and vehicles towing aircraft shall give way to aircraft which are landing, taking off or taxiing;

(2) vehicles shall give way to other vehicles towing aircraft;

(3) vehicles shall give way to other vehicles in accordance with ATS unit instructions;

(4) notwithstanding the provisions of paragraphs (1), (2) and (3), vehicles and vehicles towing aircraft shall comply with instructions issued by the aerodrome control tower.

CAR 172.149 Runway Safety

The ATS provider shall establish and implement a runway safety program.

(a) The runway safety program shall include the establishment of local runway safety teams at individual aerodromes comprising representatives, where applicable, from:

(1) aerodrome operations;

(2) air traffic services;

(3) airlines or aircraft operators;

(4) pilot and air traffic controller associations; and

(5) any other groups with a direct involvement in runway operations.

(b) The runway safety program shall develop objectives to reduce the type, severity and frequency of runway incursions including:

(1) to improve runway safety data collection, analysis and dissemination;

(2) to check that signage and markings are ICAO-compliant and visible to pilots and drivers;

(3) to develop initiatives for improving the standard of communications;

(4) to identify potential new technologies that may reduce the possibility of a runway incursion;

(5) to ensure that procedures are compliant with ICAO Standards and Recommended Practices (SARPs); and

(6) to initiate local awareness by developing and distributing runway safety education and training material to controllers, pilots and personnel driving vehicles on the aerodrome.

(c) The runway safety teams shall meet on a regular basis, which may be coordinated by a central authority, and develop an action plan for runway safety including:

(1) advising management as appropriate on potential runway incursion issues;

(2) recommending strategies for hazard removal; and

(3) mitigation of residual risk.

CAR 172.151 Contingency Arrangements

(a) The ATS provider shall develop and promulgate contingency plans for implementation in the event of disruption, potential disruption, or temporary withdrawal of air traffic services and related supporting services in the airspace for which they are responsible for the provision of such services. Such contingency plans shall be developed in close coordination with the air traffic services authorities responsible for the provision of services in adjacent portions of airspace and with airspace users concerned.

(b) The ATS provider shall ensure that contingency procedures are developed and implemented for:
   (1) radio communications contingencies;
   (2) emergency separation;
   (3) natural disasters;
   (4) public health emergencies; and
   (5) if applicable, for:
      i. Short-Term Conflict Alert (STCA);
      ii. Minimum Safe Altitude Warning (MSAW); and
      iii. aircraft equipped with ACAS or TCAS.

(c) The ATS provider shall ensure that procedures are established and implemented for air-ground communications failure. The procedures shall specifically address actions to be taken by ATC units when unable to maintain two-way communication with an aircraft.

(d) Contingency arrangements shall consider the planning material in ICAO Annex 11, Attachment C.

CAR 172.153 Service to Aircraft in the Event of an Emergency

(a) The ATS provider shall establish procedures to ensure that an aircraft known or believed to be in a state of emergency, including aircraft bomb threats, emergency descents, radio communication failures, and aircraft being subjected to unlawful interference, shall be given maximum consideration, assistance, and priority over other aircraft as may be necessitated by the circumstances.

Note. — *To indicate that it is in a state of emergency, an aircraft equipped with an appropriate data link capability and/or an SSR transponder might operate the equipment as follows:*

(1) on Mode A, Code 7700; or

(2) on Mode A, Code 7500, to indicate specifically that it is being subjected to unlawful interference; and/or

(3) activate the appropriate emergency and/or urgency capability of ADS-B or ADS-C; and/or

(4) transmit the appropriate emergency message via CPDLC.

(b) The ATS provider procedures shall ensure that when an occurrence of unlawful interference with an aircraft takes place or is suspected, ATS units shall attend promptly to requests by the aircraft. Information pertinent to the safe conduct of the flight shall continue to be transmitted and necessary action shall be taken to expedite the conduct of all phases of the flight, especially the safe landing of the aircraft.

(c) The ATS provider procedures shall ensure that when an occurrence of unlawful interference with an aircraft takes place or is suspected, ATS units shall, in accordance with locally agreed procedures, immediately inform the appropriate authority designated by Oman and exchange necessary information with the operator or its designated representative.

CAR 172.155 In-flight Contingencies. – Strayed or Unidentified Aircraft

Note 1. — *The terms "strayed aircraft" and "unidentified aircraft" in this paragraph have the following meanings:*

(5) Strayed aircraft. *An aircraft which has deviated significantly from its intended track or which reports that it is lost.*

(6) ***Unidentified aircraft.*** *An aircraft which has been observed or reported to be operating in a given area but whose identity has not been established.*

Note 2. — *An aircraft may be considered, at the same time, as a "strayed aircraft" by one unit and as an "unidentified aircraft" by another unit.*

Note 3. — *A strayed or unidentified aircraft may be suspected as being the subject of unlawful interference.*

The ATS provider shall establish procedures to ensure that as soon as an air traffic service unit becomes aware of a strayed aircraft it shall take all necessary steps to assist the aircraft and to safeguard its flight.

Note. — *Navigational assistance by an air traffic services unit is particularly important if the unit becomes aware of an aircraft straying, or about to stray, into an area where there is a risk of interception or other hazard to its* safety.

(a) The ATS provider procedures shall ensure that if the aircraft's position is not known, the air traffic service unit shall:
   (1) attempt to establish two-way communication with the aircraft, unless such communication already exists;
   (2) use all available means to determine its position;
   (3) inform other ATS units into whose area the aircraft may have strayed or may stray, considering all the factors which may have affected the navigation of the aircraft in the circumstances;
   (4) inform, in accordance with locally agreed procedures, appropriate military units and provide them with pertinent flight plan and other data concerning the strayed aircraft;
   (5) request from the units referred to in paragraphs (3) and (4) and from other aircraft in flight every assistance in establishing communication with the aircraft and determining its position.

Note. — *The requirements in (4) and (5) apply also to ATS units informed in accordance with (3).*

(b) The ATS provider procedures shall ensure that when the aircraft's position is established, the air traffic service unit shall:
   (1) advise the aircraft of its position and corrective action to be taken; and
   (2) provide, as necessary, other ATS units and appropriate military units with relevant information concerning the strayed aircraft and any advice given to that aircraft.

(c) The ATS provider shall establish procedures to ensure that as soon as an air traffic service unit becomes aware of an unidentified aircraft in its area, it shall endeavour to establish the identity of the aircraft whenever this is necessary for the provision of air traffic services or required by the appropriate military authorities in accordance with locally agreed procedures. To this end, the air traffic services unit shall take such of the following steps as are appropriate in the circumstances:
   (1) attempt to establish two-way communication with the aircraft;
   (2) inquire of other air traffic services units within the flight information region about the flight and request their assistance in establishing two-way communication with the aircraft;
   (3) inquire of air traffic services units serving the adjacent flight information regions about the flight and request their assistance in establishing two-way communication with the aircraft; and
   (4) attempt to obtain information from other aircraft in the area.

(d) The air traffic services unit shall, as necessary, inform the appropriate military unit as soon as the identity of the aircraft has been established.

(e) Should the ATS unit consider that a strayed or unidentified aircraft may be the subject of unlawful interference, the appropriate authority designated by Oman shall immediately be informed, in accordance with locally agreed procedures.

CAR 172.157 Interception of Civil Aircraft

(a) The ATS provider shall establish procedures to ensure that as soon as an air traffic service unit learns that an aircraft is being intercepted in its area of responsibility, it shall take such of the following steps as are appropriate in the circumstances:
   (1) attempt to establish two-way communication with the intercepted aircraft via any means available, including the emergency radio frequency 121.5 MHz, unless such communication already exists;
   (2) inform the pilot of the intercepted aircraft of the interception;
   (3) establish contact with the intercept control unit maintaining two-way communication with the intercepting aircraft and provide it with available information concerning the aircraft;
   (4) relay messages between the intercepting aircraft or the intercept control unit and the intercepted aircraft, as necessary;
   (5) in close coordination with the intercept control unit take all necessary steps to ensure the safety of the intercepted aircraft; and
   (6) Inform ATS units serving adjacent flight information regions if it appears that the aircraft has strayed from such adjacent flight information regions.

(b) The ATS provider shall establish procedures to ensure that as soon as an air traffic service unit learns that an aircraft is being intercepted outside its area of responsibility, it shall take such of the following steps as are appropriate in the circumstances:
   (1) Inform the ATS unit serving the airspace in which the interception is taking place, providing this unit with available information that will assist in identifying the aircraft and requesting it to take action in accordance with paragraph (a);
   (2) Relay messages between the intercepted aircraft and the appropriate ATS unit, the intercept control unit or the intercepting aircraft.

CAR 172.159 Time in Air Traffic Services

(a) The ATS provider shall establish procedures to ensure that air traffic service units use Coordinated Universal Time (UTC) and shall express the time in hours and minutes and, when required, seconds of the 24-hour day beginning at midnight.

(b) The ATS provider procedures shall ensure that air traffic services units are equipped with clocks indicating the time in hours, minutes and seconds, clearly visible from each operating position in the unit concerned.

(c) The ATS provider procedures shall ensure that air traffic services unit clocks and other time-recording devices are checked as necessary to ensure the correct time to within plus or minus five (5) seconds of UTC. Wherever data link communications are utilized by an air traffic services unit, clocks and other time-recording devices shall be checked as necessary to ensure correct time to within one (1) second of UTC.

(d) The ATS provider procedures shall ensure that the correct time is obtained from a standard time station or, if not possible, from another unit which has obtained the correct time from such station.

(e) The ATS provider procedures shall ensure that aerodrome control towers, prior to an aircraft taxiing for take-off, provide the pilot with the correct time, unless arrangements have been made for the pilot to obtain it from other sources. air traffic service units shall, in addition, provide aircraft with the correct time on request. Time checks shall be given to the nearest half minute.

CAR 172.161 Requirements for Carriage and Operation of Pressure-Altitude Reporting Transponders

The Authority shall establish requirements for carriage and operation of pressure-altitude reporting transponders within defined portions of airspace as published in the Oman AIP.

Note. — *This provision is intended to improve the effectiveness of air traffic services as well as airborne collision avoidance systems*

The ATS provider shall establish procedures to ensure that:

(a) QNH altimeter settings are in hectopascals rounded down to the nearest whole hectopascal; and

(b) The appropriate aerodrome QNH altimeter setting or area QNH zone altimeter setting is provided to all aircraft on initial radio contact, including aircraft that advise having received the current applicable ATIS broadcast, except when it is known the aircraft has already received the information; and

(c) ATS units provide to an aircraft on request, the current applicable aerodrome QNH altimeter setting or area QNH zone altimeter setting.

CAR 172.163 Fatigue Management

Note. — *Guidance on the development and implementation of fatigue management regulations is contained in the Manual* for the Oversight of Fatigue Management Approaches (Doc 9966)

(a) The ATS Provider shall establish procedures for the purpose of managing fatigue in the provision of air traffic control services. These procedures shall be based upon scientific principles, knowledge and operational experience, with the aim of ensuring that air traffic controllers perform at an adequate level of alertness. To that aim, the ATS Provider shall establish:
   (1) Procedures that prescribe scheduling limits in accordance with Appendix 5; and
   (2) where authorizing air traffic services providers to use a fatigue risk management system (FRMS) to manage fatigue, FRMS procedures in accordance with Appendix 6.

(b) The ATS Provider shall require that the air traffic services provider, for the purposes of managing its fatigue-related safety risks, establish one of the following:
   (1) Air traffic controller schedules commensurate with the service(s) provided and in compliance with the prescriptive limitation procedures established in accordance with (1) (a); or
   (2) An FRMS, in compliance with procedures established by the ATS provider in accordance with (1) (b) above, for the provision of all air traffic control services; or
   (3) an FRMS, in compliance with procedures established by the ATS provider in accordance with (1)(b) above, for a defined part of its air traffic control services in conjunction with schedules in compliance with the prescriptive limitation procedures established in accordance with (1)(a) above for the remainder of its air traffic control services.

(c) Where the ATS provider complies with prescriptive limitation procedures in the provision of part or all of its air traffic control services in accordance with (2) (a) above, the ATS Provider shall ensure that:
   (1) The limitations are not exceeded and that non-duty period requirements are met;
   (2) The air traffic services provider familiarizes its personnel with the principles of fatigue management and its policies with regard to fatigue management;
   (3) Process established allows variations from the prescriptive limitation procedures to address any additional risks associated with sudden, unforeseen operational circumstances; and

(4) the AUTHORITY may approve variations to these procedures if the ATS provider established a process in order to address strategic operational needs in exceptional circumstances, based on the air traffic services provider demonstrating that any associated risk is being managed to a level of safety equivalent to, or better than, that achieved through the prescriptive fatigue management procedures.

Note. — *Complying with the prescriptive limitations regulations does not relieve the air traffic services provider of the responsibility to manage its risks, including fatigue-related risks, using its SMS in accordance with the provisions of Annex 19.*

(d) Where an air traffic services provider implements an FRMS to manage fatigue-related safety risks in the provision of part or all of its air traffic control services in accordance with (2) (b) above, the ATS Provider shall:

(1) Have a process to integrate FRMS functions with its other safety management functions; and

(2) the AUTHORITY may approve an FRMS, according to a documented process, that provides an acceptable level of safety.

Note. — *Provisions on the protection of safety information, which support the continued availability of information required by an FRMS, are contained in CAR100.*

CAR 172.165 Safety Management System (SMS)

(a) The ATS provider shall establish, implement and maintain a Safety Management System (SMS) in accordance with this Regulation and CAR 100 in order to achieve an acceptable level of safety in civil aviation. The SMS framework shall be as follows:

1. Safety policy and objectives
   - 1.1 Management commitment and responsibility
   - 1.2 Safety accountabilities
   - 1.3 Appointment of key safety personnel
   - 1.4 Coordination of emergency response planning
   - 1.5 SMS documentation
2. Safety risk management
   - 2.1 Hazard identification
   - 2.2 Safety risk assessment and mitigation
3. Safety assurance
   - 3.1 Safety performance monitoring and measurement
   - 3.2 The management of change
   - 3.3 Continuous improvement of the SMS
4. Safety promotion
   - 4.1 Training and education
   - 4.2 Safety communication

(b) The ATS provider shall ensure that their SMS:

(1) is appropriate for the size and complexity of the An ATS provider's organization;

(2) identifies safety hazards;

(3) ensures the implementation of remedial action necessary to maintain agreed safety performance;

(4) provides for continuous monitoring and regular assessment of safety performance including the performance of safety reviews by appropriately trained and qualified personnel as per CAR172.168;

(5) aims at a continuous improvement of the overall performance of the safety management system; and

(6) is acceptable to the AUTHORITY.

(c) The ATS provider shall ensure that their SMS provides hazard analyses and safety risk assessments for any significant safety-related change to the ATS system including, but not limited to:

(1) new ATS procedures;

(2) implementation of reduced separation minima;

(3) new ATS systems or equipment;

(4) airspace reorganization; and

(5) new facilities or infrastructure.

(d) The ATS provider shall only effect such significant safety-related changes after:

(1) the safety risk assessment has demonstrated that an acceptable level of safety will be met, and

(2) Adequate consultation has been conducted with users and key role-players, and

(3) The safety risk assessment is acceptable to the AUTHORITY.

(e) The ATS provider shall ensure that adequate provision is made for post implementation monitoring to verify that the defined level of safety continues to be met.

Note. — When, due to the nature of the change, the acceptable level of safety cannot be expressed in quantitative terms, the safety risk assessment may rely on operational judgement.

CAR 172.167 Quality Management System (QMS)

(a) An ATS provider should establish and implement a Quality Management System (QMS) in order to ensure compliance with, and the adequacy of, the procedures required by this CAR.

(b) The ATS provider's QMS should establish their quality policy and objectives and ensure that the organization has in place those elements necessary to improve efficiency and reduce service-related risk including procedures for monitoring the performance of all aspects of the organization including such elements as:

(1) design and documentation of procedures (Standard Operation Procedures Manual);

(2) inspection and testing methods;

(3) monitoring of equipment and operations;

(4) internal and external audits;

(5) monitoring of corrective actions taken; and

(6) use of appropriate statistical analysis, when required.

CAR 172.168 Safety Reviews

a) The ATS provider shall conduct regular and systematic safety reviews by personnel qualified through training, experience, and expertise and having a full understanding of relevant Standards and Recommended Practices (SARPs), Procedures for Air Navigation Services (PANS), safe operating practices, and human factors principles.

b) The scope of ATS unit safety reviews should include at least the following issues:

1. Regulatory issues
2. Operational and technical issues
3. Licensing and training issues

CAR 172.169 Operational Flight Information Service (OFIS) Broadcasts

The ATS provider shall ensure that the meteorological information and operational information concerning radio navigation services and aerodromes included in the flight information service shall, whenever available, be provided in an operationally integrated form.

CAR 172.171 Voice-Automatic Terminal Information Service (Voice-ATIS)

The ATS provider shall provide a Voice-automatic terminal information service (Voice-ATIS) at aerodromes where there is a requirement to reduce the communication load on the ATS VHF air-ground communication channels.

(a) When provided, they shall comprise:
  (1) one broadcast serving arriving aircraft; or
  (2) one broadcast serving departing aircraft; or
  (3) one broadcast serving both arriving and departing aircraft; or
  (4) two broadcasts serving arriving and departing aircraft respectively at those aerodromes where the length of a broadcast serving both arriving and departing aircraft would be excessively long.

(b) A discrete VHF frequency shall, whenever practicable, be used for Voice-ATIS broadcasts. If a discrete frequency is not available, the transmission may be made on the voice channel(s) of the most appropriate terminal navigation aid(s), preferably a VOR, provided the range and readability are adequate and the identification of the navigation aid is sequenced with the broadcast so that the latter is not obliterated.

(c) Voice-ATIS broadcasts shall not be transmitted on the voice channel of an ILS.

(d) Whenever Voice-ATIS is provided, the broadcast shall be continuous and repetitive.

(e) The information contained in the current broadcast shall immediately be made known to the ATS unit(s) concerned with the provision to aircraft of information relating to approach, landing and take-off, whenever the message has not been prepared by that (those) unit(s).

(f) Voice-ATIS broadcasts provided at designated aerodromes for use by international air services shall be available in the English language as a minimum.

CAR 172.173 Data-Link Automatic Terminal Information Service (D-ATIS)

(a) Where a D-ATIS supplements the existing availability of Voice-ATIS, the information shall be identical in both content and format to the applicable Voice-ATIS broadcast.

(b) Where real-time meteorological information is included but the data remains within the parameters of the significant change criteria, the content, for the purpose of maintaining the same designator, shall be considered identical.

Note. — *Significant change criteria are specified in 2.3.2 of Appendix 3. To the AMC- CAR 174*

(c) Where a D-ATIS supplements the existing availability of Voice-ATIS and the ATIS requires updating, Voice-ATIS and D-ATIS shall be updated simultaneously.

CAR 172.175 Automatic Terminal Information Service (voice and/or data-link)

(a) Whenever Voice-ATIS and/or D-ATIS is provided:
  (1) the information communicated shall relate to a single aerodrome;
  (2) the information communicated shall be updated immediately if a significant change occurs;
  (3) the preparation and dissemination of the ATIS message shall be the responsibility of the air traffic services;
  (4) individual ATIS messages shall be identified by a designator in the form of a letter of the ICAO spelling alphabet. Designators assigned to consecutive ATIS messages shall be in alphabetical order;
  (5) aircraft shall acknowledge receipt of the information upon establishing communication with the ATS unit providing approach control service or the aerodrome control tower, as appropriate;
  (6) the appropriate ATS unit shall, when replying to the message in paragraph (5) above or, in the case of arriving aircraft, at such other time as may be prescribed by the appropriate ATS provider, provide the aircraft with the current altimeter setting;
  (7) the meteorological information shall be extracted from the local meteorological routine or special report;

Note. — *In accordance with the AMC- CAR 174, Sections 2.2.1 and 2.2.3, the surface wind direction and speed and runway visual range (RVR) are to be averaged over 2 minutes and 1 minute, respectively; and the wind information is to refer to conditions along the runway for departing aircraft and to conditions at the touchdown zone for arriving aircraft. A template for the local meteorological report, including the corresponding ranges and resolutions of each element, is in the AMC- CAR 174, Appendix 2, Table A2-1 Additional criteria for the local meteorological report are contained in the AMC- CAR 174, Chapter4 2, and in Attachment D*

  (8) Voice-ATIS shall comprise:
    i. one broadcast serving arriving aircraft; or
    ii. one broadcast serving departing aircraft; or
    iii. one broadcast serving both arriving and departing aircraft; or
    iv. two broadcasts serving arriving and departing aircraft respectively at those aerodromes where the length of a broadcast serving both arriving and departing aircraft would be excessively long.

(b) A discrete VHF frequency shall, whenever practicable, be used for Voice-ATIS broadcasts. If a discrete frequency is not available, the transmission may be made on the voice channel(s) of the most appropriate terminal navigation aid(s), preferably a VOR, provided the range and readability are adequate and the identification of the navigation aid is sequenced with the broadcast so that the latter is not obliterated.

(c) Voice-ATIS broadcasts shall not be transmitted on the voice channel of an ILS.

(d) Whenever Voice-ATIS is provided, the broadcast shall be continuous and repetitive.

(e) The information contained in the current broadcast shall immediately be made known to the ATS unit(s) concerned with the provision to aircraft of information relating to approach, landing and take-off, whenever the message has not been prepared by that (those) unit(s).

(f) Voice-ATIS broadcasts provided at designated aerodromes for use by international air services shall be available in the English language as a minimum.

(g) When rapidly changing meteorological conditions make it inadvisable to include a weather report in the ATIS, the ATIS messages shall indicate that the relevant weather information will be given on initial contact with the appropriate ATS unit.

(h) Information contained in a current ATIS, the receipt of which has been acknowledged by the aircraft concerned, need not be included in a directed transmission to the aircraft, with the exception of the altimeter setting, which shall be provided in accordance with (a)(6).

(i) If an aircraft acknowledges receipt of an ATIS that is no longer current, any element of information that needs updating shall be transmitted to the aircraft without delay.

(j) ATIS messages for arrivals and departures shall contain the following elements in the order listed:
   (1) name of aerodrome;
   (2) arrival and/or departure indicator;
   (3) contract type, if communication is via D-ATIS;
   (4) designator;
   (5) time of observation, if appropriate;
   (6) type of approach(s) to be expected;
   (7) the runway(s) in use; status of arresting system constituting a potential hazard, if any;
   (8) significant runway surface conditions and, if appropriate, braking action;
   (9) holding delay, if appropriate;
   (10) transition level, if applicable;
   (11) other essential operational information;
   (12) surface wind direction (in degrees magnetic) and speed, including significant variations and, if surface wind sensors related specifically to the sections of runway(s) in use are available and the information is required by operators, the indication of the runway and the section of the runway to which the information refers;
   (13) visibility and, when applicable, RVR and, if visibility/RVR sensors related specifically to the sections of runway(s) in use are available and the information is required by operators, the indication of the runway and the section of the runway to which the information refers;
   (14) present weather;
   (15) cloud below 1,500 m (5,000 ft) or below the highest minimum sector altitude, whichever is greater; cumulonimbus; if the sky is obscured, vertical visibility when available;
   (16) air temperature;
   (17) dew point temperature;
   (18) altimeter setting(s);
   (19) any available information on significant meteorological phenomena in the approach and climb-out areas including wind shear, and information on recent weather of operational significance;
   (20) trend forecast, when available; and
   (21) specific ATIS instructions.

(k) ATIS messages containing arrival information only shall contain the following elements of information in the order listed:
   (1) name of aerodrome;
   (2) arrival indicator;
   (3) contract type, if communication is via D-ATIS;

(4) designator;
(5) time of observation, if appropriate;
(6) type of approach(s) to be expected;
(7) main landing runway(s); status of arresting system constituting a potential hazard, if any;
(8) significant runway surface conditions and, if appropriate, braking action;
(9) holding delay, if appropriate;
(10) transition level, if applicable;
(11) other essential operational information;
(12) surface wind direction (in degrees magnetic) and speed, including significant variations and, if surface wind sensors related specifically to the sections of runway(s) in use are available and the information is required by operators, the indication of the runway and the section of the runway to which the information refers;
(13) visibility and, when applicable, RVR and, if visibility/RVR sensors related specifically to the sections of runway(s) in use are available and the information is required by operators, the indication of the runway and the section of the runway to which the information refers;
(14) present weather;
(15) cloud below 1,500 m (5,000 ft) or below the highest minimum sector altitude, whichever is greater; cumulonimbus; if the sky is obscured, vertical visibility when available;
(16) air temperature;
(17) dew point temperature;
(18) altimeter setting(s);
(19) any available information on significant meteorological phenomena in the approach and climb-out areas including wind shear, and information on recent weather of operational significance;
(20) trend forecast, when available; and
(21) specific ATIS instructions.

(l) ATIS messages containing departure information only shall contain the following elements of information in the order listed:
(1) name of aerodrome;
(2) departure indicator;
(3) contract type, if communication is via D-ATIS;
(4) designator;
(5) time of observation, if appropriate;
(6) type of approach(s) to be expected;
(7) runway(s) to be used for take-off; status of arresting system constituting a potential hazard, if any;
(8) significant runway surface conditions and, if appropriate, braking action;
(9) departure delay, if appropriate;
(10) transition level, if applicable;
(11) other essential operational information;
(12) surface wind direction (in degrees magnetic) and speed, including significant variations and, if surface wind sensors related specifically to the sections of runway(s) in use are available

and the information is required by operators, the indication of the runway and the section of the runway to which the information refers;

(13) visibility and, when applicable, RVR and, if visibility/RVR sensors related specifically to the sections of runway(s) in use are available and the information is required by operators, the indication of the runway and the section of the runway to which the information refers;

(14) present weather;

(15) cloud below 1,500 m (5,000 ft) or below the highest minimum sector altitude, whichever is greater; cumulonimbus; if the sky is obscured, vertical visibility when available;

(16) air temperature;

(17) dew point temperature;

(18) altimeter setting(s);

(19) any available information on significant meteorological phenomena in the approach and climb-out areas including wind shear, and information on recent weather of operational significance;

(20) trend forecast, when available; and

(21) specific ATIS instructions.

CAR 172.177 VOLMET Broadcasts and D-VOLMET Service

The ATS provider shall ensure HF and/or VHF VOLMET broadcasts and/or D-VOLMET service is provided. VOLMET broadcasts shall use standard radiotelephony phraseologies.

CAR 172.179 Alerting Service – Application

The ATS provider shall establish procedures to provide an alerting service.

(a) Alerting service shall be provided:

(1) for all aircraft provided with air traffic control service;

(2) in so far as practicable, to all other aircraft having filed a flight plan or otherwise known to the air traffic services; and

(3) to any aircraft known or believed to be the subject of unlawful interference.

(b) Flight information centres or area control centres shall serve as the central point for collecting all information relevant to a state of emergency of an aircraft operating within the flight information region or control area concerned and for forwarding such information to the appropriate rescue coordination centre.

(c) The appropriate ATS authority shall maintain up-to-date contact details in the OPS Control Directory for flight information centres or area control centres referred to (b).

(d) The contact details to be maintained in the OPS Control Directory should be those of the appropriate ATS duty supervisor position or equivalent.

Note. — *Guidance on the use of the OPS Control Directory is contained in the Manual on Global Aeronautical Distress and Safety System (GADSS) (Doc 10165).*

(e) In the event of a state of emergency arising to an aircraft while it is under the control of an aerodrome control tower or approach control unit, such unit shall notify immediately the flight information centre or area control centre responsible which shall in turn notify the rescue coordination centre, except that notification of the area control centre, flight information centre, or rescue coordination

centre shall not be required when the nature of the emergency is such that the notification would be superfluous.

i. Nevertheless, whenever the urgency of the situation so requires, the aerodrome control tower or approach control unit responsible shall first alert and take other necessary steps to set in motion all appropriate local rescue and emergency organizations which can give the immediate assistance required.

CAR 172.181 Alerting Service – Notification of Rescue Coordination Centres

The ATS provider shall ensure that their procedures to provide an alerting service include the notification of rescue coordination centres as outlined in (a) through (c) below.

(a) Without prejudice to any other circumstances that may render such notification advisable, air traffic service units shall, except as prescribed in CAR 172.183 paragraph (a), notify rescue coordination centres immediately if an aircraft is considered to be in a state of emergency in accordance with the following:

(1) *Uncertainty phase* when:

i. no communication has been received from an aircraft within a period of thirty minutes after the time a communication should have been received, or from the time an unsuccessful attempt to establish communication with such aircraft was first made, whichever is the earlier, or when

ii. an aircraft fails to arrive within thirty minutes of the estimated time of arrival last notified to or estimated by air traffic services units, whichever is the later, except when no doubt exists as to the safety of the aircraft and its occupants.

(2) *Alert phase* when:

i. following the uncertainty phase, subsequent attempts to establish communication with the aircraft or inquiries to other relevant sources have failed to reveal any news of the aircraft, or when

ii. an aircraft has been cleared to land and fails to land within five minutes of the estimated time of landing and communication has not been re-established with the aircraft, or when

iii. information has been received which indicates that the operating efficiency of the aircraft has been impaired, but not to the extent that a forced landing is likely or where the likelihood of a forced landing has not been determined, except when evidence exists that would allay apprehension as to the safety of the aircraft and its occupants, or when

iv. an aircraft is known or believed to be the subject of unlawful interference.

(3) *Distress phase* when:

i. following the alert phase, further unsuccessful attempts to establish communication with the aircraft and more widespread unsuccessful inquiries point to the probability that the aircraft is in distress, or when

ii. the fuel on board is considered to be exhausted, or to be insufficient to enable the aircraft to reach safety, or when

iii. information is received which indicates that the operating efficiency of the aircraft has been impaired to the extent that a forced landing is likely, or when

iv. information is received or it is reasonably certain that the aircraft is about to make or has made a forced landing, except when there is reasonable certainty that the aircraft and its occupants are not threatened by grave and imminent danger and do not require immediate assistance.

(b) The notification shall contain such of the following information as is available in the order listed:

(1) INCERFA, ALERFA or DETRESFA, as appropriate to the phase of the emergency;
(2) agency and person calling;
(3) nature of the emergency;
(4) significant information from the flight plan;
(5) unit which made last contact, time and means used;
(6) last position report and how determined;
(7) colour and distinctive marks of aircraft;
(8) dangerous goods carried as cargo;
(9) any action taken by the reporting office; and
(10) other pertinent remarks.

Note. — *Information on the position of an aircraft in a distress condition may be accessible from the Location of an Aircraft in Distress Repository (LADR). Guidance on use of LADR is contained in the Manual on Global Aeronautical Distress and Safety System (GADSS) (Doc 10165).*

(c) Further to the notification in (a), the rescue coordination centre shall, without delay, be furnished with:

(1) any useful additional information, especially on the development of the state of emergency through subsequent phases; or
(2) information that the emergency situation no longer exists.

CAR 172.183 Alerting Service – Information to the Aircraft Operator

The ATS provider shall ensure that their procedures to provide an alerting service include information to the aircraft operator as outlined in (a) and (b) below.

(a) When an area control or a flight information centre decides that an aircraft is in the uncertainty or the alert phase, it shall, when practicable, advise the operator prior to notifying the rescue coordination centre.

(b) All information notified to the rescue coordination centre by an area control or flight information centre shall, whenever practicable, also be communicated, without delay, to the operator.

CAR 172.185 Alerting Service – Information to Aircraft Operating in the Vicinity of an Aircraft in a State of Emergency

(a) The ATS provider shall ensure that when it has been established by an air traffic service unit that an aircraft is in a state of emergency, other aircraft known to be in the vicinity of the aircraft involved shall, except as provided in paragraph (b), be informed of the nature of the emergency as soon as practicable.

(b) When an air traffic services unit knows or believes that an aircraft is being subjected to unlawful interference, no reference shall be made in ATS air-ground communications to the nature of the

emergency unless it has first been referred to in communications from the aircraft involved and it is certain that such reference will not aggravate the situation.

CAR 172.187 Use of Communication Facilities

The ATS provider shall ensure that air traffic services units shall, as necessary, use all available communication facilities to endeavour to establish and maintain communication with an aircraft in a state of emergency, and to request news of the aircraft.

CAR 172.189 Plotting Aircraft in a State of Emergency

The ATS provider shall ensure that when a state of emergency is considered to exist, the flight of the aircraft involved shall be plotted on a chart in order to determine the probable future position of the aircraft and its maximum range of action from its last known position. The flights of other aircraft known to be operating in the vicinity of the aircraft involved shall also be plotted in order to determine their probable future positions and maximum endurance.

CAR 172.191 Radio and Telephone Procedures – General

(a) The ATS provider shall establish systems and procedures to ensure that:
  (1) the standard telephony and radiotelephony phraseology prescribed in paragraph (b) is used; and
  (2) in all radiotelephony communications discipline is observed, by transmitting only those messages that are necessary for the provision of an air traffic service, or that otherwise contribute to safety; and
  (3) communications procedures are in accordance with the applicable communication procedures prescribed in CAR 171, except that procedures relating to call-signs for domestic use by Omani registered aircraft.

(b) The ATS provider shall establish procedures to ensure that, for the purposes of paragraph (a), the standard phraseology, and the circumstances in which it is used, is that prescribed in Subpart F.

(c) For the purposes of paragraph (b), where differences occur between the stated documents, the particular phraseology shall be selected according to the order of precedence of the documents as listed.

CAR 172.193 Aeronautical Mobile Service (Air-Ground Communications)

The ATS provider shall establish systems and procedures to provide aeronautical mobile service (air-ground communications) as outlined in (a) through (e) below.

(a) General:
  (1) Radiotelephony and/or data link shall be used in air-ground communications for air traffic services purposes.
  (2) Where RCP types have been prescribed by the AUTHORITY for ATM functions, ATS units shall, in addition to the requirements specified in paragraph (1), be provided with communication equipment which will enable them to provide ATS in accordance with the prescribed RCP type(s).

(3) When direct pilot-controller two-way radiotelephony or data link communications are used for the provision of air traffic control service, recording facilities shall be provided on all such air-ground communication channels.

(4) Recordings of communications channels as required in paragraph (3) shall be retained for a period of at least thirty (30) days.

(b) For flight information service:
Air-ground communication facilities shall enable two-way communications to take place between a unit providing flight information service and appropriately equipped aircraft flying anywhere within the flight information region.

(c) For area control service:
Air-ground communication facilities shall enable two-way communications to take place between a unit providing area control service and appropriately equipped aircraft flying anywhere within the control area(s).

(d) For approach control service:

(1) Air-ground communication facilities shall enable direct, rapid, continuous and static-free two-way communications to take place between the unit providing approach control service and appropriately equipped aircraft under its control.

(2) Where the unit providing approach control service functions as a separate unit, air-ground communications shall be conducted over communication channels provided for its exclusive use.

(e) For aerodrome control service:
Air-ground communication facilities shall enable direct, rapid, continuous and static-free two-way communications to take place between an aerodrome control tower and appropriately equipped aircraft operating at any distance within 45 km (25 NM) of the aerodrome concerned.

CAR 172.195 Aeronautical Fixed Service (Ground-Ground Communications)

The ATS provider shall establish systems and procedures to provide aeronautical fixed service (ground-ground communications) as outlined in paragraphs (a) through (e) below.

(a) General:

(1) Direct-speech and/or data link communications shall be used in ground-ground communications for air traffic services purposes.

(2) Where RCP types have been prescribed by the AUTHORITY for ATM functions, ATS units shall, in addition to the requirements specified in (1), be provided with communication equipment which will enable them to provide ATS in accordance with the prescribed RCP type(s).

(b) Communications within a flight information region between air traffic service units:

(1) a flight information centre shall have facilities for communications with the following units providing a service within its area of responsibility:

i. the area control centre, unless collocated;
ii. approach control units;
iii. aerodrome control towers traffic services.

(2) an area control centre, in addition to being connected to the flight information centre as prescribed in paragraph (1), shall have facilities for communications with the following units providing a service within its area of responsibility:

i. approach control units;
ii. aerodrome control towers;
iii. air traffic services reporting offices, when separately established.

(3) an approach control unit, in addition to being connected to the flight information centre and the area control centre as prescribed in (1) and (2), shall have facilities or communications with the associated aerodrome control tower(s), and, when separately established, the associated air traffic services reporting office(s).

(4) an aerodrome control tower, in addition to being connected to the flight information centre, the area control centre and the approach control unit as prescribed in (1), (2) and (3), shall have facilities for communications with the associated air traffic services reporting office, when separately established.

(c) Communications within a flight information region between air traffic service units and other units:

(1) a flight information centre and an area control centre shall have facilities for communications with the following units providing a service within their respective area of responsibility:
i. appropriate military units;
ii. the meteorological office serving the centre;
iii. the aeronautical telecommunications station serving the centre;
iv. appropriate operator's offices;
v. the rescue coordination centre or, in the absence of such centre, any other appropriate emergency service;
vi. the international NOTAM office serving the centre.

(2) an approach control unit and an aerodrome control shall have facilities for communications with the following units providing a service within their respective area of responsibility:
i. appropriate military units;
ii. rescue and emergency services (including ambulance, fire, etc.);
iii. the meteorological office serving the unit concerned;
iv. the aeronautical telecommunications station serving the unit concerned;
v. the unit providing apron management service, when separately established.

(3) the communication facilities required under paragraph (1)(i) and paragraph (2)(i) shall include provisions for rapid and reliable communications between the air traffic services unit concerned and the military unit(s) responsible for control of interception operations within the area of responsibility of the air traffic services unit.

(d) Communications within a flight information region – description of communication facilities:

(1) the communication facilities required under paragraphs (b), (c)(1)(i) and (c)(2)(i), (ii) and (iii) shall include provisions for:
i. communications by direct speech alone, or in combination with data link communications, whereby for the purpose of transfer of control using radar or ADS-B, the communications can be established instantaneously and for other purposes the communications can normally be established within fifteen seconds; and
ii. printed communications, when a written record is required; the message transit time for such communications being no longer than five minutes.

(2) In all cases where automatic transfer of data to and/or from air traffic services computers is required, suitable facilities for automatic recording shall be provided.

(3) The communication facilities required under paragraphs (c)(2)(i), (ii) and (iii) shall include provisions for communications by direct speech arranged for conference communications.

(4) All facilities for direct-speech or data link communications between air traffic services units and between air traffic services units and other units described under paragraphs (c)(1) and (c)(2) shall be provided with automatic recording.

(5) Recordings of data and communications as required in paragraphs (d)(2) and (d)(4) shall be retained for a period of at least thirty (30) days.

(e) Communications between flight information regions:

(1) Flight information centres and area control centres shall have facilities for communications with all adjacent flight information centres and area control centres.

(2) These communication facilities shall in all cases include provisions for messages in a form suitable for retention as a permanent record, and delivery in accordance with transit times specified by regional air navigation agreements.

(3) Unless otherwise prescribed on the basis of regional air navigation agreements, facilities for communications between area control centres serving contiguous control areas shall, in addition, include provisions for direct-speech and, where applicable, data link communications, with automatic recording, whereby for the purpose of transfer of control using radar, ADS-B or ADS-C data, the communications can be established instantaneously and for other purposes the communications can normally be established within fifteen seconds.

(4) When so required by agreement between Oman and the States concerned in order to eliminate or reduce the need for interceptions in the event of deviations from assigned track, facilities for communications between adjacent flight information centres or area control centres other than those mentioned in paragraph (3) shall include provisions for direct speech alone, or in combination with data link communications.

(5) The communication facilities shall be provided with automatic recording.

(6) In all cases where automatic exchange of data between air traffic services computers is required, suitable facilities for automatic recording shall be provided.

(7) Recordings of data and communications as required in paragraph (5) shall be retained for a period of at least thirty (30) days.

CAR 172.197 Communications for Surface Movement Control Service

The ATS provider shall establish systems and procedures to provide communications for the control of vehicles other than aircraft on manoeuvring areas at controlled aerodromes as outlined in paragraphs (a) to (c) below.

(a) Two-way radiotelephony communication facilities shall be provided for aerodrome control, service for the control of vehicles on the manoeuvring area, except where communication by a system of visual signals is deemed to be adequate.

(b) Where conditions warrant, separate communication channels shall be provided for the control of vehicles on the manoeuvring area. Automatic recording facilities shall be provided on all such channels.

(c) Recordings of communications as required in (b) shall be retained for a period of at least thirty (30) days.

CAR 172.199 Automatic recording of surveillance data

The ATS provider shall establish systems and procedures to provide automatic recording of surveillance data as outlined in (a) and (b) below.

(a) Surveillance data from primary and secondary radar equipment or other systems (e.g. ADS-B, or ADS-C), used as an aid to air traffic services, shall be automatically recorded for use in accident and incident investigations, search and rescue, air traffic control and surveillance systems evaluation and training.

(b) Automatic recordings shall be retained for a period of at least thirty (30) days. When the recordings are pertinent to accident and incident investigations, they shall be retained for longer periods until it is evident that they will no longer be required.

CAR 172.201 Surveillance Services

The ATS provider shall establish procedures to ensure that, where radar is used to support the provision of an air traffic service:

(a) all radar services are provided in accordance with procedures prescribed in Subpart G.

(b) SSR code allocation for international flights is in accordance with the code assignment system published in the applicable ICAO Air Navigation Plan; and

(c) an SSR code management plan is in place for domestic flights that:
  (1) conforms to the applicable principles contained in AMC- CAR 172; and
  (2) does not conflict with the SSR code allocation tables, and

(d) full information is made available to pilots and aircraft operators on:
  (1) the nature and extent of the radar services provided; and
  (2) any significant limitations regarding such radar services; and

(e) the information displayed at individual radar operating positions is that required for the air traffic services to be provided.

CAR 172.203 Meteorological Information

The ATS provider shall establish procedures to ensure that air traffic service units are supplied with up-to-date information on existing and forecast meteorological conditions as necessary for the performance of their respective functions. The information shall be supplied in such a form as to require a minimum of interpretation on the part of air traffic services personnel and with a frequency which satisfies the requirements of the air traffic services units concerned as outlined in paragraphs (a) to (c) below:

(a) Flight information centres and area control centres:
  (1) Flight information centres and area control centres shall be supplied with meteorological information as described in AMC - CAR 174, particular emphasis being given to the occurrence or expected occurrence of weather deterioration as soon as this can be determined. These reports and forecasts shall cover the flight information region or control area and such other areas as may be determined on the basis of regional air navigation agreements.

Note. — The list of meteorological information to be supplied to flight information centres and area control centres is contained in the AMC- CAR 174, 9.1.3.

  (2) Flight information centres and area control centres shall be provided, at suitable intervals, with current pressure data for setting altimeters, for locations specified by the flight information centre or area control centre concerned.

(b) Units providing approach control service:

(1) Units providing approach control service shall be supplied with meteorological information as described for the airspace and the aerodromes with which they are concerned. Special reports and amendments to forecasts shall be communicated to the units providing approach control service as soon as they are necessary in accordance with established criteria, without waiting for the next routine report or forecast. Where multiple anemometers are used, the indicators to which they are related shall be clearly marked to identify the runway and section of the runway monitored by each anemometer.

Note 1. — See Note following 172.203 (2)

Note 2.— The list of meteorological information to be supplied to units providing approach control service is contained in the AMC- CAR 174, 9.1.2.

(2) Units providing approach control service shall be provided with current pressure data for setting altimeters, for locations specified by the unit providing approach control service.

(3) Units providing approach control service for final approach, landing and take-off shall be equipped with surface wind display(s). The display(s) shall be related to the same location(s) of observation and be fed from the same sensor(s) as the corresponding display(s) in the aerodrome control tower and in the meteorological station, where such a station exists.

(4) Units providing approach control service for final approach, landing and take-off at aerodromes where runway visual range values are assessed by instrumental means shall be equipped with display(s) permitting read-out of the current runway visual range value(s). The display(s) shall be related to the same location(s) of observation and be fed from the same sensor(s) as the corresponding displays in the aerodrome control tower and in the meteorological station, where such a station exists.

(5) Units providing approach control service for final approach, landing and take-off shall be supplied with information on wind shear, which could adversely affect aircraft on the approach or take-off paths or during circling approach.

Note. — Provisions concerning the issuance of wind shear warnings and alerts and ATS requirements for meteorological information are given in CAR 174, Subpart I and in the AMC- CAR 174, Chapters 6 and 9.

(c) Aerodrome control towers:

(1) Aerodrome control towers, shall be supplied with meteorological information as described for the aerodrome with which they are concerned. Special reports and amendments to forecasts shall be communicated to the aerodrome control towers as soon as they are necessary in accordance with established criteria, without waiting for the next routine report or forecast.

Note 1. — *See Note following 172.203 (2)*

Note 2.— *The list of meteorological information to be supplied to aerodrome control towers is contained in the AMC-CAR 174, 9.1.1.*

(2) Aerodrome control towers shall be provided with current pressure data for setting altimeters for the aerodrome concerned.

(3) Aerodrome control towers or remote aerodrome ATS shall be equipped with surface wind display(s). The display(s) shall be related to the same location(s) of observation and be fed from the same sensor(s) as the corresponding display(s) in the meteorological station, where such a station exists. Where multiple sensor(s) are used, the displays to which they are related shall be clearly marked to identify the runway and section of the runway monitored by each sensor.

(4) Aerodrome control towers at aerodromes where runway visual range values are measured by instrumental means shall be equipped with display(s) permitting read-out of the current

runway visual range value(s). The display(s) shall be related to the same location(s) of observation and be fed from the same sensor(s) as the corresponding display(s) in the meteorological station, where such a station exists.

(5) Aerodrome control towers at aerodromes where the height of cloud base is assessed by instrumental means should be equipped with display(s) permitting read-out of the current value(s) of the height of cloud base. The displays should be related to the same location(s) of observations and be fed from the same sensor(s) as the corresponding display(s) in the meteorological station, where such a station exists.

(6) Aerodrome control towers shall be supplied with information on wind shear, which could adversely affect aircraft on the approach or take-off paths or during circling approach and aircraft on the runway during the landing roll or take-off run.

(7) Aerodrome control towers and/or other appropriate units should be supplied with aerodrome warnings.

Note. — *The meteorological conditions for which aerodrome warnings are issued are listed in CAR 174*

CAR 172.205 Information on Aerodrome Conditions and the Operational Status of Associated Facilities

(a) The ATS provider shall establish procedures to ensure that all relevant ATS units, including those providing approach control service, are kept currently informed of operationally significant conditions on the movement area. This shall include the existence of temporary hazards and the operational status of aerodrome facilities essential to the safe conduct of aircraft operations.

(b) The ATS provider shall ensure that information on aerodrome conditions and the operational status of associated facilities is made available without delay to all ATS units concerned and disseminated through the NOTAM system in accordance with CAR 175.

CAR 172.207 Information on the Operational Status of Navigation Services

(a) The ATS provider shall establish procedures to ensure that all relevant ATS units are kept currently informed of the operational status of radio navigation aids, surveillance systems, and visual aids essential for:

1. radio navigation aids essential for en-route navigation, including GNSS RAIM availability;
2. surveillance systems essential to the provision of ATS, including ADS-B ground stations and secondary surveillance radars (SSR);
3. visual and radio navigation aids essential for take-off and departure
4. visual and radio navigation aids essential for approach and landing procedures; and
5. visual aids essential for aerodrome surface movement.

(b) The ATS provider shall ensure that information on the operational status of navigation aids, surveillance systems, and associated facilities is made available without delay to all ATS units concerned and distributed through the AIS/NOTAM system in accordance with CAR 175.

CAR 172.209 Information on Unmanned Free Balloons

The ATS provider shall establish procedures to ensure that operators of unmanned free balloons shall keep the appropriate air traffic service units informed of details of flights of unmanned free balloons in accordance with the provisions contained in CAR 180.

CAR 172.211 Information Concerning Volcanic Activity

(a) ATS provider shall establish procedures to ensure that ATS units shall be informed, in accordance with local agreement, of pre-eruption volcanic activity, volcanic eruptions and volcanic ash cloud, which could affect airspace used by flights within their area of responsibility.
(b) Area control centres and flight information centres shall be provided with volcanic ash advisory information issued by the associated Volcanic Ash Advisory Centre (VAAC).

CAR 172.213 Information Concerning Radioactive Materials and Toxic Chemical "Clouds"

The ATS provider shall establish procedures to ensure that ATS units shall be informed, in accordance with local agreement, of the release into the atmosphere of radioactive materials or toxic chemicals, which could affect airspace used by flights within their area of responsibility.

CAR 172.215 Incidents

The ATS provider shall establish procedures for:
(a) The notification and reporting, investigation, and follow-up of incidents (including internal investigation);
(b) The forwarding of facility malfunction reports required to the applicable aeronautical telecommunication service certificate holder;
(c) The forwarding of all occurrence and incident data, investigation reports and detected adverse trends in number and types of incidents as requested by the Authority.

CAR 172.217 Action after Serious Incident or Accident

The ATS provider shall establish procedures regarding a serious incident or accident to:
(a) Determine if any air navigation facilities have contributed to the event; and
(b) Ensure immediate action is taken to:
    (1) warn other aircraft that may be using or intending to use the facilities; and
    (2) advise the operator of the facility of the occurrence, and that the facility may be implicated; and
(c) Assist the operator of the facility with the prompt promulgation of any decision to withdraw the equipment from service; and
(d) Ensure that any facility identified in paragraph (a) is not used in the provision of separation to IFR aircraft until cleared for use by the relevant holder of an aeronautical telecommunications service certificate issued under CAR 171.

CAR 172.219 Priorities

(a) The ATS provider shall establish procedures to ensure that, providing safety is not jeopardized, ATC units apply the following priorities:
    (1) an aircraft known or believed to be in a state of emergency or impaired operation has priority over other aircraft;
    (2) an aircraft landing, or in the final stages of an approach to land, has priority over a departing aircraft;

(3) an aircraft landing or taking off has priority over a taxiing aircraft.

(b) The ATS provider's procedures shall ensure that, where practical, following a request from a pilot, an aircraft involved in, or positioning for, the following activities is granted priority:
   (1) ambulance or mercy mission;
   (2) search and rescue;
   (3) civil defence or police emergency;
   (4) carriage of head-of-State, head-of-government, or equivalent dignitary.

(c) The ATS provider's procedures shall ensure that an aircraft at a cruising level generally has priority over other aircraft requesting that level.

(d) The ATS provider for an air traffic service certificate in respect of an area control service may establish procedures regarding priorities to be applied in airspace designated as RNP airspace.

(e) Subject to the requirements of paragraphs (a) and (b), The ATS provider may put in place schemes for the determination of priorities for arriving and departing flights, provided that consultation with interested parties is undertaken prior to implementing the scheme.

(f) The ATS provider shall establish procedures to ensure that, if priorities are established under paragraphs (d) or (e), relevant information including details regarding the handling of complaints, is published in the AIP.

(g) The ATS provider shall establish procedures to ensure that, providing safety is not jeopardized, due regard is given to those priorities determined in conjunction with the aerodrome operator for:
   (1) aircraft arriving and departing the aerodrome; and
   (2) other operations in a control zone associated with the aerodrome.

(h) The ATS provider shall establish procedures to ensure that, except when applying priority in accordance with other provisions of this CAR, priority for arriving and departing flights is allocated on a first-come first-served basis.

(i) The ATS provider shall establish procedures to ensure that the provision of an ATC service takes precedence:
   (1) over the provision of a flight information service whenever the situation so requires; and
   (2) over the performance of any other non-ATC tasks

SUBPART C – OPERATING REQUIREMENTS

CAR 172.301 Continued compliance

Each holder of an air traffic service certificate shall:

(a) Hold at least one complete and current copy of its operation manual at each ATS unit listed in its operation manual, except that manuals relating solely to a particular location need only be held at principal locations and the unit concerned; and
(b) Comply with all procedures and standards detailed in its operation manual; and
(c) Make each applicable part of its operation manual available to personnel who require those parts to carry out their duties; and
(d) Continue to meet the standards and comply with the requirements of Subpart B prescribed for certification under this CAR; and
(e) Promptly notify the AUTHORITY of any change of address for service, telephone number, or facsimile number.

CAR 172.303 Operation manual

(a) An applicant for the grant of an air traffic service certificate/or ATS provider shall establish and maintain an operation manual which describes:

(1) a statement signed by the Accountable Manager on behalf of the applicant's organization confirming that the operation manual and any included procedures:
   i. Define the organization and demonstrate its means and methods for ensuring ongoing compliance with this and any other applicable CAR; and
   ii. Are required to be complied with by its personnel at all times; and
(2) the titles and names of the senior person or persons required by CAR 172.101 paragraphs (a)(1) and (2); and
(3) the duties and responsibilities of the senior person or persons specified in CAR 172.101 paragraph (a)(2), including matters for which they have responsibility to deal directly with the AUTHORITY on behalf of the organization; and
(4) an organization chart showing lines of responsibility of the senior persons specified in paragraph CAR 172.101 (a)(2), and extending to each location listed under CAR 172.303 paragraph (a)(5)(i); and
(5) in the case of an organization providing air traffic services from more than 1 ATS unit, a table listing:
   i. locations of ATS units; and
   ii. the aerodrome or airspace being serviced; and
   iii. the services provided; and
(6) details of the applicant's staffing structure for each ATS unit; and
(7) details of procedures required by CAR 172.101 paragraphs (b)(1) through (9); and
(8) the information required by CAR 172.011 regarding hours of service, the establishment of an air traffic service, and any transitional arrangements; and
(9) details of the systems and procedures required by CAR 172.047 through CAR 172.057 regarding co-ordination requirements; and
(10) details of the procedures required by CAR 172.103 regarding language proficiency; and
(11) details of procedures required by CAR 172.105 regarding the training and assessment of ATS personnel, and regarding the qualifications of ATS training personnel; and

(12)a description of the display systems to be used in meeting the requirements of CAR 172.107(b)(5)(i) and CAR 172.107(c)(2)(i); and
(13)details of the procedures required by CAR 172.109 regarding the notification of facility status; and
(14)procedures regarding shift administration required by CAR 172.111; and
(15)details of the procedures required by CAR 172.113 regarding disruptions to service; and
(16)details of the program required by CAR 172.115 regarding security arrangements; and
(17)details of the procedures required by CAR 172.117 regarding the keeping of logbooks and position logs; and
(18)details of the procedures required by CAR 172.119 regarding the control of documentation; and
(19)details of systems and procedures required by CAR 172.121 regarding the collecting and management of records; and
(20)details of systems and procedures required by CAR 172.123 regarding the provision of area control and approach control services; and
(21)details of systems and procedures required by CAR 172.125 regarding the provision of aerodrome control service; and
(22)details of the procedures required by CAR 172.129 regarding responsibility for control and CAR 172.131 regarding transfer of responsibility; and
(23)details of systems and procedures required by CAR 172.133 regarding the provision of flight information service; and
(24)details of the procedures required by CAR 172.135 and CAR 172.137 regarding ATC clearances; and
(25)details of the procedures required by CAR 172.141 regarding deviations from an ATC clearance; and
(26)details of the procedures required by CAR 172.143 regarding the processing of flight plans; and
(27)details of the procedures required by CAR 172.145 regarding air traffic flow management; and
(28)details of the procedures required by CAR 172.147 regarding control of persons and vehicles at aerodromes; and
(29)details of the runway safety program required by CAR 172.149; and
(30)the contingency arrangements and plans required by CAR 172.151; and
(31)details of the procedures required by CAR 172.153 through CAR 172.157 regarding aircraft emergencies, in-flight contingencies and interceptions; and
(32)details of the procedures required by CAR 172.159 regarding time; and
(33)details of altimeter setting procedures required by CAR 172.161; and

(33) details of altimeter setting procedures required by CAR 172.163 regarding Fatigue Risk Management System (FRMS)

(34)details of the systems, procedures, and programs required by CAR 172.165 regarding the Safety Management System (SMS); and
(35)details of the systems, procedures, and programs required by CAR 172.167 regarding the Quality Management System (QMS); and
(36)details of the systems, procedures, and programs required by CAR 172.168 regarding the Safety Reviews; and
(37)details of systems and procedures required by CAR 172.179 through CAR 172.185 regarding the provision of alerting service; and
(38)details of the radio and telephone procedures required by CAR 172.191; and
(39)details of the procedures required by CAR 172.201 regarding the provision of surveillance services; and

(40) details of the systems and procedures required by CAR 172.203 regarding meteorological information and reporting; and
(41) details of the systems and procedures required by CAR 172.205 through CAR 172.213 regarding information requirements; and
(42) details of the procedures required by CAR 172.215 regarding incidents; and
(43) details required by CAR 172.217 regarding procedures following a serious incident or accident; and
(44) details of the procedures required by CAR 172.219 regarding the application of priorities;
(45) details of the procedures required by CAR 172.501 regarding separation criteria and minima; and
(46) details of the procedures required by CAR 172.503 regarding the allocation of minimum flight altitudes; and
(47) Procedures to control, amend and distribute the operation manual.
(b) The applicant's operation manual shall be acceptable to the AUTHORITY.

CAR 172.305 Trials

(a) An ATS provider shall conduct a trial period prior to implementing any proposal involving significant changes to airspace organization, ATS procedures, or the introduction of new systems, equipment, or facilities.
(b) Such proposals shall include, but are not limited to, the following:
    1) The application of reduced separation minima within an airspace or at an aerodrome;
    2) The implementation of new operational procedures, including but not limited to, departure, arrival, or other ATS procedures applicable to airspace or aerodrome operations; changes to runway or taxiway layouts.
    3) The introduction of new communications, surveillance, or safety-significant systems and equipment, including systems providing new functionalities or capabilities;
    4) The restructuring of ATS route networks;
    5) The sectorization or redesign of an airspace;

(c) The conduct of any such trial shall be subject to prior written approval by the AUTHORITY. The holder of an air traffic service certificate shall submit a formal application, and the AUTHORITY may enforce any conditions on the approval as deemed necessary to ensure the safety and efficiency of air navigation services.

(d) Unless otherwise authorized by the AUTHORITY, an approved trial shall not exceed a period of three (3) months. The AUTHORITY may, upon justified request by the ATS provider, authorize one or more extensions of the trial period.

(e) The AUTHORITY may suspend or terminate any approved trial at any time if continuation is deemed to compromise safety, operational efficiency, or compliance with the provisions of this CAR.

CAR 172.307 Denial of ATC Clearance

(a) The holder of an air traffic service certificate in respect of an aerodrome control service shall not deny the pilot of an aircraft an ATC clearance on the basis of non-payment of charges owed to the certificate holder unless:
  (1) the aircraft is on the ground; and
  (2) that clearance is for entry onto the manoeuvring area.

(b) The certificate holder shall continue to provide normal ATC service for any aircraft entering the manoeuvring area without an ATC clearance.

CAR 172.309 Suspension of VFR Operations

An ATS provider for an approach control service or aerodrome control service may, when appropriate for safety reasons, suspend any or all controlled VFR operations within a control zone.

CAR 172.311 Changes to Certificate Holder's Organization

(a) A holder of an air traffic service certificate must ensure that the holder's operation manual is amended so as to remain a current description of the holder's organization and services.

(b) The holder of an air traffic service certificate must ensure that any amendment made to the holder's operation manual:
  (1) meets the applicable requirements of this CAR; and
  (2) complies with the amendment procedures contained in the holder's operation manual

(c) The holder of an air traffic service certificate must provide the AUTHORITY with a copy of each amendment to the holder's operation manual as soon as practicable after its incorporation into the operation manual, except that, for the holder's operational manual or manuals, the holder must forward to the AUTHORITY:
  (1) a copy of each amendment, at least fifteen (15) working days in advance of the effective date; and
  (2) an amendment of an urgent or immediate nature, without delay, and no later than the date on which it is effective.

(d) If the holder of an air traffic service certificate proposes to make a change to any of the following, prior notification to and acceptance by the AUTHORITY is required:
  (1) the Chief Executive; or
  (2) the listed senior persons; or
  (3) any aspect of air traffic management that may have an adverse impact on air traffic services provided by a State responsible for adjacent airspace.

(e) The AUTHORITY may specify conditions under which the holder of an air traffic service certificate may operate during or following any of the changes specified in paragraph (d).

(f) The holder of an air traffic service certificate must comply with any condition specified under paragraph (e).

(g) If any of the changes referred to in this CAR require an amendment to the certificate, the holder of the air traffic service certificate must forward the certificate to the AUTHORITY as soon as practicable.

(h) The holder of an air traffic service certificate must make amendments to the holder's operation manual as the AUTHORITY considers necessary in the interests of aviation safety.

CAR 172.313 Withdrawal or Transfer of Service

(a) Each holder of an air traffic service certificate who wishes to permanently withdraw an air traffic service shall give the AUTHORITY at least ninety (90) days-notice of the proposal and include in that notice a summary of factors considered in arriving at the decision to withdraw the service.

(b) Each holder of an air traffic service certificate who intends to permanently reduce the hours of operation of an air traffic service shall provide to the AUTHORITY a thirty (30) days' minimum advance notice of, and the reasons for, the proposed reduction.

(c) Each holder of an air traffic service certificate who is the outgoing provider of an air traffic service shall not hinder the preparation and execution of the transitional arrangements required by CAR 172.011 paragraph (b).

SUBPART D – OTHER AIR TRAFFIC SERVICES

CAR 172.401 General

(a) A person may request the AUTHORITY to determine whether an aviation related service is an air traffic service under paragraph (d) of the definition of the term in CAR 172.025 by application in writing, including a definition, and details of, the proposed service.

(b) The AUTHORITY may, in consultation with such persons as the AUTHORITY considers necessary, determine whether any aviation related service is an air traffic service under paragraph (d) of the definition of the term.

CAR 172.403 Requirement

No person shall provide a service that the AUTHORITY determines to be an air traffic service in accordance with CAR 172.401 accept under the authority of, and in accordance with, the provisions of an air traffic service certificate issued under this Subpart.

CAR 172.405 Operating Conditions

An ATS provider issued under this Subpart shall provide the air traffic service in accordance with the conditions attached to the certificate.

SUBPART E – SEPARATION CRITERIA AND MINIMA

CAR 172.501 Separation Criteria and Minima

(a) The ATS provider shall establish systems and procedures for the selection of separation minima for application within a given portion of airspace.

(b) The selected separation minima for application within a given portion of airspace shall be as follows:

(1) The separation minima shall be selected from those prescribed by the provisions of the AMC – CAR 172 and the Regional Supplementary Procedures as applicable under the prevailing circumstances except that, where types of aids are used or circumstances prevail which are not covered by current ICAO provisions, other separation minima shall be established as necessary by:

i. the AUTHORITY, following consultation with the ATS provider and with operators, for routes or portions of routes contained within the sovereign airspace of the Sultanate;

ii. regional air navigation agreements for routes or portions of routes contained within airspace over the high seas or over areas of undetermined sovereignty.

(2) The selection of separation minima shall be made in consultation between the appropriate ATS provider responsible for the provision of air traffic services in neighbouring airspace when:

i. traffic will pass from one into the other of the neighbouring airspaces;

ii. routes are closer to the common boundary of the neighbouring airspaces than the separation minima applicable in the circumstances.

(c) Details of the selected separation minima and of their areas of application shall be notified:

i. to the ATS units concerned; and

ii. to pilots and operators through aeronautical information publications, where separation is based on the use by aircraft of specified navigation aids or specified navigation techniques.

CAR 172.503 Minimum Flight Altitudes

(a) Minimum flight altitudes shall be determined and promulgated by the ATS provider and shall be approved by the AUTHORITY for each ATS route and control area over its territory. The minimum flight altitudes determined shall provide a minimum clearance above the controlling obstacle located within the areas concerned, in accordance with obstacle clearance criteria contained in Procedures for Air Navigation Services – Aircraft Operations CAR173/Doc 8168 Volume II.

(b) The minimum flight altitudes determined pursuant to sub-paragraph (a) shall be published in the AIP.

Note. — *The requirements for publication of minimum flight altitudes and of the criteria used to determine them are contained in AMC 175. Detailed obstacle clearance criteria are contained in CAR173/PANS-OPS (Doc 8168), Volume II.*

(c) The ATS provider shall establish procedures to ensure that cruising levels allocated within the Muscat FIR are selected in accordance with CAR 180 for VFR flights, except that, within controlled airspace:

(1) for both IFR and VFR flights, correlation of cruising level with track need not apply; and

(2) VFR flights may be allocated IFR levels.

SUBPART F – STANDARD PHRASEOLOGY

CAR 172.601 Standard Phraseology

(a) Air traffic services units shall use ICAO standard phraseology in all air-ground and ground-ground communications, in accordance with AMC-CAR172, Ch. 5, Ch. 12 & App. 1, Manual of Radiotelephony (Doc 9432), and CAR171/Annex 10, Vol. II communication procedures.

SUBPART G – SURVEILLANCE PROCEDURES

CAR 172.701 Surveillance Procedures

The ATS provider shall ensure that the provision of ATS surveillance services, including vectoring, sequencing, application of separation, monitoring, and the issue of safety alerts, is conducted in accordance with the following:

(a) Compliance with ICAO Global Procedures

1. ATS surveillance services shall be provided in accordance with the provisions of AMC – CAR172, Chapter 8, including procedures for identification, radar vectoring, application of separation minima, radar monitoring, and safety alerting.
2. All radiotelephony communications used in the provision of ATS surveillance services shall conform to the phraseologies prescribed in AMC – CAR172 Chapter 12 and the ICAO Manual of Radiotelephony (Doc 9432).

(b) Alignment with ICAO Regional Supplementary Procedures (Doc 7030)

1. ATS surveillance services within the Muscat FIR shall apply the regional separation minima specified in Doc 7030 (e.g. 9.3 km / 5 NM, or reduced minima where specifically authorized).
2. Coordination procedures, including transfer of control points, ATS surveillance coverage boundaries, application of reduced longitudinal minima, RVSM requirements, and regional transition levels, shall be applied in accordance with the relevant provisions of Doc 7030..

CAR 172.703 Verification of SSR Transponder Mode C Level Information

(a) Aerodrome control units equipped with ATS surveillance displays shall verify the SSR Mode C altitude information of departing aircraft as soon as a positive rate of climb is indicated from aerodrome elevation. Verification shall be performed prior to the operational use of Mode C data.

(b) Mode C–derived altitude information shall not be applied for separation or any operational purpose if, during the take-off roll, the displayed altitude differs by more than 90 m (300 ft) from the aerodrome elevation.

(c) Any discrepancy exceeding this tolerance shall be reported through the ATS provider's occurrence reporting system, and the aircraft operator shall be advised for corrective action.

CAR 172.705 Provision of Radar and ADS-B

(a) Radar and ADS-B ground systems shall be equipped to generate and display safety-related alerts and warnings to controllers in order to enhance situational awareness and support the prevention of accidents and serious incidents.

(b) As a minimum, such systems shall provide:

1. Conflict alert and conflict prediction – to detect actual or potential infringements of separation minima between aircraft;
2. Minimum Safe Altitude Warning (MSAW) – to warn when an aircraft is in unsafe proximity to terrain or obstacles;
3. Detection of unintentionally duplicated SSR codes – to prevent misidentification and ensure proper track correlation;
4. Status monitoring and system integrity alerts – to advise controllers of any degradation or failure in the surveillance system affecting safety.

(c) Where practicable, additional safety nets such as Short-Term Conflict Alert (STCA), Approach Path Monitor (APM), Runway Incursion Alerting (RIA), or other advanced surveillance safety functions should be implemented as part of the State's continuous safety improvement programme.

CAR 172.707 Use of Surface Movement Radar (SMR)

(a) When visual observation of all or part of the manoeuvring area is not possible, or where supplementary surveillance is required, surface movement radar (SMR) established in accordance with CAR 139 or other suitable aerodrome surveillance equipment shall be used to enhance aerodrome control service.

(b) The SMR or equivalent system shall be employed to:

1. Monitor the movement of aircraft and vehicles on the manoeuvring area, including runway and taxiway operations;
2. Provide directional and positional information to pilots and vehicle drivers, when required for safety;
3. Assist aerodrome control in issuing timely instructions, advice, and alerts to ensure the safe, orderly, and expeditious movement of traffic on the manoeuvring area;
4. Support low-visibility operations (LVO) and contingency situations, ensuring continuity of surveillance when visual reference is degraded.

(c) Where practicable, SMR shall be integrated into an Advanced Surface Movement Guidance and Control System (A-SMGCS) or equivalent, to provide additional safety nets such as:

- Runway Incursion Monitoring and Alerting System (RIMAS);
- Conflicting ATC Clearances (CAC) detection;
- Routing and guidance support during low-visibility operations.

CAR 172.709 Speed Control

(a) Speed control instructions shall not be applied, nor continued, to an arriving aircraft beyond a point 4 NM from the runway threshold on final approach, in order to permit the flight crew to establish a stabilized approach.

(b) Controllers shall ensure that all speed adjustments are cancelled in sufficient time to enable the aircraft to configure for landing in accordance with stabilized approach criteria.

(c) In low-visibility operations, adverse weather conditions, or when handling heavy aircraft or mixed-type traffic, speed control instructions should be terminated earlier, as required to maintain safety and approach stability.

Appendix 1 – Principles governing the identification of navigation specifications and the identification of ATS routes other than standard departure and arrival routes

Note. See Appendix 3 concerning the identification of standard departure and arrival routes and associated procedures. Guidance material on the establishment of these routes and procedures is contained in the Air Traffic Services Planning Manual (Doc 9426).

1. Designators for ATS routes and navigation specifications

1.1. The purpose of a system of route designators and navigation specification(s) applicable to specified ATS route segment(s), route(s) or area is to allow both pilots and ATS, taking into account automation requirements:

a) to make unambiguous reference to any ATS route without the need to resort to the use of geographical coordinates or other means in order to describe it;
b) to relate an ATS route to a specific vertical structure of the airspace, as applicable;
c) to indicate a required level of navigation performance accuracy, when operating along an ATS route or within a specified area; and
d) to indicate that a route is used primarily or exclusively by certain types of aircraft.

Note 1. Specifications concerning the publication of navigation specifications are given in CAR 177 and AMC CAR 175.

Note 2. In relation to this appendix and for flight planning purposes, a prescribed navigation specification is not considered an integral part of the ATS route designator.

1.2. In order to meet this purpose, the designation system shall:

a) permit the identification of any ATS route in a simple and unique manner;
b) avoid redundancy;
c) be usable by both ground and airborne automation systems;
d) permit utmost brevity in operational use; and
e) provide sufficient possibility of extension to cater for any future requirements without the need for fundamental changes.

1.3. Controlled, advisory and uncontrolled ATS routes, with the exception of standard arrival and departure routes, shall therefore be identified as specified hereafter.

2. Composition of designator

2.1. The ATS route designator shall consist of a basic designator supplemented, if necessary, by:

a) one prefix as prescribed in 2.3; and
b) one additional letter as prescribed in 2.4.

2.1.1. The number of characters required to compose the designator shall not exceed six characters.

2.1.2. The number of characters required to compose the designator should, whenever possible, be kept to a maximum of five characters.

2.2. The basic designator shall consist of one letter of the alphabet followed by a number from 1 to 999.

2.2.1. Selection of the letter shall be made from those listed hereunder:

a) A, B, G, R for routes which form part of the regional networks of ATS routes and are not area navigation routes;

b) L, M, N, P for area navigation routes which form part of the regional networks of ATS routes;

c) H, J, V, W for routes which do not form part of the regional networks of ATS routes and are not area navigation routes;

d) Q, T, Y, Z for area navigation routes which do not form part of the regional networks of ATS routes.

2.3. Where applicable, one supplementary letter shall be added as a prefix to the basic designator in accordance with the following:

a) K to indicate a low-level route established for use primarily by helicopters;

b) U to indicate that the route or portion thereof is established in the upper airspace;

c) S to indicate a route established exclusively for use by supersonic aircraft during acceleration, deceleration and while in supersonic flight.

2.4. When prescribed by the AUTHORITY or on the basis of regional air navigation agreements, a supplementary letter may be added after the basic designator of the ATS route in question in order to indicate the type of service provided in accordance with the following:

a) the letter F to indicate that on the route or portion thereof advisory service only is provided;

b) the letter G to indicate that on the route or portion thereof flight information service only is provided.

Note 1. Due to limitations in the display equipment on board aircraft, the supplementary letters "F" or "G" may not be displayed to the pilot.

Note 2. Implementation of a route or a portion thereof as controlled route, advisory route or flight information route is indicated in aeronautical charts and aeronautical information publications in accordance with the provisions in CAR 175 and CAR 177.

3. Assignment of basic designators

3.1. Basic ATS route designators shall be assigned in accordance with the following principles.

3.1.1. The same basic designator shall be assigned to a main trunk route throughout its entire length, irrespective of terminal control areas, States or regions traversed.

Note. This is of particular importance where automated ATS data processing and computerized airborne navigation equipment is used.

3.1.2. Where two or more trunk routes have a common segment, the segment in question shall be assigned each of the designators of the routes concerned, except where this would present difficulties in the provision of air traffic service, in which case, by common agreement, one designator only shall be assigned.

3.1.3. A basic designator assigned to one route shall not be assigned to any other route.

3.1.4. Oman requirements for designators shall be notified to the Regional Offices of ICAO for coordination.

4. Use of designators in communications

4.1. In printed communications, the designator shall be expressed at all times by not less than two and not more than six characters.

4.2. In voice communications, the basic letter of a designator shall be spoken in accordance with the ICAO spelling alphabet.

4.3. Where the prefixes K, U or S specified in 2.3 are used, they shall, in voice communications, be spoken as follows:

K - KOPTER

U - UPPER

S - SUPERSONIC

The word “kopter” shall be pronounced as in the word “helicopter” and the words “upper” and “supersonic” as in the English language.

4.4. Where the letters “F” or “G” specified in 2.4 are used, the flight crew should not be required to use them in voice communications.

Appendix 2 – Principles governing the establishment and identification of significant points

1. Establishment of significant points

1.1. Significant points should, whenever possible, be established with reference to ground-based or space-based radio navigation aids, preferably VHF or higher frequency aids.

1.2. Where such ground-based or space-based radio navigation aids do not exist, significant points shall be established at locations which can be determined by self-contained airborne navigation aids, or, where navigation by visual reference to the ground is to be effected, by visual observation. Specific points may be designated as ‘‘transfer of control’’ points by agreement between adjacent air traffic control units or control positions concerned.

2. Designators for significant points marked by the site of a radio navigation aid

2.1. Plain language name for significant points marked by the site of a radio navigation aid

2.1.1. Whenever practicable, significant points shall be named with reference to an identifiable and preferably prominent geographical location.

2.1.2. In selecting a name for the significant point, care shall be taken to ensure that the following conditions are met:

a) the name shall not create difficulties in pronunciation for pilots or ATS personnel when speaking in the language used in ATS communications. Where the name of a geographical location in the national language selected for designating a significant point gives rise to difficulties in pronunciation, an abbreviated or contracted version of this name, which retains as much of its geographical significance as possible, shall be selected;

   Example: FUERSTENFELDBRUCK = FURSTY

b) the name shall be easily recognizable in voice communications and shall be free of ambiguity with those of other significant points in the same general area. In addition, the name shall not create confusion with respect to other communications exchanged between air traffic services and pilots;

c) the name should, if possible, consist of at least six letters and form two syllables and preferably not more than three;

d) the selected name shall be the same for both the significant point and the radio navigation aid marking it.

2.2. Composition of coded designators for significant points marked by the site of a radio navigation aid

2.2.1. The coded designator shall be the same as the radio identification of the radio navigation aid. It shall be so composed, if possible, as to facilitate association with the name of the point in plain language.

2.2.2. Coded designators shall not be duplicated within 1 100 km (600 NM) of the location of the radio navigation aid concerned, except as noted hereunder.

Note. *When two radio navigation aids operating in different bands of the frequency spectrum are situated at the same location, their radio identifications are normally the same.*

2.3. Oman requirements for coded designators shall be notified to the Regional Offices of ICAO for coordination.

3. Designators for significant points not marked by the site of a radio navigation aid

3.1. Where a significant point is required at a position not marked by the site of a radio navigation aid, and is used for ATC purposes, it shall be designated by a unique five-letter pronounceable "name-code". This name-code designator then serves as the name as well as the coded designator of the significant point.

Note. The principles governing the use of alphanumeric name-codes in support of RNAV SIDs, STARs and instrument approach procedures are detailed in the CAR 173/PANS-OPS (Doc 8168).

3.2. The name-code designator shall be selected so as to avoid any difficulties in pronunciation by pilots or ATS personnel when speaking in the language used in ATS communications.

Examples: ADOLA, KODAP

3.3. The name-code designator shall be easily recognizable in voice communications and shall be free of ambiguity with those used for other significant points in the same general area.

3.4. The unique five-letter pronounceable name-code designator assigned to a significant point shall not be assigned to any other significant point. When there is a need to relocate a significant point, a new name-code designator shall be chosen. In cases when a State wishes to keep the allocation of specific name-codes for reuse at a different location, such name-codes shall not be used until after a period of at least six months.

3.5. Oman requirements for unique five-letter pronounceable name-code designators shall be notified to the Regional Offices of ICAO for coordination.

3.6. In areas where no system of fixed routes is established or where the routes followed by aircraft vary depending on operational considerations, significant points shall be determined and reported in terms of World Geodetic System — 1984 (WGS-84) geographical coordinates, except that permanently

established significant points serving as exit and/or entry points into such areas shall be designated in accordance with the applicable provisions in 2 or 3.

4. Use of designators in communications

4.1. Normally the name selected in accordance with 2 or 3 shall be used to refer to the significant point in voice communications. If the plain language name for a significant point marked by the site of a radio navigation aid selected in accordance with 2.1 is not used, it shall be replaced by the coded designator which, in voice communications, shall be spoken in accordance with the ICAO spelling alphabet.

4.2. In printed and coded communications, only the coded designator or the selected name-code shall be used to refer to a significant point.

5. Significant points used for reporting purposes

5.1. In order to permit ATS to obtain information regarding the progress of aircraft in flight, selected significant points may need to be designated as reporting points.

5.2. In establishing such points, consideration shall be given to the following factors:

a) the type of air traffic services provided;
b) the amount of traffic normally encountered;
c) the accuracy with which aircraft are capable of adhering to the current flight plan;
d) the speed of the aircraft;
e) the separation minima applied;
f) the complexity of the airspace structure;
g) the control method(s) employed;
h) the start or end of significant phases of a flight (climb, descent, change of direction, etc.);
i) transfer of control procedures;
j) safety and search and rescue aspects;
k) the cockpit and air-ground communication workload.

5.3. Reporting points shall be established either as “compulsory” or as “on-request”.

5.4. In establishing “compulsory” reporting points, the following principles shall apply:

a) compulsory reporting points shall be limited to the minimum necessary for the routine provision of information to air traffic services units on the progress of aircraft in flight, bearing in mind the need to keep cockpit and controller workload and air-ground communications load to a minimum;

b) the availability of a radio navigation aid at a location should not necessarily determine its designation as a compulsory reporting point;

c) compulsory reporting points should not necessarily be established at flight information region or control area boundaries.

5.5. "On-request" reporting points may be established in relation to the requirements of air traffic services for additional position reports when traffic conditions so demand.

5.6. The designation of compulsory and on-request reporting points shall be reviewed regularly with a view to keeping the requirements for routine position reporting to the minimum necessary to ensure efficient air traffic services.

5.7. Routine reporting over compulsory reporting points should not systematically be made mandatory for all flights in all circumstances. In applying this principle, particular attention shall be given to the following:

a) high-speed, high-flying aircraft should not be required to make routine position reports over all reporting points established as compulsory for low-speed, low-flying aircraft;

b) aircraft transiting through a terminal control area should not be required to make routine position reports as frequently as arriving and departing aircraft.

5.8. In areas where the above principles regarding the establishment of reporting points would not be practicable, a reporting system with reference to meridians of longitude or parallels of latitude expressed in whole degrees may be established.

Appendix 3 – Principles governing the identification of standard departure and arrival routes and associated procedures

Note. Material relating to the establishment of standard departure and arrival routes and associated procedures is contained in the Air Traffic Services Planning Manual (Doc 9426).

1. Designators for standard departure and arrival routes and associated procedures

Note. In the following text, the term "route" is used in the meaning of "route and associated procedures".

1.1. The system of designators shall:

a) permit the identification of each route in a simple and unambiguous manner;

b) make a clear distinction between:

— departure routes and arrival routes;
— departure or arrival routes and other ATS routes;

— routes requiring navigation by reference to ground-based radio aids or self-contained airborne aids, and routes requiring navigation by visual reference to the ground;

c) be compatible with ATS and aircraft data processing and display requirements;

d) be of utmost brevity in its operational application;

e) avoid redundancy;

f) provide sufficient possibility for extension to cater for any future requirements without the need for fundamental changes.

1.2. Each route shall be identified by a plain language designator and a corresponding coded designator.

1.3. The designators shall, in voice communications, be easily recognizable as relating to a standard departure or arrival route and shall not create any difficulties in pronunciation for pilots and ATS personnel.

2. Composition of designators

2.1. Plain language designator

2.1.1. The plain language designator of a standard departure or arrival route shall consist of:

a) a basic indicator; followed by

b) a validity indicator; followed by

c) a route indicator, where required; followed by

d) the word "departure" or "arrival"; followed by

e) the word "visual", if the route has been established for use by aircraft operating in accordance with the visual flight rules (VFR).

2.1.2. The basic indicator shall be the name or name-code of the significant point where a standard departure route terminates or a standard arrival route begins.

2.1.3. The validity indicator shall be a number from 1 to 9.

2.1.4. The route indicator shall be one letter of the alphabet. The letters "I" and "O" shall not be used.

2.2. Coded designator

The coded designator of a standard departure or arrival route, instrument or visual, shall consist of:

a) the coded designator or name-code of the significant point described in 2.1.1 a); followed by

b) the validity indicator in 2.1.1 b); followed by

c) the route indicator in 2.1.1 c), where required.

Note. Limitations in the display equipment on board aircraft may require shortening of the basic indicator, if that indicator is a five-letter name-code, e.g. KODAP. The manner in which such an indicator is shortened is left to the discretion of operators.

3. Assignment of designators

3.1. Each route shall be assigned a separate designator.

3.2. To distinguish between two or more routes which relate to the same significant point (and therefore are assigned the same basic indicator), a separate route indicator as described in 2.1.4 shall be assigned to each route.

4. Assignment of validity indicators

4.1. A validity indicator shall be assigned to each route to identify the route which is currently in effect.

4.2. The first validity indicator to be assigned shall be the number "1".

4.3. Whenever a route is amended, a new validity indicator, consisting of the next higher number, shall be assigned. The number "9" shall be followed by the number "1".

5. Examples of plain language and coded designators

5.1. Example 1: Standard departure route — instrument:

a) Plain language designator: BRECON ONE DEPARTURE

b) Coded designator: BCN 1

5.1.1. Meaning: The designator identifies a standard instrument departure route which terminates at the significant point BRECON (basic indicator). BRECON is a radio navigation facility with the identification BCN (basic indicator of the coded designator). The validity indicator ONE (1 in the coded designator) signifies either that the original version of the route is still in effect or that a change has been made from the previous version NINE (9) to the now effective version ONE (1) (see 4.3). The absence of a route indicator (see 2.1.4 and 3.2) signifies that only one route, in this case a departure route, has been established with reference to BRECON.

5.2. Example 2: Standard arrival route — instrument:

a) Plain language designator: KODAP TWO ALPHA ARRIVAL

b) Coded designator: KODAP 2 A

5.2.1. Meaning: This designator identifies a standard instrument arrival route which begins at the significant point KODAP (basic indicator). KODAP is a significant point not marked by the site of a radio navigation facility and therefore assigned a five-letter name-code in accordance with Appendix 2. The validity indicator TWO (2) signifies that a change has been made from the previous version ONE (1) to the now effective version TWO (2). The route indicator ALPHA (A) identifies one of several routes established with reference to KODAP and is a specific character assigned to this route.

5.3. Example 3: Standard departure route — visual:

a) Plain language designator: ADOLA FIVE BRAVO DEPARTURE VISUAL

b) Coded designator: ADOLA 5 B

5.3.1. Meaning: This designator identifies a standard departure route for controlled VFR flights which terminates at ADOLA, a significant point not marked by the site of a radio navigation facility. The validity indicator FIVE (5) signifies that a change has been made from the previous version FOUR (4) to the now effective version FIVE (5). The route indicator BRAVO (B) identifies one of several routes established with reference to ADOLA.

6. Composition of designators for MLS/RNAV approach procedures

6.1. Plain language designator

6.1.1. The plain language designator of an MLS/RNAV approach procedure shall consist of:

a) "MLS"; followed by

b) a basic indicator; followed by

c) a validity indicator; followed by

d) a route indicator; followed by

e) the word "approach"; followed by

f) the designator of the runway for which the procedure is designed.

6.1.2. The basic indicator shall be the name or name-code of the significant point where the approach procedure begins.

6.1.3. The validity indicator shall be a number from 1 to 9.

6.1.4. The route indicator shall be one letter of the alphabet. The letters "I" and "O" shall not be used.

6.1.5. The designator of the runway shall be in accordance with CAR 139.

6.2. Coded designator

6.2.1. The coded designator of an MLS/RNAV approach procedure shall consist of:

a) "MLS"; followed by

b) the coded designator or name-code of the significant point described in 6.1.1 b); followed by

c) the validity indicator in 6.1.1 c); followed by

d) the route indicator in 6.1.1 d); followed by

e) the runway designator in 6.1.1 f).

6.3. Assignment of designators

6.3.1. The assignment of designators for MLS/RNAV approach procedures shall be in accordance with paragraph 3. Procedures having identical tracks but different flight profiles shall be assigned separate route indicators.

6.3.2. The route indicator letter for MLS/RNAV approach procedures shall be assigned uniquely to all approaches at an airport until all the letters have been used. Only then shall the route indicator letter be repeated. The use of the same route indicator for two routes using the same MLS ground facility shall not be permitted.

6.3.3. The assignment of validity indicator for approach procedures shall be in accordance with para 4.

6.4. Example of plain language and coded designators

6.4.1. Example:

a) Plain language designator: MLS HAPPY ONE ALPHA APPROACH RUNWAY

ONE EIGHT LEFT

b) Coded designator: MLS HAPPY 1 A 18L

6.4.2. Meaning: The designator identifies an MLS/RNAV approach procedure which begins at the significant point HAPPY (basic indicator). HAPPY is a significant point not marked by the site of a radio navigation facility and therefore assigned a five-letter name-code in accordance with Appendix 2. The validity indicator ONE (1) signifies that either the original version of the route is still in effect or a change has been made from the previous version NINE (9) to the now effective version ONE (1). The route indicator ALPHA (A) identifies one of several routes established with reference to HAPPY and is a specific character assigned to this route.

7. Use of designators in communications

7.1. In voice communications, only the plain language designator shall be used.

Note. For the purpose of identification of routes, the words "departure", "arrival" and "visual" described in 2.1.1 d) and 2.1.1 e) are considered to be an integral element of the plain language designator.

7.2. In printed or coded communications, only the coded designator shall be used.

8. Display of routes and procedures to air traffic control

8.1. A detailed description of each currently effective standard departure and/or arrival route/approach procedure, including the plain language designator and the coded designator, shall be displayed at the working positions at which the routes/procedures are assigned to aircraft as part of an ATC clearance, or are otherwise of relevance in the provision of air traffic control services.

8.2. Whenever possible, a graphic portrayal of the routes/procedures shall also be displayed.

Appendix 4 – ATS AIRSPACE CLASSES — Services provided and flight requirements

Class	Classification of airspaces	Type of Flight	Separation Provided	Service Provided	Speed limitation	Radio Communication requirement	Subject to ATC Clearance
A	IFR flights only are permitted, all flights are provided with air traffic control service and are separated from each other.	IFR only	All aircraft	Air traffic control service	Not applicable	Continuous two-way	Yes
B	IFR and VFR flights are permitted, all flights are provided with air traffic control service and are separated from each other.	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 and VFR flights are permitted, all flights are provided with air traffic control service and IFR flights are separated from other IFR flights and from VFR flights. VFR flights are separated from IFR flights and receive traffic information in respect of other VFR flights.	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 10,000 ft AMSL	Continuous two-way	Yes
D	IFR and VFR flights are permitted and all flights are provided with air traffic control service, IFR flights are separated from other IFR flights and receive traffic information in respect of VFR flights, VFR flights receive traffic information in respect of all other flights.	IFR	IFR from IFR	Air traffic control service, traffic information about VFR flights (and traffic avoidance advice on request)	250 kt IAS below 10,000 ft AMSL	Continuous two-way	Yes
		VFR	Nil	IFR/VFR and VFR/VFR traffic information (and traffic avoidance advice on request)	250 kt IAS below 10,000 ft AMSL	Continuous two-way	Yes
E	IFR and VFR flights are permitted, IFR flights are provided with air traffic control service and are separated from other IFR flights. All flights receive traffic information as far as is practical. Class E shall not be used for control zones.	IFR	IFR from IFR	Air traffic control service and, as far as practical, traffic information about VFR flights	250 kt IAS below 10,000 ft AMSL	Continuous two-way	Yes
		VFR	Nil	Traffic information as far as practical	250 kt IAS below 10,000 ft AMSL	No	No
F	IFR and VFR flights are permitted, all participating IFR flights receive an air traffic advisory service and all flights receive flight information service if requested. *Note. — Where air traffic advisory service is implemented, this is considered normally as a temporary measure only until such time as it can be replaced by air traffic control*	IFR	IFR from IFR as far as practical	Air traffic advisory service; flight information service	250 kt IAS below 10,000 ft AMSL	Continuous two-way	No
		VFR	Nil	Flight information service	250 kt IAS below 10,000 ft AMSL	No	No
G	IFR and VFR flights are permitted and receive flight information service if requested.	IFR	Nil	Flight information service	250 kt IAS below 10,000 ft AMSL	Continuous two-way	No
		VFR	Nil	Flight information service	250 kt IAS below 10,000 ft AMSL	No	No

Appendix 5 – Prescriptive fatigue management regulations

Note. Guidance on the development and implementation of prescriptive fatigue management regulations is contained in the Manual for the Oversight of Fatigue Management Approaches (Doc 9966).

1. The ATS provider shall establish prescriptive limitation rules that take into account acute and cumulative fatigue, circadian factors and the type of work being undertaken. These rules shall identify:
   a) the maximum:
      i. number of hours in any duty period;
      ii. number of consecutive work days;
      iii. number of hours worked in a defined period; and
      iv. time-in-position;
   b) the minimum:
      i. duration of non-duty periods;
      ii. number of non-duty days required in a defined period; and
      iii. duration of breaks between periods of time-in-position in a duty period.
2. The ATS provider shall identify a process for assigning unscheduled duties that allows air traffic controllers to avoid extended periods of being awake.
3. The processes established by service provider in accordance with CAR 172.163 (d) (1) and (2) to allow variations from maximums and minimums described above shall include the provision of:
   a) the reason for the need to deviate;
   b) the extent of the deviation;
   c) the date and time of enactment of the deviation; and
   d) a safety case, outlining mitigations, to support the deviation.
4. The ATS provider shall keep records of planned (scheduled) and actual work periods and evaluate these for compliance with the prescribed duty period limits and non-duty period minima.

Appendix 6 – Fatigue Risk Management System (FRMS) requirements

Note. Guidance on the development and implementation of FRMS regulations is contained in the Manual for the Oversight of Fatigue Management Approaches (Doc 9966).

An FRMS shall contain, at a minimum:

1. FRMS policy and documentation

1.1. FRMS policy

1.1.1. The ATS provider shall define its FRMS policy, with all elements of the FRMS clearly identified.

1.1.2. The policy shall:

a) define the scope of FRMS operations;

b) reflect the shared responsibility of management, air traffic controllers, and other involved personnel;

c) clearly state the safety objectives of the FRMS;

d) be signed by the accountable executive of the organization;

e) be communicated, with visible endorsement, to all the relevant areas and levels of the organization;

f) declare management commitment to effective safety reporting;

g) declare management commitment to the provision of adequate resources for the FRMS;

h) declare management commitment to continuous improvement of the FRMS;

i) require that clear lines of accountability for management, air traffic controllers, and all other involved personnel are identified; and

j) require periodic reviews to ensure it remains relevant and appropriate.

Note. Effective safety reporting is described in the Safety Management Manual (SMM) (Doc 9859).

1.2. FRMS documentation

The ATS provider shall develop and keep current FRMS documentation that describes and records:

a) FRMS policy and objectives;

b) FRMS processes and procedures;

c) accountabilities, responsibilities and authorities for these processes and procedures;

d) mechanisms for ongoing involvement of management, air traffic controllers, and all other involved personnel;

e) FRMS training programmes, training requirements and attendance records;

f) scheduled and actual duty and non-duty periods and break periods between periods of time-in-position in a duty period with significant deviations and reasons for deviations noted; and

Note. Significant deviations are described in the Manual for the Oversight of Fatigue Management Approaches (Doc 9966).

g) FRMS outputs including findings from collected data, recommendations, and actions taken.

2. Fatigue risk management processes

2.1. Identification of fatigue-related hazards

Note. Provisions on the protection of safety information are contained in CAR 100.

The ATS provider shall develop and maintain three fundamental and documented processes for fatigue hazard identification:

2.1.1. *Predictive.* The predictive process shall identify fatigue hazards by examining air traffic controller scheduling and taking into account factors known to affect sleep and fatigue and their effects on performance. Methods of examination may include, but are not limited to:

a) air traffic services or industry operational experience and data collected on similar types of operations or from other industries with shift work or 24-hour operations;

b) evidence-based scheduling practices; and

c) bio-mathematical models.

2.1.2. *Proactive*. The proactive process shall identify fatigue hazards within current air traffic services operations. Methods of examination may include, but are not limited to:

a) self-reporting of fatigue risks;

b) fatigue surveys;

c) relevant air traffic controller performance data;

d) available safety databases and scientific studies;

e) tracking and analysis of differences in planned and actual worked times; and

f) observations during normal operations or special evaluations.

2.1.3. *Reactive*. The reactive process shall identify the contribution of fatigue hazards to reports and events associated with potential negative safety consequences in order to determine how the impact of fatigue could have been minimized. At a minimum, the process may be triggered by any of the following:

a) fatigue reports;

b) confidential reports;

c) audit reports; and

d) incidents.

2.2. Fatigue-related risk assessment

2.2.1. The ATS provider shall develop and implement risk assessment procedures that determine when the associated risks require mitigation.

2.2.2. The risk assessment procedures shall review identified fatigue hazards and link them to:

a) operational processes;

b) their probability;

c) possible consequences; and

d) the effectiveness of existing preventive controls and recovery measures.

2.3. Risk mitigation

The ATS provider shall develop and implement fatigue risk mitigation procedures that:

a) select the appropriate mitigation strategies;

b) implement the mitigation strategies; and

c) monitor the strategies' implementation and effectiveness.

3. FRMS safety assurance processes

The ATS provider shall develop and maintain FRMS safety assurance processes to:

a) provide for continuous FRMS performance monitoring, analysis of trends, and measurement to validate the effectiveness of the fatigue safety risk controls. The sources of data may include, but are not limited to:

   1) hazard reporting and investigations;
   2) audits and surveys; and
   3) reviews and fatigue studies (both internal and external);

b) provide a formal process for the management of change. This shall include, but is not limited to:

   1) identification of changes in the operational environment that may affect the FRMS;
   2) identification of changes within the organization that may affect the FRMS; and
   3) consideration of available tools which could be used to maintain or improve FRMS performance prior to implementing changes; and

c) provide for the continuous improvement of the FRMS. This shall include, but is not limited to:

   1) the elimination and/or modification of preventive controls and recovery measures that have had unintended consequences or that are no longer needed due to changes in the operational or organizational environment;
   2) routine evaluations of facilities, equipment, documentation and procedures; and
   3) the determination of the need to introduce new processes and procedures to mitigate emerging fatigue-related risks.

4. FRMS promotion processes

FRMS promotion processes support the ongoing development of the FRMS, the continuous improvement of its overall performance, and attainment of optimum safety levels. The following shall be established and implemented by the air traffic service provider as part of its FRMS:

a) training programmes to ensure competency commensurate with the roles and responsibilities of management, air traffic controllers, and all other involved personnel under the planned FRMS; and

b) an effective FRMS communication plan that:

    1) explains FRMS policies, procedures and responsibilities to all relevant stakeholders; and
    2) describes communication channels used to gather and disseminate FRMS-related information.

Appendix 7 – State responsibilities concerning an instrument flight procedure design service

1. The ATS provider shall:

   a) provide an instrument flight procedure design service; and/or

   b) agree with one or more Contracting State(s) to provide a joint service; and/or

   c) delegate the provision of the service to external agency(ies).

2. In all cases in paragraph 1 above, the State concerned shall approve and remain responsible for all instrument flight procedures for aerodromes and airspace under the authority of the State.

3. Instrument flight procedures shall be designed in accordance with the criteria defined in CAR 173.

4. An instrument flight procedure design service provider intending to design an instrument flight procedure for aerodromes or airspace under the authority of Oman shall be approved by the AUTHORITY.

Note. Guidance material for regulatory framework for the oversight of instrument flight procedure design service is contained in the Manual on the Development of a Regulatory Framework for Instrument Flight Procedure Design Service (Doc 10068).

5. An instrument flight procedure design service provider shall utilize a quality management system at each stage of the instrument flight procedure design process.

Note. This requirement can be met by means of a quality assurance methodology, such as that described in CAR 173/PANS-OPS (Doc 8168), Volume II. Guidance for implementing such a methodology is contained in the Quality Assurance Manual for Flight Procedure Design (Doc 9906).

6. Published IFP shall be subjected to a continuous maintenance and periodic review to ensure that they continue to comply with changing criteria, and meet user requirements in accordance with the criteria defined in CAR 173.

Note. Guidance on maintenance and periodic review is contained in the Quality Assurance Manual for Flight Procedure Design (Doc 9906).

End