

CAR-174

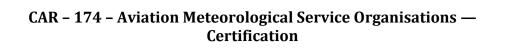
Civil Aviation Regulation

Aviation Meteorological Service Organisations — Certification

Effective: 1st November 2021

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

(President of the CAA)

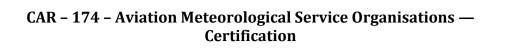


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Corrigendum of Amendments

No.	Ref	Description
01	02	This CAR has been fully amended including additional sections applicable to
		Aviation Meteorological Service Organisations - Certification.
		All users are required to read completely.
02	03	CAR-174.650 and 174.655 inserted – Transition period and Exemptions
03	04	Re-issue of the regulation to allow for the publication of Associated Technical Standards in CAP-174, the incorporation of Amendments 79 and 80 of ICAO Annex 3 — Meteorological Services for International Air Navigation State letters have been included.

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FOREWORD

- (a) Enforcement Procedures ensuring compliance against Civil Aviation Regulation have been issued by the Civil Aviation Authority of Oman (hereinafter referred as CAA or "the Authority") under the provisions of the Civil Aviation Law (or as amended) of the Sultanate of Oman.
- (b) This CAR has been modelled upon similar regulations implemented by other member states and includes the subject matter endorsed within ICAO Annex 3 Meteorological Services for International Air Navigation
- (c) CAR-174 prescribes the requirements for:
 - (1) The establishing, implementation, and maintaining an Aviation Meteorological Service Organisation
 - (2) Punitive actions can and will be enforced by the Authority against recognised actions of non-compliance.
- (d) Amendments to the text in CAR-174 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' is used to indicate a mandatory requirement and may appear in CARs.
 - (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.
- (f) Supporting documentation for this regulation may be found in CAP-174 which has been issued in association with this regulation.
- (g) Regulations with numerals within brackets provides the previous regulation number.
- (h) The new numbering system employed within this regulation corresponds to the applicable numbering used within CAP-174.
- (i) Footnotes throughout this CAP are referring to the ICAO Annex 3 or ICAO published documents.

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

SECTION-0 – GENERAL

CAR 174.0001 Applicability¹

CAR-174 prescribes the requirements applicable to:

- (1) The establishing, implementation, and maintaining an Aviation Meteorological Service Provider;
- (2) The provisions of this regulation with respect to meteorological information are subject to the understanding that the obligation of an Aviation Meteorological Service Provider is for the supply of meteorological information.
- (3) Where the requirement for a user to obtain meteorological information is stipulated in other regulations, the responsibility for the use made of meteorological information is that of the user and is not defined in this regulation.

CAR 174.0005 Establishment of Authority

- (1) 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, the requirements for provision of Aviation Meteorological Services to be provided to meet the requirements of Article 28 of the Convention on International Civil Aviation.
- (2) When it has been determined that meteorological services will be provided, the Authority shall:
 - (a) designate the service provider(s) responsible for providing such services.
 - (b) publish information on the location and type of meteorological services provided

CAR 174.0010 Issue of Civil Aviation Publications (CAP)

- (1) The Authority may issue a Civil Aviation Publication (CAP) for this Regulation.
- (2) A Civil Aviation Publication is a regulatory instrument that prescribes the detailed technical material (Aviation Safety Standard) that is determined to be necessary for air navigation.
- (3) Deviation from the Standards prescribed in the Civil Aviation Publication requires authorisation from the Authority.
- (4) The Authority may authorise deviations from the Standards prescribed in the Civil Aviation Publication, subject to such other conditions it may impose.

AMC CAR 174.0010 Alternative Compliance Requirements

- (1) Where Aviation Meteorological service provider is unable to comply with any provision contained in the Civil Aviation Publication Safety Standards, Aviation Meteorological service providers shall:
 - (a) inform the Authority in writing.
 - (b) explain the basis for its noncompliance and propose alternative steps to ensure that an equivalent level of safety is established or justification as to why a Standard may not be implemented.
- (2) Where the Authority has authorised a deviation, the Aviation Meteorological service provider shall record the deviation in the Aviation Meteorological Service Provider's organisation exposition along with details of and rationale or alternative steps, and any limitations or conditions imposed by the Authority.

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¹ A3-2.1.1 Intro Note 1

CAR 174.0015 Exemptions (655)

- (1) The Authority may grant a temporary exemption from the provisions of CAR-174, as outlined under CAR-10, provided the exemption will not reduce the level of safety below an acceptable level.
- (2) 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 174.0020 Aviation Meteorology Service Provider

- (1) The Aviation Meteorological Service Provider, as designated by CAR-174.0025 may consist of an entity that provides;
 - (a) Administrative functions for the organisation and management of the Meteorological Service Provider, and
 - (b) Service Providers functions that provides, supplies, makes available or issues aviation meteorological information to users, necessary for the performance of their respective functions related to the safety, regularity and efficiency of air navigation.
- (2) For the purpose of this regulation the Term "Aviation Meteorological Service Provider" is used throughout and a Certified Aviation Meteorological Service Provider shall have the ability to provide the administrative and service provision functions to maintain a certificate issued under this Regulation.

GM CAR 175.0020 Aviation Meteorological Service Provider

- (1) Within International Civil Aviation Organisation (ICAO) terminology, the term Meteorological Authority has a specific meaning. ICAO Annex 3, Meteorological Service for International Air Navigation, defines the term as 'providing or arranging for the provision of the Meteorological Service for international air navigation on behalf of a Contracting State.'
- (2) To avoid confusion between the Regulatory Authority and the ICAO term of Meteorological Authority, within Oman the term "Meteorological Authority" is not used. The term "Aviation Meteorological Service Provider" is used to identify the entity that is responsible for the arrangement and provision of meteorological services to meet the obligations of the Sultanate as per Article 28 of the Chicago Convention and such entity is designated in the Oman AIP Gen-3.5.
- (3) The following terms are used throughout this publication with specific meaning:
 - (a) Authority the entity that regulates provision of aeronautical meteorological services to ensure that it meets the needs of users.
 - (b) Service Provider the entity that provides the service(s) specified.

CAR 174.0025 Designation of Meteorological Service Provider²

- (1) The Authority shall designate Aviation Meteorological Service Provider(s) to provide or to arrange for the provision of meteorological service for international air navigation on behalf of the Sultanate of Oman.
- (2) Meteorological service providers who are designated to provide or to arrange for the provision of meteorological service for air navigation shall be included in the Oman Aeronautical Information Publication (AIP), in accordance with CAR-175.
- (3) A Meteorological Service Provider who's base of operation is registered in Oman shall be required to obtain a certificate <u>as per CAR-174.0035</u>

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² A3-2.1.4

CAR 174.0030 Safety Inspections and Audits (645)

- (1) The Authority may:
 - (a) consider the requirements for the Aviation Meteorological Service Provider to be subject to inspections and audits.
 - (b) require the holder of a meteorological service certificate to undergo or carry out such inspections and audits of the holder's meteorological offices, facilities, documents, and records as the Authority considers necessary in the interests of civil aviation safety and security in accordance with the Law.
 - (c) conduct inspections and audits with or without notification to the Aviation Meteorological Service Provider.
 - (d) require from the holder of a meteorological service certificate such information as the Authority considers relevant to the inspection or audit.

CAR 174.0035 Requirement for an Aviation Meteorological Service Provider Certificate (505)

Except when providing meteorological observations as part of an Air Traffic or Aerodrome Flight Information Service, no person shall provide an Aviation Meteorological Service except under the authority of, and in accordance with the provisions of, an Aviation Meteorological Service Provider certificate issued under this Regulation.

GM CAR 174.0035 Requirement for an Aviation Meteorological Service Provider Certificate

- (1) An Aviation Meteorological service may be provided through different meteorological offices and an Aviation Meteorological Service provider may provide one or more different types of services as per their certificate.
- (2) ICAO classifies meteorological offices according to their function:
 - (a) World Area Forecast Centre (WAFC): A Met centre designated by ICAO to prepare and issue global forecasts in digital grid point form for all required levels and in a standard format, to meet the needs of meteorological authorities and other users
 - (b) Meteorological Watch Office (MWO): An office specially designated to maintain a watch over Met conditions affecting flight operations within its area of responsibility and to prepare and disseminate SIGMET information as necessary.
 - (c) Meteorological Office: A Met office designated to provide Met services for international air navigation
 - (d) Aeronautical Meteorological Stations: Met Stations responsible for making routine observations at fixed times, supplemented by special reports whenever specified changes occur

CAR 174.0036 Meteorological Information and Observations provided from an Air Traffic or Aerodrome Flight Information Services

At Aerodromes without a meteorological office, an Air Traffic or Aerodrome Flight Information Service may provide meteorological information and observations without the requirement to obtain a Meteorological Service Provider Certificate, provided the meteorological stations used to supply such information, comply with these regulations.

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CAR 174.0040 Application for Certificate (515)

Each applicant for the grant of an Aviation Meteorology Service Provider certificate shall complete the appropriate form and submit it to the Authority with:

- (1) The exposition required by CAR-174.1030; and
- (2) A payment of the appropriate application fee prescribed by regulations.

CAR 174.0045 Issue of Certificate (520)

An applicant may be entitled to an Aviation Meteorological Service Provider certificate if the Authority is satisfied that:

- (1) The applicant meets the requirements of Certification Requirements; and
- (2) The applicant, and the applicant's senior person or persons required by CAR-174.1015 paragraphs (a)(1) and (2) are acceptable to the authority; and
- (3) The granting of the certificate is not contrary to the interests of aviation safety.

CAR 174.0050 Privileges of Certificate Holder (525)

- (1) An Aviation Meteorological Service Provider certificate specifies the types of facilities that the certificate holder is authorised to operate.
- (2) Subject to CAR-174.1515, the holder of an Aviation Meteorological Service Provider certificate may provide the meteorological services listed on the holder's certificate provided that each meteorological service, and the meteorological information supplied for each meteorological service, and the location and airspace covered by each meteorological service is listed in the certificate holder's exposition.

CAR 174.0055 Duration of Certificate (530)

- (1) An Aviation Meteorological Service Provider certificate may be granted or renewed for a period of up to three (3) years.
- (2) An Aviation Meteorological Service Provider certificate remains in force until it expires or is suspended or revoked.
- (3) The holder of an Aviation Meteorological Service Provider certificate that expires or is revoked shall forthwith surrender the certificate to the Authority.
- (4) The holder of an Aviation Meteorological Service Provider certificate that is suspended, shall forthwith produce the certificate to the Authority for appropriate endorsement.

CAR 174.0060 Renewal of Certificate (535)

An application for renewal of an Aviation Meteorological Service Provider Certificate shall be submitted to the Authority before the application renewal date specified on the certificate or, if no such date is specified, not less than thirty (30) days before the certificate expires.

CAR 174.0065 Transitional Period (650)

- (1) The provision in this CAR shall be fulfilled by 31 December 2022.
- (2) Service providers that fail to meet the certification compliance requirements in accordance with the provisions of CAR-174.0035 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.

SECTION-1 – REQUIREMENTS OF AN AVIATION METEOROLOGICAL SERVICE PROVIDER

Certification Requirements

CAR 174.1000 Objective of Meteorological Service^{3 (050)}

An Aviation Meteorological Service Provider shall establish policies and procedures that ensures that the objective of the aviation meteorological service is to contribute towards the safety, regularity and efficiency of international air navigation.

CAR 174.1005 Provision of Meteorological Service^{4 (050)}

- (1) An Aviation meteorological service provider shall establish systems for providing the necessary meteorological information that meet the functions and performance requirements of:
 - (a) Operators
 - (b) Flight crew members
 - (c) Air traffic service units
 - (d) Search and rescue services units
 - (e) Airport management
 - (f) And others concerned organisations that may require aviation meteorological information for the conduct or development of air navigation

CAR 174.1010 Determination of needs of Aviation Meteorological Services (050)

- (1) The Aviation Meteorological Service Provider shall determine the meteorological service, which it will provide in accordance with the requirements set by the National Airspace Master Plan This determination shall be made in accordance with the provisions of this Regulation, and the requirements stipulated by the Authority in accordance with regional air navigation agreements.
- (2) The Aviation Meteorological Service Provider shall, where applicable, include the determination of the meteorological service to be provided for international air navigation over international waters and other areas, which lie outside the territory of the Sultanate of Oman, when required.
- (3) The Aviation Meteorological Service Provider shall provide landing forecasts as detailed in CAP 174.1010

CAR 174.1015 Personnel Requirements (540)

The aviation meteorological service provider shall engage, employ or contract:

- (1) A senior person identified as the Chief Executive who has the authority within the applicant's organisation to ensure that each meteorological service listed in their exposition can be financed and carried out to meet the operational requirements, and in accordance with the requirements prescribed by this CAR;
- (2) A senior person or group of senior persons who are responsible for ensuring that the applicant's organisation complies with the requirements of this CAR. Such nominated person or persons shall be ultimately responsible to the Chief Executive; and
- (3) A Head of Training responsible for ensuring that the organisation complies with the training requirements of this Part; and

⁴ A3-2.1.2

⁵ A3-2.1.3

³ A3-2.1.1

- (4) A safety management post holder responsible for the provision of a safety management system according to the requirements of CAR-100; and
- (5) A quality management post holder responsible for the provision of a quality management system; and;
- (6) Sufficient personnel to plan, operate, supervise, inspect, and certify the meteorological offices and facilities and provide the meteorological services listed in the applicant's exposition.
- (7) The applicant shall:
 - (a) establish a procedure to assess the competence of those personnel who are authorised by the applicant to:
 - i. place facilities listed in the applicant's exposition into operational service; and
 - ii. supervise the production and release of meteorological information; and
 - (b) establish a procedure to maintain the competence of those authorised personnel; and
 - (c) provide those authorised personnel with written evidence of the scope of their authorisation.
 - (d) Develop and provide job descriptions for its technical staff

CAR 174.1020 Training and Competence Requirements of the World Meteorological Organization (WMO)^{6 (015)}

- (1) The Aviation Meteorological Service Provider shall implement procedures to ensure that it complies with the requirements of the World Meteorological Organization (WMO) in respect of qualifications, competencies, education and training of meteorological personnel providing service for air navigation.
- (2) Aviation Meteorological Service providers shall ensure they have implemented a process of competence assessment and continual professional development to ensure personnel providing meteorological information to civil aviation maintain and improve their knowledge and skills in the appropriate meteorological discipline.

GM CAR 174.1020 Training and Competence Requirements of the World Meteorological Organization (WMO)

The WMO is a specialised agency of the United Nations. The purposes of WMO are to facilitate international cooperation in the setting up of networks of stations for making meteorological, hydrological and other observations; and to promote the rapid exchange of meteorological information, the standardization of meteorological observations and the uniform publication of observations and statistics. It also furthers the application of meteorology to aviation, shipping, water problems, agriculture and other human activities, promotes operational hydrology and encourages research and training in meteorology.

WMO Resolutions and Recommendations relating to aviation once they have been adopted by the WMO (Congress or Executive Committee) and agreed by ICAO, are published in WMO Technical Regulations (WMO Publication No. 49) Volume II (Meteorological Service for International Air Navigation).

Codes and specifications agreed internationally are published in an Annex to the Technical Regulations (WMO-No. 306 Manual on Codes). Education and Training standards are published in Manual on the Implementation of Education and Training Standards in Meteorology and Hydrology (WMO-No. 1083).

World Meteorological Organization qualifications and training requirements for meteorological personnel providing service for international air navigation are given in WMO Publication No. 49, Technical Regulations, Volume I (General Meteorological Standards and Recommended Practices), Chapter B.4 (Education and Training); in particular, personnel providing meteorological services to civil

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⁶ A3 - 2.1.5

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aviation in order to fulfil national and international responsibilities are required to be trained to the standards recognised by WMO for their respective duties.

Requirements concerning the qualifications, competencies, education and training of meteorological personnel in aeronautical meteorology are given in the Technical Regulations (WMO-No. 49), Volume I — General Meteorological Standards and Recommended Practices, Part V — Qualifications and Competencies of Personnel Involved in the Provision of Meteorological (Weather and Climate) and Hydrological Services, Part VI — Education and Training of Meteorological Personnel, and Appendix A — Basic Instruction Packages.⁷

WMO Publication No. 1083 (Manual on the Implementation of Education and Training Standards in Meteorology and Hydrology) provides guidelines on the desirable standards for the education and training of personnel working in aeronautical meteorology.

CAR 174.1025 Training (542)

- (1) An Aviation Meteorological Service Provider shall:
 - (a) establish a procedure to assess the competence of those personnel who are authorized to:
 - i) place facilities listed in the applicant's manual into operational service; and
 - ii) supervise the production and release of meteorological information; and
 - (b) establish a procedure to maintain the competence of those authorised personnel; and
 - (c) provide those authorised personnel with written evidence of the scope of their authorization.
- (2) The Aviation Meteorological Service Provider must implement a training and checking program to ensure individuals performing a function in connection with the provision of meteorological services for air navigation are competent to perform that function.
- (3) The Aviation Meteorological Service Provider programs shall ensure that the following types of training are provided:
 - (a) initial training;
 - (b) refresher (recurrent) training;
 - (c) on-the-job (OJT) training; and
 - (d) specialized training for new facilities, procedures and equipment.
- (4) The Aviation Meteorological Service Provider procedures shall ensure retention of qualification and training records for at least the last three years for all active meteorological personnel qualified and trained.

CAR 174.1030 Organisation Exposition (615)

An Aviation Meteorological Service Provider shall provide the Authority with an exposition as detailed in CAP-174.1030.

CAR 174.1035 Site Requirements (545)

Each Aviation Meteorological Service Provider shall establish procedures to ensure that:

- (1) Each of the meteorological offices and facilities listed in their exposition is
 - (a) sited and configured in accordance with security measures designed to prevent unlawful or accidental interference; and
 - (b) provided with suitable power supplies and means to ensure appropriate continuity of service; and

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⁷ A3 – 2.1.5 Note

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- (2) Each of the remote weather sensing facilities listed in their exposition is installed and maintained in a technically appropriate position to ensure that the facility provides an accurate representation of the local meteorological conditions.
- (3) The wind sensors for local routine reports are appropriately sited to give the best practicable indication of conditions along the runway/touchdown zone.

CAR 174.1040 Communication Requirements (550)

- (1) Each meteorological service provider shall establish communication systems and procedures to ensure that each of the meteorological offices and facilities listed in the applicant's exposition can provide the meteorological information for which it is intended.
- (2) The communication systems and procedures must be able to handle the volume and nature of the meteorological information being communicated so that no meteorological information is delayed to the extent that the information becomes out-of-date.

CAR 174.1045 Input Requirements (555)

- (1) Each Aviation Meteorological Service Provider shall establish procedures to obtain input meteorological information appropriate for the meteorological services being provided.
- (2) The procedures shall ensure that:
 - (a) each meteorological office and facility listed in the applicant's exposition that provides a forecast service has continuing access to appropriate historical, real-time, and other meteorological information for the applicant's forecast areas; and
 - (b) each meteorological office and facility listed in the applicant's exposition that provides a meteorological briefing service in person or by any other interactive visual means, has adequate display and briefing resources available for the briefings; and
 - (c) each meteorological office and facility listed in the applicant's exposition that provides a meteorological reporting service has adequate observing systems to supply adequate, accurate and timely meteorological reports; and
 - (d) each meteorological office listed in the applicant's exposition that provides a meteorological watch service has adequate meteorological information to supply an adequate, accurate and timely meteorological watch service; and
 - (e) each meteorological office and facility listed in the applicant's exposition that provides a climatology service has adequate meteorological information for the preparation of climatological information.

CAR 174.1050 Output Requirements (560)

- (1) Each Aviation Meteorological Service Provider shall:
 - (a) identify the output meteorological information provided by each meteorological service listed in their exposition; and
 - (b) determine the standards and formats for that output meteorological information in accordance with this CAR.
- (2) The provider shall establish procedures to ensure that the meteorological information supplied by each meteorological office and facility listed in their exposition complies with the standards and formats determined under paragraph (1)(b).

CAR 174.1055 Facility Requirements (565)

(1) Each Aviation Meteorological Service Provider shall determine which meteorological office(s) they wish to establish.

These shall be one or more of the following:

- (a) A meteorological office either located at, or associated with an aerodrome to carry out some or all of the following tasks as required to meet the requirements of flight operations at the aerodrome:
 - i. prepare and/or obtain forecasts complying with CAR-174 format and validity requirements for:
 - ii. departing aircraft
 - iii. local meteorological conditions; or
 - iv. maintain a continuous watch of meteorological conditions over the aerodrome/s for which it prepares forecasts; or
 - v. provide briefing, consultation and flight documentation to crew members and other flight operations personnel; or
 - vi. supply other meteorological information, complying with CAR174 format requirements, to aeronautical users including:
 - vii. routine observations and reports;
 - viii. special observations and reports;
 - ix. aerodrome warnings;
 - x. wind shear warnings;
 - xi. other warnings as locally agreed or
 - xii. display available meteorological information;
 - xiii. exchange meteorological information with other meteorological offices; or
 - xiv. supply information on pre-eruption volcanic activity, volcanic eruptions or ash cloud to associated ATS units, AIS units and meteorological watch offices as per letters of agreement;
- (b) A meteorological watch office which shall:
 - i. maintain a watch over meteorological conditions affecting flight operations within the watch office's area of responsibility; and
 - ii. prepare and supply SIGMET and other information related to its area of responsibility to associated air traffic services; and
 - iii. disseminate SIGMET information by AFTN;
 - iv. when required by regional air navigation agreements or letters of agreement
 - A. prepare AIRMET information related to its area of responsibility;
 - B. supply AIRMET information to associated ATS units;
 - C. disseminate AIRMET information;
 - v. supply information on pre-eruption volcanic activity, volcanic eruptions or ash cloud, for which a SIGMET has not been issued, to its associated ATS units, AIS units as per letters of agreement, and to its associated VAAC as determined by regional air navigation agreement;
 - vi. supply information received concerning the accidental release of radioactive materials into the atmosphere in the area for which it has responsibility, or in adjacent areas to its associated ATS units, AIS units as per letters of agreement.
- (c) An aeronautical meteorological station which shall
 - be established at aerodromes and offshore structures as deemed necessary by the organisation responsible for the provision of Meteorological Services to support both international air operations and off shore helicopter operations;

- ii. make routine observations at fixed intervals;
- iii. at aerodromes, make special observations whenever specified changes occur in respect of surface wind, visibility, runway visual range, present weather, clouds and /or air temperature.
- (2) Each Aviation Meteorological Service Provider shall establish procedures to ensure that all electronic data processing facilities used in the acquisition compilation, computing, access or dissemination of meteorological information are of a nature, configuration and capability to ensure the adequacy, accuracy and timeliness of that meteorological and related information.

CAR 174.1060 Documentation (570)

- (1) Each Aviation Meteorological Service Provider shall hold copies of meteorological office manuals, facility manuals, technical standards and practices, procedures manuals, and any other documentation that is necessary for the provision of the meteorological services listed in their exposition.
- (2) The provider shall establish a procedure to control the documentation required by paragraph (1). The procedure shall ensure that:
 - (a) the documentation is reviewed and authorised by appropriate personnel before issue; and
 - (b) current issues of relevant documentation are available to personnel at all locations where they need access to such documentation for the provision of the meteorological services listed in the applicant's exposition; and
 - (c) obsolete documentation is promptly removed from all points of issue or use; and
 - (d) changes to documentation are reviewed and approved by appropriate personnel; and
 - (e) the current version of each item of documentation can be identified to preclude the use of out-of-date editions.

CAR 174.1065 Verification, Periodic Inspection, Testing and Calibration (575)

- (1) Each Aviation Meteorological Service Provider shall establish procedures for:
 - (a) The routine verification of meteorological information obtained and provided by the provider; and
 - (b) The periodic inspection of each meteorological office listed in the provider's exposition; and
 - (c) The periodic inspection, testing and calibration of each facility listed in the provider's exposition.
- (2) The procedures shall ensure that:
 - (a) The systems required for the routine verification of meteorological information have the capability and integrity necessary for verifying the meteorological information; and
 - (b) Appropriate inspection equipment and systems are available to personnel for the inspection of each meteorological office; and
 - (c) Appropriate inspection, measuring and test equipment and systems are available to personnel for the inspection, testing and calibration of each facility; and
 - (d) The inspection, measuring and test equipment and systems have the precision and accuracy necessary for the inspections, measurements and tests being carried out; and
 - (e) All meteorological sensing facilities are calibrated and configured so that the environmental sensors fitted or incorporated yield, as far as possible, reliable, accurate and representative meteorological information.

CAR 174.1070 Release of Meteorological Information (580)

- (1) Each Aviation Meteorological Service Provider shall establish procedures for
 - (a) The release of meteorological information from each meteorological office listed in their exposition; and

- (b) The placing of facilities listed in their exposition into operational service.
- (c) The procedures shall ensure that persons authorised to supervise the production and release of meteorological information and persons authorised to place meteorological facilities into operational service have been assessed as competent under the procedures required by CAR-174.1015 paragraph (2).

CAR 174.1075 Notification of Meteorological Office and Facility Status (585)

- (1) An Aviation Meteorological Service Provider must establish procedures to notify the users of the applicant's meteorological services of relevant operational information and of any change in the operational status of each meteorological office or facility listed in the applicant's exposition.
- (2) The provider must ensure that the procedures established under paragraph (a) require
 - (a) the operational information for each of the applicant's meteorological services that support the Oman air navigation system or an air traffic service to be forwarded to the Aeronautical Information Service for publication in the Aeronautical Information Publication Oman; and
 - (b) the users of a meteorological office or facility to be notified without delay of any change in the operational status of the meteorological office or facility if the change may affect the safety of air navigation. For those meteorological offices and facilities published in the Aeronautical Information Publication Oman, the information concerning any change to their operational status must be forwarded to the Aeronautical Information Service for the issue of a NOTAM.

CAR 174.1080 Meteorological Information Check After Accident or incident (590)

- (1) Each Aviation Meteorological Service Provider shall establish procedures for checking the adequacy, accuracy and timeliness of any of their meteorological information that may have been used by an aircraft or an air traffic service involved in an accident or incident.
- (2) The procedures shall ensure that:
 - (a) the checks are carried out as soon as practicable after notification to the applicant's organisation of such an accident or incident; and
 - (b) copies of the meteorological information are kept in a secure place for possible use by any subsequent investigation.

CAR 174.1085 Malfunctions and Erroneous Information (595)

- (1) An Aviation Meteorological Service Provider shall establish procedures;
 - (a) to identify, record, notify, investigate and rectify any report of erroneous meteorological information; and
 - (b) to identify, record, notify, investigate and rectify any detected malfunction in the facilities and meteorological services listed in their exposition that may result in the supply of erroneous meteorological information; and
 - (c) to notify without delay all users that have received the erroneous meteorological information; and
 - (d) to notify the Authority, within 12 hours, of those malfunctions that cannot be remedied within 72 hours; and
 - (e) for the continuation of malfunction status reports in the event that such reports are required by the Authority.

CAR 174.1090 Records (600)

- (1) An Aviation Meteorological Service Provider shall establish procedures to identify, collect, index, store, maintain and dispose of the records that are necessary for the supply of the meteorological services listed in their exposition.
- (2) The procedures shall ensure that:
 - (a) there is a record of the input meteorological information obtained under the procedures required by CAR-174.1045; and
 - (b) there is a record of all output meteorological information identified under CAR-174.1050; and
 - (c) the records specified in paragraph (2)(a) and (b) are retained for a period of at least sixty (60) days or for such longer period as may be required by the Authority; and
 - (d) there is a record for each meteorological office and facility listed in the applicant's exposition, in order to document the performance of each meteorological office and facility and to provide a traceable history of its maintenance, service and product quality, its periodic inspections, and the persons responsible for each of these activities; and
 - (e) there is a record of the equipment and systems used for verification, inspection, testing and calibration under the procedures required by CAR-174.1065. The record shall provide a traceable history of the location, maintenance, and calibration checks for the equipment and systems; and
 - (f) there is a record of each occurrence of erroneous meteorological information reported and of each malfunction detected under the procedures required by CAR-174.1085. The record shall detail the nature of the erroneous meteorological information or malfunction and the findings of the investigation and the follow-up corrective actions; and
 - (g) there is a record of each internal quality assurance review of the applicant's organisation carried out under the procedures required by CAR-174.1095. The record shall detail the CAR or activity of the organisation that was reviewed, the findings of the review and any necessary follow-up corrective actions; and
 - (h) there is a record for each person who is authorised by the applicant to supervise the production and release of meteorological information and for each person who is authorised by the applicant to place facilities into operational service. The record shall include details of their experience, qualifications, training and current authorisations; and
 - (i) all records are legible, and of a permanent nature; and
 - (j) all records other than those required by paragraph (bs)(a) and (b) are retained for at least one year, or for such longer period as may be required by the Authority, in order to establish a history of the performance of the meteorological services.

CAR 174.1095 Quality Management System (610)

- (1) An Aviation Meteorological Service Provider shall establish internal quality assurance procedures to ensure compliance with, and the adequacy of, the procedures and systems required by this regulation and CAR-100.
- (2) The senior person who has the responsibility for internal quality assurance shall have direct access to the Chief Executive on matters affecting the adequacy, accuracy and timeliness of meteorological information
- (3) The internal quality management system shall include:
 - (a) An inspection policy;
 - (b) Inspection procedures that are understood, implemented, and maintained at all levels of the organisation;
 - (c) A procedure to ensure quality control indicators, including incident reports and personnel and customer feedback, are monitored to implement required performance standards and to identify existing problems or potential causes of problems within the system;

- (d) A procedure for corrective action specifying how to:
 - i. correct an existing problem;
 - ii. follow up a corrective action to ensure the action is effective; and
 - iii. measure the effectiveness of any corrective action taken.
- (e) A procedure for preventive action specifying how to manage a potential problem.

CAR 174.1500 Continued Compliance (625)

- (1) Each holder of an Aviation Meteorological Service Provider certificate shall:
 - (a) hold at least one complete and current copy of their exposition at each meteorological office specified in their exposition; and
 - (b) comply with all procedures and systems detailed in their exposition; and
 - (c) make each applicable CAR of their exposition available to personnel who require those parts to carry out their duties; and
 - (d) continue to meet the standards and comply with the requirements for certification under this CAR and its associated technical specifications; and
 - (e) notify the Authority of any change of address for service, telephone number, or facsimile number within 28 days of the change.

CAR 174.1505 Operations Manual (630)

- (1) Each holder of an Aviation Meteorological Service Provider certificate shall provide an Operations Manual for each meteorological office listed in their exposition. The manual shall set out the procedures for the operation and maintenance of the meteorological office and associated facilities and shall include a list of:
 - (a) the meteorological information and meteorological services provided; and
 - (b) the minimum acceptable operating parameters and standards for facilities; and
 - (c) the minimum meteorological inputs required; and
 - (d) the minimum performance and quality levels for output meteorological information and meteorological services provided; and
 - (e) the test equipment and systems required for the measurement of the minimum levels listed under subparagraph (d); and
 - (f) any mandatory check procedures for releasing meteorological information.

CAR 174.1510 Limitations on Certificate Holder (635)

- (1) The holder of an Aviation Meteorological Service Provider certificate shall not:
 - (a) provide meteorological information where the meteorological input information required to provide that meteorological information is not available; or
 - (b) provide meteorological information where the operational performance of the meteorological office or facility producing that meteorological information does not meet the applicable requirements; or
 - (c) provide meteorological information where any integrity monitoring system associated with that meteorological information is not fully functional; or
 - (d) provide meteorological information where any required verification, inspection, test or calibration relating to that meteorological information has not been completed; or
 - (e) provide meteorological information where there is any cause whatsoever to suspect the integrity of that meteorological information.

CAR 174.1515 Changes to Certificate Holder's Organization (640)

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An Aviation Meteorological Service Provider shall ensure that their exposition is amended so as
to remain a current description of the holder's organisation and meteorological services
provided.

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- (2) The Aviation Meteorological Service Provider shall ensure that any amendments made to the holder's exposition meet the applicable requirements of this CAR and comply with the amendment procedures contained in the holder's exposition.
- (3) The certificate holder shall provide the Authority with a copy of each amendment to their exposition as soon as practicable after its incorporation into the exposition.
- (4) Where a certificate holder proposes to make a change to any of the following, prior notification to and acceptance by the Authority is required:
 - (a) the Chief Executive:
 - (b) the listed senior persons:
 - (c) the meteorological services the holder provides:
 - (d) the locations and airspace covered by each of the meteorological services the holder provides.
- (5) The Authority may prescribe conditions under which a certificate holder may operate during or following any of the changes specified in paragraph (4).
- (6) A certificate holder shall comply with any conditions prescribed under paragraph (5).
- (7) Where any of the changes referred to in this rule require an amendment to the certificate, the certificate holder shall forward the certificate to the Authority as soon as practicable.

CAR 174.1520 Quality Management of Meteorological Information (055)

- (1) An Aviation Meteorological Service Provider shall establish a properly organized quality system comprising procedures, processes and resources necessary to provide for the quality management of the meteorological information to be supplied to the users listed in CAR174.1005.8
- (2) The quality system shall be established and implemented in accordance with the standards prescribed in CAP-174

CAR 174.1525 Agreement Between Aviation Meteorological Service Provider and Air Traffic Service Provider (155)

An Aviation Meteorological Service Provider shall ensure that an agreement is established with the Air Traffic Service Provider(s) for which it supplies meteorological information in accordance with the standards prescribed in CAP-174

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⁸ A3 - 2.2.2

SECTION-2 - METEOROLOGICAL FUNCTIONS

CAR 174.2000 Aerodrome Meteorological Offices (110)

- (1) An Aviation Meteorological Service Provider which provides meteorological services for an aerodrome shall:
 - (a) establish one or more aerodrome and/or other meteorological offices which shall be adequate for the provision of the meteorological service required to satisfy the needs of air navigation.⁹
 - (b) provide for the functions as necessary to meet the needs of flight operations at the aerodrome in accordance with the standards prescribed in CAP-174.

CAR 174.2005 Meteorological Watch Offices (MWO) (115)

An Aviation Meteorological Service Provider that provides meteorological information to air traffic services within a flight information region (FIR) or a control area (CTA) shall establish one or more Meteorological Watch Offices in accordance with the standards prescribed in CAP-174.

CAR 174.2010 Tropical Cyclone Advisory Centres (TCAC) (130)

An Aviation Meteorological Service Provider that provides a tropical cyclone advisory centre (TCAC) shall do so in accordance with the standards prescribed in CAP-174.

CAR 174.2015 World Area Forecast System (100)

Not applicable in Oman

GM CAR 174.2015

Oman has not accepted responsibility to provide a World Area Forecast Centre.

Note: No WAFC are situated in Oman, thus Technical Specifications for global systems are not regulated by the Authorities in Oman¹⁰

CAR 174.2020 Volcanic Ash Advisory Centres (VAAC) (120)

Oman has not accepted responsibility to provide a Volcanic Ash Advisory Centre.

Note: No VAAC are situated in Oman, thus Technical Specifications for Volcanic Advisory Information are not regulated by the Authorities in Oman

CAR 174.2025 Space Weather Centres (SWXC) (135)

Oman has not accepted responsibility to provide a Space Weather Centre

(NOT APPLICABLE WITHIN OMAN)11

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⁹ A3 - 3.3.1

¹⁰ A3 Appendix 2 subpart 1

¹¹ Following N?A provisions of A 3 3.8.1;3.8.2; 3.8.3

SECTION-3 – PROVISION OF METEOROLOGICAL INFORMATION

Note: Technical specifications and detailed criteria related to this Section are given in CAP 174, Appendix 3.

CAR174.3000 Terminology for Aviation Meteorological Information^{12 (010)}

The obligations of an Aviation Meteorological Service Provider to issue information to users shall be limited in context to the wording of this regulation where to:

- (1) "provide" is used solely in connection with the provision of service;
- (2) "issue" is used solely in connection with cases where the obligation specifically extends to sending out the information to a user;
- (3) "make available" is used solely in connection with cases where the obligation ends with making the information accessible to a user; and
- (4) "supply" is used solely in connection with cases where either "issue or "make available" applies.

CAR 174.3005 Supply, Use and Interpretation of Meteorological Information ⁰⁵⁵⁾

- (1) An Aviation Meteorological Service Provider shall establish procedures that ensure close liaison is maintained between an Aviation Meteorological Service Provider and the users of meteorological information in accordance with the standards prescribed in CAP-174.
- (2) Where an Aviation Meteorological Service Provider does not provide meteorological information at an aerodrome, the Air Navigation Service Provider may provide information for aviation based on aeronautical meteorological stations and observations used by the control tower, provided these stations and observations meet the requirements of this regulation.

CAR 174.3010 Aeronautical Meteorological Stations and Observations (150)

- (1) The Aviation Meteorological Service Provider shall establish, at aerodromes where it supplies meteorological information, such aeronautical meteorological stations as it determines to be necessary to comply with the requirements of these regulations.
- (2) The aeronautical meteorological stations shall be established and equipped in accordance with the standards prescribed in CAP-174.
- (3) An Aviation Meteorological Service Provider shall ensure that aeronautical meteorological stations make routine observations in accordance with the standards prescribed in CAP-174.

CAR 174.3015 Routine Observations and Reports (160)

- (1) An Aviation Meteorological Service Provider shall make routine observations at aerodromes, at such times and intervals as specified in CAP-174.
- (2) Routine observations and reports shall be issued in accordance with standards prescribe CAP-174.

CAR 174.3020 Special Observations and Reports (165)

- (1) An Aviation Meteorological Service Provider shall establish the criteria for reporting of special observations in accordance with the standards prescribed in CAP-174.
- (2) Reports of special observations shall be issued in accordance with the standards prescribed in CAP-174.

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^{l2} Δ3-1 2		

CAR 174.3025 Meteorological Information used in ATIS

The Aviation Meteorological Service Provider shall insure that Meteorological information used in ATIS (voice-ATIS and D-ATIS) shall be extracted in accordance with the standards prescribed in CAP-174.

CAR 174.3030 Contents of Reports (170)

An Aviation Meteorological Service Provider shall ensure that the contents of meteorological reports (local routine, special reports, METAR and SPECI) issued, comply with standards prescribed in CAP-174.

CAR 174.3035 Observing and Reporting Meteorological elements (175)

An Aviation Meteorological Service Provider shall ensure that following elements shall be observed and reported in accordance with the standards prescribed in CAP-174.

- (1) Surface wind
- (2) Visibility
- (3) Runway visual range
- (4) Present Weather
- (5) Clouds
- (6) Air and dew-point temperatures
- (7) Atmospheric pressure
- (8) Supplementary information

CAR 174.3040 Reporting Meteorological Information from Automatic Observing Systems (180)

An Aviation Meteorological Service Provider shall ensure that meteorological received from automatic observing systems is reported in accordance with standards prescribed in CAP-174.

CAR 174.3045 Observations and Reports of Volcanic Activity^{13 (185)}

(Not Applicable in Oman)

CAR 174.3050 Forecasts (255)

- (1) An Aviation Meteorological Service Provider, when required, shall designate aerodrome meteorological offices to provide the following forecasts:
 - (a) Aerodrome forecasts
 - (b) Landing forecasts
 - (c) Forecasts for take-off
- (2) The preparation and issuances of such forecasts shall be in accordance with the standards prescribed in CAP-174.

CAR 174.3055 Area Forecasts for Low-Level Flights (270)

An Aviation Meteorological Service Provider shall issue area forecasts for low level flights when required in accordance with the standards prescribed in CAP-174.

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¹³ A3 – 4.8 Not applicable

CAR 174.3060 SIGMET & AIRMET INFORMATION, AERODROME WARNINGS & WIND SHEAR WARNINGS & ALERTS (300)

Note: Technical specifications and detailed criteria related to this Section are given in CAP-174, Appendix 6.

- (1) An Aviation Meteorological Service Provider shall implement procedures for the issuance of the following information, warnings and Alerts
 - (a) SIGMET Information
 - (b) AIRMET Information
 - (c) Aerodrome Warnings
 - (d) Windhear Warnings
 - (e) Windshear Alerts
- (2) The issuing of the above information, warnings and alerts shall be in accordance with the standards prescribed in CAP-174.

CAR 174.3065 AERONAUTICAL CLIMATOLOGICAL INFORMATION (330)

Note: Technical specifications and detailed criteria related to this Sections are given in CAP-174, Appendix 7.

An Aviation Meteorological service provider shall prepare and supply to users, aeronautical climatological information, including Aerodrome climatological tables and Aerodrome climatological summaries, required for the planning of flight operations as agreed between the aviation meteorological service provider and those users in accordance with the standards prescribed in CAP-174.

CAR 174.3070 SERVICE FOR OPERATORS & FLIGHT CREW MEMBERS (360)

Note: Technical specifications and detailed criteria related to this Sections are given in CAP 174, Appendix 8.

- (1) An Aviation Meteorological Service Provider shall supply operators and flight crew members with meteorological information for:
 - (a) pre-flight planning by operators;
 - (b) in-flight re-planning by operators using centralized operational control of flight operations;
 - (c) use by flight crew members before departure; and
 - (d) aircraft in flight.14
- (2) The provision of such meteorological information shall be in accordance with the standards prescribed in CAP-174.

CAR 174.3075 Briefing, Consultation and Display (365)

Note: The requirements for the use of automated pre-flight information systems in providing briefing, consultation and display are given in CAR-174.3085.

An Aviation Meteorological Service Provider shall provide briefing and/or consultation, on request, to flight crew members and/or other flight operations personnel in accordance with standards prescribed in CAP-174.

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 $^{^{14}}$ A3 - 9.1.1

CAR 174.3080 Flight Documentation (370)

Note: The requirements for the use of automated pre-flight information systems in providing flight documentation are given in CAR-174.3085.

- (1) An Aviation Meteorological Service Provider shall make available flight documentation comprising meteorological information in accordance with the standards prescribed in CAP-174.
- (2) The Aviation Meteorological Service Provider shall retain information supplied to flight crew members for a period of at least thirty (30) days from the date of issue. The retention of such information shall be in accordance with the standards prescribed in CAP-174.¹⁵

CAR 174.3085 Automated Pre-flight Information Systems for Briefing, Consultation, Flight Planning and Flight Documentation (375)

An Aviation Meteorological Service Provider shall ensure that automated pre-flight information systems for briefing, consultation, flight planning and flight documentation are in accordance with standards prescribed in CAP-174.

CAR 174.3090 Information for Aircraft in Flight (380)

An Aviation Meteorological Service Provider shall ensure that meteorological information for aircraft in flight is supplied in accordance with standards prescribed in CAP-174.

Note: Technical specifications and detailed criteria related to this Section are given in CAP-174, Appendix 9.

CAR 174.3100 Information for Air Traffic Services Units (400)

An Aviation Meteorological Service Provider shall designate an aerodrome meteorological office or meteorological watch office to be associated with each air traffic services unit for the supply of upto-date meteorological information to the unit as necessary for the conduct of its functions in accordance with standards prescribed in CAP-174.

CAR 174.3105 Information for Search and Rescue Services Units (405)

An Aviation Meteorological Service Provider shall provide search and rescue services units with the meteorological information in accordance with standards prescribed in CAP-174.

CAR 174.3110 Information for Aeronautical Information Services Units (410)

The Aviation Meteorological Service Provider shall arrange for the supply of up-to-date meteorological information to relevant aeronautical information services units, as necessary, for the conduct of their functions.¹⁶

¹⁵ A3 - 9.3.4

¹⁶ A3 10.3

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SECTION 4 – REQUIREMENTS FOR AND USE OF COMMUNICATIONS

Note 1: Technical specifications and detailed criteria related to this Section are given in CAP-174, Appendix 10.

Note 2: It is recognized that it is for the CNS/ATM to decide upon its own internal organization and responsibility for implementing the telecommunications facilities referred to in this Section.

CAR 174.4000 Requirements for Communications (430)

An Aviation Meteorological Service Provider shall make available, suitable telecommunications facilities to permit the supply of the required meteorological information to air traffic services units in accordance with standards prescribed in CAP-174

CAR 174.4005 Use of Aeronautical Fixed Service Communications & the Public Internet — Meteorological Bulletins (435)

The Aviation Meteorological Service provider shall meteorological bulletins containing operational meteorological information to be transmitted via the aeronautical fixed service or the public Internet shall be originated by the appropriate meteorological office or aeronautical meteorological station.¹⁷

GM 174.4005

Meteorological bulletins containing operational meteorological information authorized for transmission via the aeronautical fixed service are listed in ICAO Annex 10, Volume II, chapter 4, together with the relevant priorities and priority indicators.

CAR 174.4010 Use of Aeronautical Fixed Service Communications — World Area Forecast System Products (440)

An Aviation Meteorological Service Provider who makes use of world area forecast system products shall ensure the ability to receive these in accordance with the Standards Prescribed in CAP-174

CAR 174.4015 Use of Aeronautical Mobile Service Communications (445)

An Aviation Meteorological Service Provider that makes use of Aeronautical Mobile Service Communications shall ensure that the content and format of meteorological information transmitted to aircraft and received from aircraft shall be consistent with the provisions of this CAR.¹⁸

CAR 174.4020 Use of aeronautical data link service — Contents of D-VOLMET (450)

An Aviation Meteorological Service Provider shall ensure that D-VOLMET are in accordance with the Standards Prescribed in CAP-174.

CAR 174.4025 Use of Aeronautical Broadcasting Service — Contents of VOLMET Broadcasts (455)

An Aviation Meteorological Service Provider shall ensure that VOLMET broadcasts are in accordance with the Standards Prescribed in CAP-174.

 $^{^{17}}$ A3 - 11.2

 $^{^{18}}$ A3 - 11.4

SECTION-5 – REQUIREMENTS FOR AIRCRAFT TO USE AND REPORT AVIATION METEOROLOGICAL INFORMATION

CAR 174.5000 Notifications Required from Operators (060)

An Operator requiring an aviation meteorological service shall notify the Aviation Meteorological Service Provider in accordance with standards prescribed in CAP-174.

CAR 174.5005 Use of Forecasts (250)

The user of a forecast shall take measures to ensure the validity of a forecast in accordance with standards prescribed in CAP-174.

Note: Technical specifications and detailed criteria related to this Section are given in CAP-174, Appendix 4.

CAR 174.5010 Obligations for Reporting of Aircraft Observations (200)

An Aviation Meteorological Service Provider in consultation with aircraft operators shall plan for:

- (1) for observations to be made by registered within Oman operating and operating on international air routes and
- (2) for the recording and reporting of these observations. 19

CAR 174.5015 Types of Aircraft Observations (205)

An Aircraft operator shall provide Aviation Meteorological Service Provider with:

- (1) routine aircraft observations during en-route and climb-out phases of the flight for aircraft which have arranged to supply such; and
- (2) special and other non-routine aircraft observations during any phase of the flight for all aircraft.²⁰

CAR 174.5020 Routine, Special and other Non-Routine Aircraft Observations (210)

The criteria for reporting routine and Special aircraft observations shall be in accordance with standards prescribed in CAP-174.

CAR 174.5025 Reporting of Aircraft Observations During Flight (230)

Aircraft observations during flight shall be reported in accordance with the standards prescribed in CAP-174

CAR 174.5030 Relay of Air-Reports by Air Traffic Services Units (235)

The Aviation Meteorological Service Provider shall coordinate with the Air Traffic Services Provider(s) to ensure that air traffic services units receiving air reports relay them to the Aviation Meteorological service provider in accordance with standards prescribed in CAP-174

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¹⁹ A3 – 5.1

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CAR 174.5035 Recording & Post-Flight Reporting of Aircraft Observations of Volcanic Activity (240)

An Aviation Meteorological Service Provider shall have in place, arrangements for the recording and post-flight reporting of aircraft observations of volcanic activity from flights operating on routes which could be affected by volcanic ash clouds in accordance with standards prescribed in CAP-174.