
GEN 3.5 METEOROLOGICAL SERVICES**1. RESPONSIBLE SERVICE**

1.1 The Meteorological Authority in the state of Malaysia is the Malaysian Meteorological Service.

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1.2 The service is provided in accordance with the provisions contained in the following ICAO documents:

- a) Annex 3 - Meteorological Services for International Air Navigation
- b) DOC 8869-AN/893/4 - Manual of Aeronautical- Meteorological Practices.
- c) DOC 7030 - Regional Supplementary Procedures.

1.3 Differences to these provisions are detailed in subsection GEN 1.7.

The Class 1 Meteorological Office at KL International Airport Sepang, Kota Kinabalu International Airport, Penang International Airport, Kuching International Airport, Kuantan Airport and Butterworth Airport operate throughout 24 hours. The Dependent Meteorological Offices at Subang and Labuan function throughout the 24 hours but meteorological briefing is available only during the period 0000 - 0900 UTC (Subang) and 2200 - 1400 UTC (Labuan).

2. AREA OF RESPONSIBILITY

2.1 Meteorological Office at KL International Airport Sepang as Meteorological Watch Office (MWO) is responsible for providing meteorological service for in-flight aircraft in the Kuala Lumpur FIR. It also provides meteorological services to other aerodromes in Peninsular Malaysia where there are no Meteorological forecasters.

2.2 The Meteorological Office at the Kota Kinabalu International Airport as Meteorological Watch Office (MWO) is responsible for providing meteorological service for in-flight aircraft in the Kota Kinabalu FIR. It also provides meteorological services to other aerodromes in Sabah and Sarawak.

2.3 Table below shows the area of responsibility of MWOs:

Name of MWO/Location Indicator	Flight Information Region (FIR)	ICAO Location Indicator - Listed in AOP Tables	ICAO Location Indicator - Not Listed in AOP Tables	Aerodromes/Airports
KLIA Meteorological Office/WMKK	Kuala Lumpur FIR	WMKK WMKP WMKJ WMKL	WMKM WMKD WMSA WMKA WMKI WMKC WMKN WMKB WMKE	Kuala Lumpur International Penang International Johor Bahru/Senai International Langkawi International Malacca Kuantan Sultan Abdul Aziz Shah Sultan Abdul Halim Sultan Azlan Shah Sultan Ismail Petra Sultan Mahmud Butterworth Kerteh
Kota Kinabalu Meteorological Office/WBKK	Kota Kinabalu FIR	WBKK WBGG	WBKS WBKW WBGR WBGB WBGS WBKL	Kota Kinabalu International Kuching International Sandakan Tawau Miri Bintulu Sibu Labuan

3. METEOROLOGICAL OBSERVATIONS AND REPORTS

Name Of Station Location Indicator	Type And Frequency Of Observation	Types Of MET Reports	Observation System and Site(s)	Hours Of OPS	Climatological Information
1	2	3	4	5	6
SEPANG KL International WMKK	Half hourly plus special observations	METAR SPECI TREND	i) Automatic Weather Observing System (AWOS) adjacent to touchdown zones for all runways. ii) Runway Visual Range (RVR) measurement for all runways. iii) Terminal Doppler Radar monitor of severe weather and wind shear. iv) Automatic Weather System at Meteorological Station v) Low level vertical wind shear observation by means of pilot balloon observations at meteorological station 4 times daily	H24	Climatological summaries avbl
SUBANG Sultan Abdul Aziz Shah WMSA	Hourly plus special observations	METAR SPECI TREND	i) Wind and Runway Visual Range System measurement for wind and visibility at runway. ii) Automatic Weather System at Meteorological Station.	H24	Climatological summaries avbl
PENANG Bayan Lepas WMKP	Half hourly plus special observations	METAR SPECI TREND	i) Low level vertical wind shear observations by means of pilot balloon observations at Meteorological Station 4 times daily ii) Wind and Runway Visual Range System measurement for wind and visibility at runway. iii) Automatic Weather System at Meteorological Station.	H24	Climatological summaries avbl
LANGKAWI Langkawi International WMKL	Hourly plus special observations	METAR SPECI	i) Wind and Runway Visual Range System measurement for wind and visibility at runway. ii) Automatic Weather System at Meteorological Station.	H24	Climatological summaries avbl
KUANTAN Kuantan WMKD	Half hourly plus special observations	METAR SPECI TREND	i) Low level vertical wind shear observations by means of pilot balloon observations at Meteorological Station 4 times daily. ii) Wind and Runway Visual Range System measurement for wind and visibility at runway. iii) Automatic Weather System at Meteorological Station.	H24	Climatological summaries avbl
ALOR STAR Sultan Abdul Halim WMKA	Hourly plus special observations	METAR SPECI	i) Wind and Runway Visual Range System measurement for wind and visibility at runway. ii) Automatic Weather System at Meteorological Station.	H24	Climatological summaries avbl
KOTA BHARU Sultan Ismail Petra WMKC	Hourly plus special observations	METAR SPECI	i) Low level vertical wind shear observations by means of pilot balloon observations at Meteorological Station 4 times daily. ii) Automatic Weather System at Meteorological Station.	H24	Climatological summaries avbl
IPOH Sultan Azlan Shah WMKI	Hourly plus special observations	METAR SPECI	i) Automatic Weather System at Meteorological Station	H24	Climatological summaries avbl

MALACCA Malacca WMKM	Hourly plus special observations	METAR SPECI	i) Wind and Runway Visual Range System measurement for wind and visibility at runway. ii) Automatic Weather System at Meteorological Station.	H24	Climatological summaries avbl
JOHOR BAHRU/ Senai International WMKJ	Half hourly plus special observations	METAR SPECI	i) Wind and Runway Visual Range System measurement for wind and visibility at runway. ii) Automatic Weather System at Meteorological Station.	H24	Climatological summaries avbl
KUALA TERENGGANU Sultan Mahmud WMKN	Hourly plus special observations	METAR SPECI	i) Automatic Weather System at Meteorological Station.	H24	Climatological summaries avbl
KERTEH Kerteh WMKE	Hourly plus special observations	METAR SPECI	i) Automatic Weather System at Meteorological Station.	H24	Climatological summaries avbl
BUTTERWORTH Butterworth WMKB	Hourly plus special observations	METAR SPECI	i) Wind and Runway Visual Range System measurement for wind and visibility at runway. ii) Automatic Weather System at Meteorological Station.	H24	Climatological summaries avbl
Name Of Station Location Indicator	Type And Frequency Of Observation	Types Of MET Reports	Observation System and Site(s)	Hours Of OPS	Climatological Information
1	2	3	4	5	6
KOTA KINABALU Kota Kinabalu WBKK	Half hourly plus special observations	METAR SPECI TREND	i) Low level vertical wind shear observations by means of pilot balloon observations at Meteorological Station 4 times daily. ii) Automatic Weather System at Meteorological Station.	H24	Climatological summaries avbl
LABUAN Labuan WBKL	Hourly plus special observations	METAR SPECI	i) Wind and Runway Visual Range System measurement for wind and visibility at runway. ii) Automatic Weather System at Meteorological Station.	H24	Climatological summaries avbl
TAWAU Tawau WBKW	Half hourly plus special observations	METAR SPECI	i) Wind and Runway Visual Range System measurement for wind and visibility at runway. ii) Automatic Weather System at Meteorological Station.	H24	Climatological summaries avbl
SANDAKAN Sandakan WBKS	Hourly plus special observations	METAR SPECI	i) Low level vertical wind shear observations by means of pilot balloon observations at Meteorological Station 4 times daily. ii) Wind and Runway Visual Range System measurement for wind and visibility at runway. iii) Automatic Weather System at Meteorological Station.	H24	Climatological summaries avbl
KUDAT Kudat WBKT	Hourly plus special observations	METAR SPECI	i) Automatic Weather System at Meteorological Station.	H24	Climatological summaries avbl

Name Of Station Location Indicator	Type And Frequency Of Observation	Types Of MET Reports	Observation System and Site(s)	Hours Of OPS	Climatological Information
1	2	3	4	5	6
KUCHING Kuching WBGG	Half hourly plus special observations	METAR SPECI TREND	i) Low level vertical wind shear observations by means of pilot balloon observations at Meteorological Station 4 times daily. ii) Wind and Runway Visual Range System measurement for wind and visibility at runway. iii) Automatic Weather System at Meteorological Station.	H24	Climatological summaries avbl
MIRI Miri WBGR	Hourly plus special observations	METAR SPECI	i) Wind and Runway Visual Range System measurement for wind and visibility at runway. ii) Automatic Weather System at Meteorological Station.	H24	Climatological summaries avbl
BINTULU Bintulu WBGB	Hourly plus special observations	METAR SPECI	i) Wind and Runway Visual Range System measurement for wind and visibility at runway. ii) Automatic Weather System at Meteorological Station.	H24	Climatological summaries avbl
SIBU Sibu WBGS	Hourly plus special observations	METAR SPECI	i) Wind and Runway Visual Range System measurement for wind and visibility at runway. ii) Automatic Weather System at Meteorological Station.	H24	Climatological summaries avbl

4. TYPES OF SERVICES

4.1 Meteorological Offices at KL International Airport Sepang and Kota Kinabalu International Airport operate throughout the 24 hours and provide the following services to aviation:

- a) Full meteorological documentation and briefing for all international and domestic flights operating out of KL International Airport Sepang and Kota Kinabalu International Airport;
- b) Aerodrome forecast and warning;
- c) Meteorological information for ATS;
- d) Meteorological services for in-flight aircraft;
- e) Tropical storm and volcanic ash advisory and warning;
- f) Forecast of lowest QNH for the Kuala Lumpur and Kota Kinabalu FIRs;
- g) Meteorological information for all international and domestic flights operating out of any major airports.
- h) Search and Rescue (SAR)

4.2 The Dependent Meteorological Offices at Subang and Labuan function throughout the 24 hours but meteorological briefing is available only during the period 0000 - 0900 UTC (Subang) and 2200 - 1400 UTC (Labuan). Outside these hours, meteorological documentation for international and domestic flights could be supplied by KL International Airport, Sepang or Kota Kinabalu meteorological offices, provided that at least 3 hours advance notice is given.

4.3 Similarly, meteorological documentation for international and domestic flights from other aerodromes could be supplied by KL International Airport or Kota Kinabalu meteorological offices, provided that at least 3 hours advance notice is given.

4.4 Details of the documents supplied for each flight are determined by agreement between the operator and meteorological offices. In general, the meteorological documentation for international flights contains significant weather chart, copies of the most up-to-date wind velocity and temperature for standard flight levels. Appropriate en-route, destination and alternate aerodrome forecasts are supplied, forecast data for take-off, climb and descent; as well as advisories are also included in the documentation.

4.5 Domestic flights are supplied with significant weather chart and tabular winds and temperature data up to FL 360 for selected locations. A compilation of regional aerodrome forecasts are also given.

4.6 Routine aerodrome forecasts received from other meteorological offices are incorporated in the flight documentation without modification. In the event that these forecasts are not received, a provisional forecast may be prepared by the Meteorological Office, on request. However, no provisional aerodrome forecast will be issued for the aerodrome for which no real time data are available.

4.7 Landing forecasts of the TREND type are issued with the routine and selected special reports to aircraft inbound for Kuala Lumpur, Penang, Butterworth, Kuantan, Kuching and Kota Kinabalu Airport throughout 24 hours of the day.

5. NOTIFICATION REQUIRED FROM OPERATORS

5.1 It is the responsibility of the operator or its local representative or the pilot-in-command to notify the meteorological office of flights for which forecasts are required. As much prior notice as possible should be given regarding flight schedule and any amendment thereof. For any unscheduled, delayed or retimed international flights, meteorological documentation could only be provided with at least 3 hour advance notice given to the meteorological office.

6. AIRCRAFT REPORTS

- 6.1 Aircraft meteorological observations shall be made at ATS/MET reporting points and transmitted within Kuala Lumpur and Kota Kinabalu FIRs. They should also be recorded in the AIREP form (ICAO model AR) and handed in to the meteorological office post flight except when:
- a) the flight duration is less than 2 hours, or
 - b) the altitude of the flight path is less than 5000 ft, or
 - c) the aircraft is less than 1 hour flying time from the next intended point of landing.
- 6.2 The position of the mean wind or spot wind to the nearest whole degree latitude and longitude, shall be recorded and transmitted in flight.

ATS ROUTE	AIRCRAFT ATS/MET REPORTING POINT IN THE KUALA LUMPUR AND KOTA KINABALU FIRs
BRAVO 348	OSANU (074124N 1171736E)
MIKE 522	NODIN (081100N 1161142E)
MIKE 754	SUMLA (080242N 1160054E)
MIKE 758	OLKIT (045012N 1115118E)
MIKE 772	ASISU (055906N 1132048E)
NOVEMBER 571	IGOGU (073101N 0942500E)

7. VOLMET SERVICE

Name Of Station	CALL SIGN Identification (EM)	Frequency	Broadcast Period	Hours Of Service	Aerodromes Included	Contents & Format Of REP and FCST & Remarks
1	2	3	4	5	6	7
SINGAPORE	SINGAPORE RADIO (A3J)	6676KHz (1230-2230) 11387KHz (2230-1230)	H + 20 to H + 25 and H + 50 to H + 55	H24	SINGAPORE (1) SINGAPORE (2) KUALA LUMPUR (3), (4) SOEKARNO-HATTA (3), (4) KUCHING (3), (4) BRUNEI (3), (4) KOTA KINABALU (3), (4) DEN PASAR (3), (4) PENANG (3), (4) SINGAPORE (5) KUALA LUMPUR (4) SINGAPORE (6) KUALA LUMPUR (4), (7) SOEKARNO-HATTA (4), (7) KUCHING (4), (7) BRUNEI (4), (7) KOTA KINABALU (4), (7) DEN PASAR (4), (7) PENANG (4), (7) SINGAPORE (5) KUALA LUMPUR (4)	METAR SPECI SIGMET METAR METAR METAR METAR METAR METAR METAR TAF TAF TAF METAR SPECI METAR METAR METAR METAR METAR METAR METAR METAR METAR METAR TAF TAF Plain Language EN. (1) SIGMET Message or "NIL" is transmitted (2) Latest routine or special report between H+00 and H+15, including trend statement; repeated at end of broadcast, time permitting. (3) H+00 (or the previous H+30 report when the H+00 report is not available) including trend statement when appended. (4) As available. (5) Valid for 9 hours. (6) Latest routine or special report between H+30 and H+45, including trend statement: repeated at end of broadcast, time permitting. (7) H+30 (or the H+00 report when the H+30 report is not available) including trend statement when appended.
METAR H+ 00	METAR H + 30	TAF 9 HRS	TAF 24 HRS			
WMKK 23 WMSA WMKP WMKJ WBKK 23 WBGG 23	WMKK 36 WMKP 36 WBKK 36 WBGG 36	WMKK 36	WMKK 36 WMKP 23			

8. SIGMET SERVICE

Name of MWO/ Location Indicators	Hours	FIR Or CTA Served	Type Of SIGMET Validity	Specific Procedures	ATS Unit Served	Additional information
1	2	3	4	5	6	7
KLIA SEPANG WMKKYMYX	H24	Kuala Lumpur FIR	SIGMET/4-6HR	NIL	Subang ATCC	Advisories of volcanic ash and tropical cyclone, if received, will be sent to AIS, Control Tower, ATCC and Operators.
KOTA KINABALU WBKKYMYX	H24	Kota Kinabalu FIR	SIGMET/4-6HR	NIL	Kota Kinabalu ATCC	Advisories of volcanic ash and tropical cyclone, if received, will be sent to AIS, Control Tower, ATCC and Operators.

9. OTHER AUTOMATED METEOROLOGICAL SERVICES

Nil.

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