



**Public Authority for Civil Aviation**

# **Standard of Aviation Meteorology Service Provider Manual**

Manual Number: 1.3.7

Issue Date: 16<sup>th</sup> Nov 2018

Revision: REV-01

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## FOREWORD

- (1) In order to ensure the safety of aviation meteorological service and as guidance for aviation meteorological service providers (ANSPs) to establish, implement, evaluate and improve on an ongoing basis Operation Manual of aviation meteorological Service Provider, then the drafting of the Operation Manual must be in accordance with technical standards as mandated by CAR 174 (aviation meteorological Services organisations-certification).
- (2) CAR 174 has been basis for this manual
- (3) The editing practices used in this document are as follows:
  - (a) 'Shall' is used to indicate a mandatory requirement and may appear in this manual.
  - (b) 'Should' is used to indicate a recommendation
  - (c) 'May' is used to indicate discretion by the AUTHORITY the industry or the applicant, as appropriate.
  - (d) 'Will' indicates a mandatory requirement and is used to advise of action incumbent on the Authority

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## Glossary of Terms

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

AC	Advisory Circular
AD	Airworthiness directive
ADREP	Accident/incident data reporting (ICAO)
AELS	Aircraft emergency locator system
AFS	Aeronautical fixed service, (ICAO DOC 8400)
AFIZ	Aeronautical Flight Information Zone
A/G	Air ground (radio)
AGA	Aerodromes, air routes and ground aids, (ICAO Doc 8400).
AGL	Above ground level, (ICAO DOC 8400)
AGL	Aerodrome or aeronautical ground lighting; i.e. any light specifically provided as an aid to air navigation, other than a light displayed on an aircraft.
AIB	Accident investigation board
AIM	Aeronautical Information Management
AIS	Aeronautical Information Services
ALoSP	Acceptable level of safety performance
AMC	Acceptable means of compliance
AME	Aircraft maintenance engineer
AMO	Approved maintenance organization`
AMS	Aircraft maintenance schedule
ANS	Air navigation service
AOC	Air operator certificate
ASB	Alert service bulletin
ATC	Air traffic control
ATM	Air traffic management
ATS	Air traffic service(s)
CAA	Civil aviation authority
CBA	Cost-benefit analysis
CEO	Chief executive officer
CFIT	Controlled flight into terrain
Cir	Circular
CM	Condition monitoring
CMA	Continuous monitoring approach
CMC	Crisis management centre
CMT	Crisis management team
CNS	Communications, navigation and surveillance
CP	Command post
CRM	Crew resource management
CVR	Cockpit voice recorder
D&M	Design and manufacturing
DGR	Dangerous goods regulation
DMS	Document management system
DOA	Design organization approval
EAD	Emergency airworthiness directive
ECCAIRS	European Coordination Centre for Accident and Incident Reporting Systems
EDTO	Extended diversion time operation
EI	Effective Implementation

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ELT	Emergency locator transmitter
ELT(AF)	Emergency locator transmitter (Aircraft, fixed)
EMC	Emergency management centre
EMS	Environmental management system
ERP	Emergency response plan
FDR	Flight data recorder
FDM	Flight Data Monitoring
FIR	Flight information region
FL	Flight level
FMS	Flight management system
FRMS	Fatigue risk management systems
FTL	Flight time limitation
FTM	Fleet technical management
GAQ	Gap analysis questionnaire
GM	Guidance material
H	Hazard
HF	Human factors
HIRA	Hazard identification and risk assessment
HIRM	Hazard identification and risk mitigation
IATA	International Air Transport Association
ICAO	International Civil Aviation Organization
IFSD	In-flight shutdown
ILS	Instrument landing system
IMC	Instrument meteorological conditions
ISO	International Organization for Standardization
iSTARS	Integrated Safety Trend and Reporting System
LEI	Lack of effective implementation
LOC-I	Loss of control in flight
LOFT	Line-oriented flight training
LOS	Loss of separation
LOSA	Line operations safety audit
LSI	Line station inspection
MCM	Maintenance control manual
MDR	Mandatory defect report
MEDA	Maintenance error decision aid
MEL	Minimum equipment list
MFF	Mixed fleet flying
MOR	Mandatory occurrence report
MPD	Maintenance planning document
MRM	Maintenance resource management
MRO	Maintenance & repair organization
MOA	Maintenance organisation approval
MTOM	Maximum take-off mass
MTOW	Maximum take-off weight
OEM	Original equipment manufacturer
OHSMS	Occupational health and safety management system
OPS	Operations
OPM	Office Procedures Manual
ORP	Organization risk profile
OSC	Organization safety culture
OSHE	Occupational safety, health and environment



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OTSB	Oman Transport Safety Board
PANS-OPS	Procedures for Air Navigation Services – Aircraft Operations
PMI	Principal maintenance inspector
POA	Production organization approval
POI	Principal operations inspector
QA	Quality assurance
QC	Quality control
QM	Quality management
QMS	Quality management system
RAIO	Regional accident and incident investigation organization
RSOO	Regional safety oversight organization
SA	Safety assurance
SAG	Safety action group
SAR	Search and Rescue
SARPs	Standards and Recommended Practices (ICAO)
SB	Service bulletin
SCF-NP	System component failure — non-powerplant
SD	Standard deviation
SDCPS	Safety data collection and processing system
SeMS	Security management system
SHEL	Software/hardware/environment/liveware
SM	Safety management
SMM	Safety management manual
SMP	Safety Management Panel
SMS	Safety management system(s)
SOPs	Standard operating procedures
SPI	Safety performance indicator
SPM	Safety performance monitoring
SPT	Safety performance trend
SRB	Safety review board
SRC	Safety review committee
SRM	Safety risk management
SSO	Safety services office
SSP	State safety programme
STDEVP	Population standard deviation
TBD	To be determined
TOR	Terms of reference
UC	Ultimate consequence
UE	Unsafe event
USOAP	Universal Safety Oversight Audit Programme (ICAO)
VRS	Voluntary Reporting System
WIP	Work in progress

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## **1. Chapter 1 - Introduction**

### **1.1. Purpose**

This manual provides guidance to establish, implement, evaluate and improve on an ongoing basis Operation Manual of Aviation Meteorology Service Provider.

### **1.2. SCOPE**

Procedures for establishing the Operations Manual of Aviation Meteorology Service Providers as set forth in this manual are minimum conditions and service provider is required to improve it according to conditions in the field.

## 2. Chapter 2 – CONTENT OF OPERATION MANUAL

### 2.1. Operation Manual Outline

The order of MET Operation Manual is as follows:

- (1) **Cover**
- (2) **Approval Page (Document Control)**
- (3) **Document history**
- (4) **Distribution list**
- (5) **Amendment records**
- (6) **Table of content**
- (7) **Chapter 1: Abbreviations and Definitions**
  - 1.1 Abbreviations
  - 1.2 Definitions
  - 1.3 Terms used with a limited meaning
- (8) **Chapter 2: Scope**
  - 2.1 Introduction
  - 2.2 Roles and Responsibilities
- (9) **Chapter 3: Service Provided**
  - 3.1 Meteorological reports
    - 3.1.1 Routine/special Observation reports
    - 3.1.2 Forecast wind and temperature
    - 3.1.3 Terminal Aerodrome Forecast TAF
    - 3.1.4 Aerodrome warning
    - 3.1.5 Wind shear warnings
    - 3.1.6 SIGMET Information
    - 3.1.7 Trend Forecasts
    - 3.1.8 Take-off forecasts
    - 3.1.9 Reports on runway visual range RVR
    - 3.1.10 Flight folder
    - 3.1.11 Spot winds
    - 3.1.12 Low level significant weather charts
    - 3.1.13 Area forecasts
    - 3.1.14 Upper winds and temperature charts
    - 3.1.15 Significant weather charts
    - 3.1.16 Regional (Area) QNH
  - 3.2 Briefing
  - 3.3 VOLMET
  - 3.4 Logs and Records

**(10) Chapter 4: Personnel and Training requirement**

- 4.1 Job Description
  - 4.1.1 Chief of Aviation Weather Forecasting
  - 4.1.2 Aviation Weather forecaster
  - 4.1.3 Aviation Weather Observer
- 4.2 Training requirement and qualifications
  - 4.2.1 Chief of Aviation Weather Forecasting
  - 4.2.2 Aviation Weather forecaster
  - 4.2.3 Aviation Weather Observer
  - 4.2.4 Training records

**(11) Chapter 5: Customers and Suppliers**

- 5.1 Customers
- 5.2 Suppliers

**(12) Chapter 6: Forms and Documents**

- 6.1 Forms
- 6.2 Documents

**(13) Chapter 7: Standards Procedures for Observing**

- 7.1 Observing Process
- 7.2 MET reports
- 7.3 METAR
- 7.4 SPECI
- 7.5 TREND Forecast
- 7.6 SYNOP
- 7.7 Radiosonde Operation

**(14) Chapter 8: Standards Procedures for Forecasting**

- 8.1 Terminal Aerodrome Forecast (TAF)
- 8.2 SIGMET
- 8.3 Aerodrome Warning
- 8.4 Wind shear warnings
- 8.5 Regional (Area) QNH
- 8.6 Significant weather charts
- 8.7 Spot Winds
- 8.8 Low level significant weather charts
- 8.9 Flight Folders
- 8.10 Forecast Folders
- 8.11 Retrieving data from archive center

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- (15) Chapter 9: Meteorological Facilities and Instruments locations**
- 9.1 Muscat International Airport
  - 9.2 Salalah International Airport
  - 9.3 Suhar Airport
  - 9.4 Duqm Airport
  - 9.5 Fahud Airport
  - 9.6 Marmul Airport
  - 9.7 Qarn Alam Airport
  - 9.8 Mukhaizena Airport
- (16) Chapter 10: Meteorological instruments sensor calibration Standard Procedures**
- 10.1 Scope
  - 10.2 Standard operation procedure for calibrating pressure and humidity sensors
  - 10.3 Standard operation procedure for Metadata process
- (17) Chapter 11: Communication and coordination**
- 11.1 Introduction
  - 11.2 Communication and coordination between DGMET and DGAN
  - 11.3 Transmission of operational Meteorological information
  - 11.4 Satellite Based Systems
  - 11.5 Muscat voice weather broadcasts
  - 11.6 Logbooks
- (18) Chapter 12: Safety and emergency procedures**
- 12.1 Responsibilities
  - 12.2 Fire precautions
  - 12.3 Procedure in the event of fire
  - 12.4 Color code for fire extinguishers
  - 12.5 Emergency categories
  - 12.6 Emergency notification
  - 12.7 Emergency actions
  - 12.8 Disclosure of information
- (19) Chapter 13: Safety Management System (To develop)**
- 13.1 Safety Policy
  - 13.2 Safety Management of service
  - 13.3 Reporting of Safety data
  - 13.4 Continuous Monitoring Mechanism
  - 13.5 Investigating Safety Occurrence
- (20) Chapter 14: Quality Management System (To develop)**
- 14.1 Inspection Policy
  - 14.2 Inspection procedure
  - 14.3 Quality Control procedure
  - 14.4 Corrective action procedure
  - 14.5 Preventive action procedure

### 3. Appendices

- Appendix A: Aviation Forecaster (Meteorologist) routine work schedule
- Appendix B: Weather Observer (Met Technician) routine work schedule
- Appendix C: Forecasters & Observers Take-Over Form
- Appendix D: Reporting Problems Form
- Appendix E: When to Issue the Following
- Appendix F: Local Criteria of Issuing Aerodrome Warning (version 2 – 2018)
- Appendix G: Electronic Checklist for Aviation Forecasters & Observers
- Appendix H: Aeronautical Alphabet
- Appendix I: Conversion Table of RVR