香港天文台
HONG KONG OBSERVATORY

Checklist Templates for Direct Observation and Oral Assessments (AMOB)

Competency Assessment System
Hong Kong Observatory
Hong Kong, China

Prepared By:	***Signed***	**Approved By:**	***Signed***
Date:	20/08/2012	**Date:**	20/08/2012

There will be seven checklist templates for direct observation and oral questions for Weather Observers. Each checklist template contains the competency standards, their corresponding descriptions and performance criteria. The assessee will be asked to carry out the listed procedures, taking into account the schedule of operational duties. The assessor will observe and check whether the assessee has performed the actions expected during the demonstration of skills. The assessor will record down the assessment and any comments or remarks as necessary. The checklist may also contain oral questions to support demonstration of knowledge and skills by the assessee. During the direct observation assessment, the assessor may adjust the oral questions as situation warrants and should minimise interference to the Observer's operational work. The assessor will record the assessee's answer or response and evaluate the correctness.

Version Control

Checklist Template	Latest Version	Remarks
AMOB A	1/2012	
AMOB B	1/2012	
AMOB C	1/2012	
AMOB D	1/2012	
AMOB E	1/2012	
AMOB F	1/2012	
AMOB G	1/2012	

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CAS-AMOB Checklist A for Direct Observation and Oral Assessments

Name of assessee	
Name of assessor	
Date of assessment	
Place of assessment	

Competency standard :

1. Monitor continuously the weather situation.
4. Communication meteorological information to internal and external users.

Competence description :

1. 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.
4. All meteorological data and information are concise, complete and communicated in a manner that will be clearly understood by the users.

Performance criteria :

1.1 Analyse and describe the existing local weather conditions.
1.2 Assess the likelihood of significant weather affecting the aerodrome and its vicinity in the short term.
4.2 Present weather information clearly to users.
4.3 Alert forecasters to observed or imminent significant changes in the vicinity of the aerodrome.

Procedures : The Weather Observer studies the surface weather chart and upper air charts to assess the synoptic weather situation before taking the first observation or when there are updates. He/she analyses the local and regional weather conditions and formulates the short-term change of weather parameters and phenomena. Take appropriate actions when significant changes are observed or anticipated in the short term.

During the demonstration of skills, did the assessee :	**Y (√) N (x)**	**Comments / Remarks**
(i) study the weather charts and AMOS data		
(ii) study observations from automatic weather stations (AWS) and wind profiler data in Hong Kong		
(iii) study regional observations and forecasts from METAR/SPECI and TAF of neighbouring aerodromes including Shenzhen (ZGSZ), Zhuhai (ZGSD), Macao (VMMC), Guangzhou (ZGGG) and from Guangdong AWS		

(iv) study local forecasts from TAF, TREND and take-off forecasts of HKIA, local aviation forecast and public weather forecast		
(v) study radar and satellite pictures and relevant data such as LLIS, radiometer data		
(vi) look out of the window		
(vii) alert Aviation Forecaster and communicate in a clear and concise manner when significant weather changes are observed or anticipated in the short term		
(viii) record the communication with users in the Appreciation log		

Questions to support demonstration of knowledge and skills :

Oral questions	**Answer / Response**	**Y (√) N (x)**
(viii) What is the direction of the synoptic background wind over Hong Kong?		
(ix) Any local effect on the wind flow at HKIA?		
(x) Any significant weather affecting neighbouring aerodromes?		
(xi) Any significant weather approaching Hong Kong from remote sensing data?		
(xii) Any significant weather is expected during the shift judging from TAF of HKIA and that of neighbouring aerodromes and the possible timing?		
(xiii) Any weather parameters requiring particular attention during the shift?		

Feedback to assessee :

Remarks :	
Assessee signature :	
Assessor signature :	

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CAS-AMOB Checklist B for Direct Observation and Oral Assessments

Name of assessee	
Name of assessor	
Date of assessment	
Place of assessment	

Competency standard :

2. Observe and record aeronautical meteorological phenomena and parameters.
3. Ensure the quality of the performance of systems and of meteorological information.
4. Communicate meteorological information to internal and external users.

Competence description :

2. Observations of weather parameters and phenomena, and their significant changes, are made according to documented thresholds and regulations.
3. The quality of meteorological observations is maintained at the required level by the application of documented quality management processes.
4. All meteorological data and information are concise, complete and communicated in a manner that will be clearly understood by the users.

Performance criteria :

2.1 Perform and record routine and non-routine weather observations effectively.

2.3 Ensure that observations are prepared and issued in accordance with ICAO Annex 3, WMO-No.49, regional and national formats, codes and technical regulations on content, representative and timeliness by

- 2.3.1 issuing observations on time;
- 2.3.2 issuing observations in correct code form;
- 2.3.3 issuing non-routine observations meeting special criteria.

3.1 Apply quality management system and procedures.

3.2 Check and confirm the quality of meteorological observations before issuance, including relevance of content, time of validity and location of phenomena.

4.1 Ensure that all observations are disseminated through the authorized communication means and channels to designated user groups.

Procedures : The Weather Observer makes weather observation in accordance with the prescribed time schedule (half-hourly) and procedures. He/she prepares and issues the weather observation in prescribed format via documented method.

During the demonstration of skills, did the assessee :	**Y (√) N (x)**	**Comments / Remarks**
(i) start the sequence of weather observation within 10 minutes preceding to the observation		
(ii) take weather, cloud and visibility observation at the observation platform and view all directions		

(iii) focus on the areas or directions which are likely to be affected by significant weather during weather observation		
(iv) extract relevant weather parameters from AMOS for incorporation into METAR/SPECI/LRR/LSR/SYNOP reports		
(v) re-check the accuracy of the components of the observation before issuance		
(vi) verify the completeness of observation elements in the report before issuance		
(vii) issue the weather reports on time (METAR/SPECI not more than 5 minutes after observation time; LRR/LSR not more than 10 minutes; SYNOP not more than 15 minutes)		
(viii) issue the weather reports in correct coding and format		
(ix) take special observations and issue SPECI according to documented thresholds		
(x) issue SPECI in a timely manner		
(xi) alert designated users including Duty Aviation Forecaster immediately after making special observation		
(xii) issue the weather reports via documented methods and dissemination channel		
(xiii) check and confirm that the reports has been successfully disseminated		

Questions to support demonstration of knowledge and skills :		
Oral questions	**Answer / Response**	**Y (√) N (x)**
(xiv) What are the procedures for issuing SPECI?		

Feedback to assessee :	
Remarks :	
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Assessor signature :	

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CAS-AMOB Checklist C for Direct Observation and Oral Assessments

Name of assessee	
Name of assessor	
Date of assessment	
Place of assessment	

Competency standard :
2. Observe and record aeronautical meteorological phenomena and parameters.

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

Performance criteria :
2.1.1 Record surface wind direction and speed
2.1.7 Provide supplementary weather information, wind shear and special weather phenomena.
2.2 Interpret automatic observed parameters to ensure that observations remain representative of local conditions

Procedures : The Weather Observer executes proper procedures to retrieve wind data from appropriate instrumentation and apply techniques to examine data and take appropriate remedial actions.

During the demonstration of skills, did the assessee :	**Y (√) N (x)**	**Comment**
(i) check the consistency of wind data noting the present weather situation and local topography		
(ii) check and correct for suspicious gust according to documented procedures		
(iii)include relevant wind shear reports in METAR correctly		

Questions to support demonstration of knowledge and skills :

Oral questions	**Answer / Response**	**Y (√) N (x)**
(iv) Any wind shear observed over the north and the south runway judging from anemometer data?		

(v) How to identify and remove artificial gust?		
(vi) How do the hangars over the western part of the runway affect the winds recorded at the western end of the south runway in strong north to northwesterly wind conditions?		
Feedback to assessee :		
Remarks :		
Assessee signature :		
Assessor signature :		

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CAS-AMOB Checklist D for Direct Observation and Oral Assessments

Name of assessee	
Name of assessor	
Date of assessment	
Place of assessment	

Competency standard :

2. Observe and record aeronautical meteorological phenomena and parameters.
3. Ensure the quality of the performance of systems and of meteorological information.

Competence description :

2. Observations of weather parameters and phenomena, and their significant changes, are made according to documented thresholds and regulations.
3. The quality of meteorological observations is maintained a the required level by the application of documented quality management processes.

Performance criteria :

2.1.2 Make visibility observation including RVR and vertical visibility

2.2 Interpret automatic observed parameters to ensure that observations remain representative of local conditions when differences occur between automatic sensor technologies and manual observing techniques

3.3.1 Monitor systems and identify errors and/or omissions

3.3.2 Take remedial action if errors and/or omissions are identified in a timely manner

Procedures : The Weather Observer monitors the performance of visibility sensors. He/she executes proper procedures to extract visibility data from appropriate source and apply techniques to validate data against human observation.

During the demonstration of skills, did the assessee :	**Y (√) N (x)**	**Comments / Remarks**
(i) monitor the performance of visibility sensors using appropriate tools		
(ii) take appropriate actions when suspicious visibility data are identified before readings dropping below 2000 m		
(iii) determine correctly the prevailing visibility from the six Forward Scatterer readings and human observation		
(iv) include directional visibility and RVR as appropriate		

Questions to support demonstration of knowledge and skills :		
Oral questions	**Answer / Response**	**Y (√)** **N (x)**
(vi) If AMOS is down, how to convert the nighttime visibility (irrespective of MOR value or human observed value) for aeronautical purposes.		
(vii) How to identify suspicious visibility sensor readings and what are the actions to be taken when suspicious data are identified?		
(viii) When should the vertical visibility be reported ?		

Feedback to assessee :	
Remarks :	
Assessee signature :	
Assessor signature :	

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CAS-AMOB Checklist E for Direct Observation and Oral Assessments

Name of assessee	
Name of assessor	
Date of assessment	
Place of assessment	

Competency standard :
2. Observe and record aeronautical meteorological phenomena and parameters.

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

Performance criteria :
2.1.3 Make significant weather phenomenon observation
2.1.4 Make cloud observation
2.1.7 Provide supplementary weather information
2.2 Interpret automatic observed parameters to ensure that observations remain representative of local conditions

Procedures : The Weather Observer makes cloud and weather observations including significant weather phenomenon and check consistency with weather sensor data.

During the demonstration of skills, did the assessee :	**Y (√) N (x)**	**Comments / Remarks**
(i) identify correctly cloud type and significant clouds (CB, TCU, ACSL over ridges), cloud base and cloud amount of different layers, total cloud amount		
(ii) compare human observation of cloud base with ceilometer readings		
(iii) determine the occurrence of precipitation, precipitation type and intensity and conduct consistency check with rainfall measurements, radar data and observation of significant clouds (e.g. CB/TCU)		
(iv) identify significant weather phenomena over the aerodrome and within visual range		
(v) log down the cloud information and weather phenomena accurately in the Observation Book		

Questions to support demonstration of knowledge and skills :		
Oral questions	**Answer / Response**	**Y (√)** **N (x)**
(vi) When the characteristics of sand/dust weather is observed, what actions should be taken ? Demonstrate how to access real-time air pollutant concentration data on the Intranet.		

Feedback to assessee :	
Remarks :	
Assessee signature :	
Assessor signature :	

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CAS-AMOB Checklist F for Direct Observation Assessment

Name of assessee	
Name of assessor	
Date of assessment	
Place of assessment	

Competency standard :
2. Observe and record aeronautical meteorological phenomena and parameters.

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

Performance criteria :
2.1.5 Make temperature and humidity observation
2.2 Interpret automatic observed parameters to ensure that observations remain representative of local conditions

Procedures : The Weather Observer executes proper procedures to retrieve temperature and humidity data and examine the data reliability.

During the demonstration of skills, did the assessee :	**Y (√) N (x)**	**Comments / Remarks**
(i) check the consistency and reliability of air temperature, dew point temperature and humidity data given the present weather situation		
(ii) take down air temperature and dew point temperature readings correctly in the Observation Book.		

Feedback to assessee :

Remarks :

Assessee signature :	
Assessor signature :	

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CAS-AMOB Checklist G for Direct Observation and Oral Assessments

Name of assessee	
Name of assessor	
Date of assessment	
Place of assessment	

Competency standard :
2. Observe and record aeronautical meteorological phenomena and parameters.

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

Performance criteria :
2.1.6 Make barometric pressure observation
2.2 Interpret automatic observed parameters to ensure that observations remain representative of local conditions

Procedures : The Weather Observer executes proper procedures to retrieve pressure data and demonstrate how to make pressure observation when data are not available from AMOS.

During the demonstration of skills, did the assessee :	**Y (√) N (x)**	**Comments / Remarks**
(i) check the reliability of the pressure data noting the present weather situation, diurnal variation and pressure data in the vicinity of the aerodrome (e.g. HKO, Macau, Shenzhen)		
(ii) note the pressure tendency		
(iii) take down the pressure readings correctly in the Observation Book.		

Questions to support demonstration of knowledge and skills :

Oral questions	**Answer / Response**	**Y (√) N (x)**
(iv) What are the possible causes for abrupt change in atmospheric pressure?		
(v) How to convert QNH value from 'hPa' to 'inchHg'?		

(vi) How to make pressure observation and obtain QNH and QFE readings correctly assuming data from AMOS is not available?		
Feedback to assessee :		
Remarks :		
Assessee signature :		
Assessor signature :		