Kenya Civil Aviation Authority
Efficiently Managing Air Safety

Advisory Circular

CAA-AC-MET005A

December 2025

GUIDANCE ON AIRCRAFT METEOROLOGICAL OBSERVATIONS AND REPORTING

1.0 PURPOSE

1.1 This Advisory Circular provides guidelines to ensure meteorological observations made by pilots during flight are relayed by Air Traffic Controllers (ATC) to the meteorological office as source of required atmospheric data critical for preparation of meteorological messages such as SIGMET and other significant warnings and alerts necessary for safety of aircraft operations as prescribed the Civil Aviation (Meteorological Service for Air Navigation) Regulations, as amended.

1.2 This advisory Circular supersedes CAA-AC-MET-005 issued in December 2024.

2.0 REFERENCES

2.1 The Civil Aviation (Meteorological Service for Air Navigation) Regulations.
2.2 ICAO DOC. 8896 - Manual of Aeronautical Meteorological Practice.
2.3 Annex 3 - Meteorological Service for International Air Navigation

3.0 GUIDANCE AND PROCEDURES

3.1 General

3.1.1 The Aeronautical Meteorological Service Provider (AMSP) in coordination with Air Traffic Services (ATS) shall arrange for observations to be made by aircrafts operating in Kenya, to record and report the observations in accordance with the Civil Aviation (Meteorological Service for Air Navigation) Regulations.

3.1.2 The Civil Aviation (Meteorological Service for Air Navigation) Regulations require aircraft observations to be undertaken as;

3.1.2.1 Routine aircraft observations during en-route and climb-out phases of the flight; and

3.1.2.2 Special and other non-routine aircraft observations during any phase of the flight.

3.2 Reporting of Aircraft Observations during Flight

3.2.1 Aircraft observations shall be reported using the following means:

3.2.1.1 *Air-ground data link.* This shall be the preferred mode of reporting, applicable both for routine and special and other non-routine aircraft observations; and

3.2.1.2 *Voice communication.* This may be used only if the air-ground data link is not available or appropriate and is applicable only for special and other non-routine aircraft observations.

3.2.2 Aircraft observations shall be reported during flight at the time the observation is made or as soon thereafter as may be practicable.

3.3 Special and other non-routine Aircraft observations

3.3.1 Special aircraft observations are required to be made by all aircraft operating on international air routes whenever the following conditions are encountered or observed:

3.3.1.1 Turbulence that is:
(1) severe; or
(2) moderate;

3.3.1.2 Icing that is:
(1) severe; or
(2) moderate;

3.3.1.3 Severe mountain wave; or Thunderstorms, *without hail*, that are:
(1) obscured; or
(2) embedded; or
(3) widespread; or
(4) in squall lines;

3.3.1.4 Thunderstorms, with hail, that are:
(1) obscured; or embedded;
(2) widespread; or in squall lines;

3.3.1.5 Heavy dust storms or heavy sandstorms; or

3.3.1.6 Volcanic ash cloud; or

3.3.1.7 Pre-eruption volcanic activity or volcanic eruption.

3.3.2 Pre-eruption volcanic activity in this context means unusual and/or increasing volcanic activity which could presage a volcanic eruption.

3.3.3 Special air-reports of turbulence and icing during climb-out and approach are especially important, since no satisfactory method of observing these phenomena from the ground is available at most Meteorological Offices.

3.4 Other non-routine observations

3.4.1 Other non-routine aircraft observations shall be made when meteorological conditions are encountered which are different from those listed under 3.3.1 (e.g. wind shear) and which, in the opinion of the pilot-in-command, may affect safety or markedly affect the efficiency of aircraft operations. These observations are to be made through voice communications by advising the appropriate ATS unit as soon as practicable. In the case of wind shear reports:

3.4.1.1 The aircraft type must be included; and

3.4.1.2 Pilots shall inform appropriate ATS units as soon as practicable if wind shear conditions forecasted by the Meteorological office are not encountered.

3.5 Content of Air-reports

3.5.1 A report consisting of a position report and meteorological information shall be called a "routine air-report". Reports containing special aircraft observations are called "special air-reports" and, in most cases, constitute a basis for the issuance of SIGMET messages.

3.5.2 When voice communications are used, the elements contained in special air-reports are as follows:

Message type designator

Section 1 (position information)

1) Aircraft identification
2) Position or latitude or longitude
3) Time
4) Level or range of levels

Section 2 (meteorological information)

1) Condition prompting the issuance of a special air-report (one condition selected from list in 3.3.1)

3.6 Criteria for reporting meteorological and related parameters in automated air-reports

3.6.1 When air-ground data link is used, the wind direction and speed, air temperature, turbulence and humidity to be included in automated air-reports are reported in accordance with the Civil Aviation (Meteorological Service for Air Navigation) Regulations.

3.6.2 ***Exchange of air-reports;*** the meteorological authority and the ATS authority shall establish appropriate arrangements to ensure special air-reports reported to ATS units by aircraft in flight are transmitted without delay to the associated meteorological watch office (MWO).

3.6.3 ***Additional exchange of special air-reports beyond MWOs:***

Special air-reports are not normally exchanged regionally beyond the MWO. However, further dissemination is required in the following circumstances:

3.6.3.1 When a special air-report is received but the forecaster considers that the phenomenon causing the report is not expected to persist and does not warrant issuance of a SIGMET, the special air-report should nevertheless be disseminated in the same way that SIGMET messages are disseminated, i.e. to MWOs and other meteorological offices in accordance with AFI regional air navigation agreement;

3.6.3.2 Special air-reports of pre-eruption volcanic activity, volcanic eruption or volcanic ash cloud shall be transmitted to the volcanic ash advisory centres (VAACs).

3.7 Recording and post-flight reporting of aircraft Observations of volcanic activity

3.7.1 Special aircraft observations of pre-eruption volcanic activity, volcanic eruption or volcanic ash cloud are the only type of air-reports that requires a post-flight report, which should be recorded using the special air-report of volcanic activity form. When volcanic activity is reported, such reports should be included with the flight documentation provided to flight crews operating on routes which could be affected by volcanic ash clouds.

3.7.2 The completed volcanic activity form shall be delivered by the operator or the flight crew member, without delay, to the aerodrome meteorological office or the briefing office.

3.7.3 The completed report of volcanic activity received by an aerodrome meteorological office must be transmitted without delay to the MWO responsible for the provision of meteorological watch for the Nairobi flight information region (FIR) in which the volcanic activity was observed.

3.8 The content of special air-reports received by voice communications by MWOs

3.8.1 The example in table below shows details on the content of special air-reports received by voice communications.

Example. SPECIAL air-reports as recorded on the ground by the MWO concerned

SPECIAL AIREP message

ARS EK812 SEV MTW OBS AT 1215Z N2020W07005 FL180

Meaning: Special air-report from Emirates* flight number EK812. Report refers to a severe mountain wave observed at 1215 UTC, position 20 degrees 20 minutes north and 70 degrees 5

minutes west, at flight level 180. * Fictitious operator

3.8.2 Detailed interpretation of the content of special air-reports received by voice communications by MWOs;

3.8.2.1 **Message type designator -** (ARS)
A message type designator "ARS" is special air-report.

3.8.2.2 **Aircraft identification -** (EK812)
Aircraft call sign reported as one unit without any spaces or hyphens.

3.8.2.3 **Phenomenon prompting a special air-report -** (SEV MTW)
The meteorological phenomenon reported is "SEV MTW" Severe Mountain Wave

Other meteorological phenomenon that shall be reported in the special air-reports are as follows:

1) Severe turbulence as "SEV TURB"
2) Moderate turbulence as "MOD TURB"
3) Severe icing as "SEV ICE"
4) Moderate icing as "MOD ICE"
5) Severe mountain wave as "SEV MTW"
6) Thunderstorm with hail1 as "TSGR"
7) Heavy duststorm or sandstorm as "HVY SS"
8) Volcanic ash cloud as "VA CLD"
9) Pre-eruption volcanic activity or volcanic eruption as "VA" followed, as appropriate, by the name of the volcano ("MT" followed by the volcano name)

3.8.2.4 **Time -** (OBS AT 1215Z)

The time of the aircraft observation, at the position indicated, is shown by "OBS AT" followed by the time in hours and minutes UTC (four figures followed without a space by a "Z").

3.8.2.5 **Position -** (N2020W07005)

Position shall be given in whole degrees latitude and longitude (N or S followed without a space by two figures for latitude, E or W followed without a space by three figures for longitude. Whole degrees and whole minutes, latitude and longitude may also be used (four figures for latitude and five for longitude).

3.8.2.6 **Flight level or altitude -** (FL180)

The flight level shall be shown by an "FL" followed by the actual level (three figures); the altitude is shown by four figures followed without a space by "M" or "FT", as appropriate.

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