



Australian Government

Bureau of Meteorology

Aeronautical Meteorological Observer

Supervised Field Experience Report

Participant details
Name:
Email:
Observing location:
Supervisor details (include all persons performing supervision)
Name/s:

Overview

This module places the participant in the company of an experienced observer to perform a practical demonstration, under supervision, of the knowledge and skills acquired during the prerequisite AMO theory modules.

The participant will perform a continuous weather watch that includes the provision of **at least 60 weather observations** and corresponding reports (for example, ATIS broadcast, plain language report, METAR/SPECI). Evidence of each weather observation is to be recorded. The weather watch must be performed over a period of at least 30 hours across a minimum of three calendar days or parts thereof (not necessarily consecutively).

Prerequisites

Completion of the following AMO Competency course theory module exams:

- Fundamentals of Aviation Meteorology, or the recognised prior learning credit from an approved course; and
- Principles of Aeronautical Meteorological Observations; and
- (BOM, AAD and RAN staff only) - METAR/SPECI Coding Procedures.

Relationship to Standards

Complies with MA9 - Qualifications, Competencies, Education and Training Requirements for Meteorological Personnel Providing Service for Aviation.

Reference Material

Participants may consult all operational documentation relevant and available for the observing location.

Assessment method

Competency is assessed by the course trainer's evaluation of the evidence provided by the supervisor and participant.

Role of the supervisor

The supervisor shall hold a valid AMO Competency, with at least six months experience making weather observations for aviation purposes. The supervisor shall also hold a valid AMO METAR/SPECI Coding Competency and/or AMO Antarctic Procedures Competency where the provision of observations are in the METAR/SPECI format and/or in Antarctica. More than one person may perform the supervisor role for the duration of the module.

While the supervisor's role will primarily involve the observance and recording of performance of the participant, a degree of mentoring may be required at times. Some discussion will be required during the initial stages of the module relating to the logistics of performing an observation, such as:

- the observations routine for the location
- the use of the display console and other systems
- mechanisms for reporting and recording of observations
- location specific observing requirements

The supervisor should always afford the participant the opportunity to provide their best interpretation of the meteorological elements when performing an observation in the first instance. The supervisor may facilitate discussion points and suggestions when necessary.

As the module progresses, it is expected the supervisor's role will become more passive. However, as the supervisor is considered the issuing officer for all disseminated meteorological reports, they shall always

check and confirm the accuracy of an observation made by the participant prior to the transmission of a report.

Competency Checklists

Both the participant and supervisor shall familiarise themselves with the four key competencies for this module.

The supervisor shall initial each competency checklist item when it has been correctly demonstrated with consistency over the period of the module.

Questions/scenarios to support demonstration of knowledge and skills are provided for each competency. These are to assist the supervisor to query the participant, particularly where specific phenomena or circumstances are not encountered during the conduct of the course. Supervisors are not limited to the questions/scenarios provided; additional questions may be asked and opportunities offered that will challenge the participant, but setting excessive expectations beyond the experience level of the participant must be avoided.

Log of Observations

A Log of Observations pro forma is attached. This log shall be maintained by the course participant detailing each report that is issued.

The log shall show a minimum of 60 observations reported over a period of at least 30 hours. The observation sessions must have been performed over a minimum of three calendar days. These days do not have to be consecutive. Some example log entries are provided.

An alternative observation log may be used to record the reports if it includes similar details as the attached log. The participant and supervisor must initial each observation.

Paperwork Submission

Scan and email the completed competency checklists and log of observations to:

bmtc-awo@bom.gov.au

Alternatively, the course participant may upload the paperwork in the upload facility provided in the AMO Competency course on BOM Learn.

Competency 1: Continuously monitor the weather situation

Competency description :

Weather parameters are appraised to identify the significant and evolving weather phenomena that are affecting or will likely affect the area of responsibility throughout the watch period.

Performance criteria :

1. Analyse and describe the existing local weather conditions.

Procedures :

The participant makes a detailed study of available resources to assess the synoptic weather situation before taking the first observation, and when updates become available. He/she analyses the local and regional weather conditions and formulates the short-term change of weather parameters and phenomena. Appropriate action is taken when significant changes are observed or anticipated in the short term.

During the demonstration of skills, did the participant :	Supervisor Initials
i. analyse the weather charts, weather radar, satellite images and aerological diagrams where available	
ii. analyse the local TAF and other local forecast products	
iii. analyse the observations and forecasts in the METAR/SPECI and TAF of neighbouring aerodromes where appropriate	
iv. analyse observations from nearby weather stations	

<p>Questions/scenarios to support demonstration of knowledge and skills :</p> <ul style="list-style-type: none"> • What is the direction of the synoptic background wind over the local area? • Any local effects on the wind flow? • Any significant weather affecting neighbouring aerodromes? • Any significant weather approaching the local area? • Any significant weather is expected during the shift judging from forecast or observed data and the possible timing? • Any weather parameters requiring particular attention during the shift?
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Competency 2: Observe and record aeronautical meteorological phenomena and parameters

Competency description :
Observations of weather parameters and phenomena, and their significant changes, are made according to documented thresholds and regulations.

Performance criteria :

1. Perform and record observations of the following (where applicable):
 - surface wind direction and speed
 - visibility
 - significant weather phenomena
 - cloud amount, height of base, and type
 - vertical visibility
 - temperature and dew point
 - atmospheric pressure / QNH
 - additional information deemed relevant for aviation operations
2. Ensure that observations are prepared and issued in accordance with prescribed procedures regarding content, representativeness, and timelines.

Procedures :
The participant makes weather observations in accordance with the prescribed procedures. The observation is prepared, issued and recorded in the prescribed format via the documented method.

During the demonstration of skills, did the participant :	Supervisor Initials
i. check the consistency of wind data noting the current weather situation and local effects	
ii. determine the visibility including any significant visibility reductions, with the assistance of a visibility marker diagram or equivalent	
iii. identify weather phenomena at the aerodrome, and in the vicinity/distance where appropriate	
iv. identify the precipitation type and intensity and conduct a consistency check with rainfall measurements, radar data and observation of clouds	
v. identify cloud type (where required), cloud base and cloud amount	
vi. check the consistency of temperature, humidity, and pressure data, where available, accounting for the current weather situation and local effects	
vii. report additional hazards (for example, wind shear) according to prescribed procedures	
viii. pay due attention to areas or directions which are likely to be affected by significant weather during the observation	
ix. accurately interpret data from automated sensors to assist with performing the observation	
x. re-check the accuracy of the components of the observation before issuance	
xi. verify the completeness of observation elements in the report before issuance	

Questions/scenarios to support demonstration of knowledge and skills :

- From a series of 'visibility scenario diagrams' the participant demonstrates how the visibility is reported.
- If cumulus clouds were developing at the aerodrome, with a surface temperature of (x) and a dewpoint temperature of (y), calculate the approximate cloud base height?
- The participant is asked to identify images of various clouds from the Cloud Atlas or similar resource.
- What types of precipitation are associated with each of the basic cloud types?
- What hourly rainfall rates are used to assist with determining the intensity of rain? Using the display console show how you would determine the hourly rainfall rate equivalent?
- What visibility reduction values are used as a guide for determining the intensity of drizzle and snow?
- What are the HAM figures for cloud and visibility for (this) aerodrome? Where are these figures published? What does the term 25 nm MSA refer to? What is the 25 nm MSA for this aerodrome? How does the 25 nm MSA affect a weather observation?
- Where is the Plan of Visibility markers diagram, or equivalent, for this location? How far away is (that) marker?

Competency 3: Ensure the quality of the performance of systems and of meteorological information

Competency description :

The quality of meteorological observations is maintained at the required level by the application of documented quality management processes.

Performance criteria :

1. Apply the organisation's quality management system and procedures.
2. Interpret automatic observed parameters to ensure that observations remain representative of local conditions when differences occur between automatic sensor technologies and manual observing techniques.
3. Check and confirm the quality of meteorological observations before issuance, including relevance of content, time of validity and location of phenomena.
4. In accordance with prescribed procedures:
 - identify errors and omissions in meteorological observations
 - correct and report errors and omissions
 - make and disseminate corrections in a timely manner.

Procedures :

The participant monitors the performance of automated sensors. Appropriate techniques are applied to validate automated data against human observation. Where a discrepancy exists, appropriate action is taken.

During the demonstration of skills, did the participant :	Supervisor Initials
i. compare and verify the output from the anemometer with an estimation of a manually observed wind speed and direction	
ii. check the consistency and reliability of air temperature, humidity data and pressure given the current weather situation	
iii. monitor the performance of visibility sensors against human observations	
iv. monitor the performance of the ceilometer against human observations	
v. compare TBRG readouts with observed precipitation intensity and duration	
vi. take appropriate action where significant inexplicable discrepancies between automated sensors and manually observed elements exist	
vii. rectify (where appropriate) any quality control errors and warnings detected on the display console	

Questions/scenarios to support demonstration of knowledge and skills :

- Without consulting the anemometer's output, what approximate wind speed and direction does the wind direction indicator (windsock) currently show?
- What are the limitations of the visibility meter?
- Demonstrate how to view the visibility meter data on the display console.
- What is the current one minute / ten minute visibility meter output? Is this representative of the manually observed visibility? If not, why?
- What are the limitations of the ceilometer and the sky condition algorithm?
- How accurate is the sky condition algorithm in predominantly convective skies?
- When will the sky condition algorithm often over-estimate cloud amount?
- Under what conditions is the sky condition algorithm output most accurate?
- Do the current temperature/dew point/humidity values look reasonable to you? How did you come to that conclusion?
- Does the current QNH figure look reasonable to you? How did you come to that conclusion?
- What actions would you take if suspicious data are identified?

Competency 4: Communicate meteorological information to internal and external users

Competence description :

All meteorological data and information are concise, complete and communicated in a manner that will be clearly understood by the users.

Performance criteria :

1. Ensure that all observations are disseminated through the authorised communication means and channels to designated user groups.
2. Present aeronautical meteorological data and information in a clear and concise manner using suitable terminology.
3. Alert forecasters to observed or imminent significant changes in the weather within the local area.

Procedures :

The participant confirms the dissemination of the aerodrome meteorological reports and adheres to any documented local alerting procedures to forecasting staff, observing staff, air traffic services staff, pilots, etc.

During the demonstration of skills, did the participant :

**Supervisor
Initials**

i. issue the reports in a timely manner

ii. issue the reports in the correct format

iii.	issue the reports via documented methods and dissemination channels	
iv.	confirm availability of the meteorological report for users	
v.	notify users of significant or hazardous phenomena by alternate means when required	
vi.	notify forecasters of any sustained significant difference in actual observed conditions compared to forecast conditions	

Questions/scenarios to support demonstration of knowledge and skills :

- Describe your actions if you recognise a significant difference between the forecast for your local aerodrome and the actual observed conditions.
- Describe a situation where you would alert forecasters or other users in order to provide more information than what is contained in your report.
- What would you do if your normal means of transmitting a report was not functioning? How would you notice and what action would you take?

Log of Observations

Participant Name: _____

Observing Location: _____

Date	Time (UTC)	Type of report	Visibility	Weather	Cloud	or CAVOK (✓)	Plain language / other	Initials	
								Participant	Supervisor
23/05/16	0700	ATIS	9999	-SHRA	FEW012 SCT030		DIST CB TOPS W	JAR	OS
23/05/16	0810	ATIS	RED to 5000m	SHRA	SCT008 SCT030 FEW030TCU		WS RWY09	JAR	OS
25/05/16	2315	ATIS				✓		JAR	JSK

Date	Time (UTC)	Type of report	Visibility	Weather	Cloud	or CAVOK (✓)	Plain language / other	Initials	
								Participant	Supervisor

Date	Time (UTC)	Type of report	Visibility	Weather	Cloud	or CAVOK (✓)	Plain language / other	Initials	
								Participant	Supervisor

Notes