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ICAO Regional Guidance on SIGMET

Workshop on the AFI SIGMET Harmonization and Issuance Procedure

Virtual, 9 December 2021

Presented by Met Project 1 PTC: Maluta Tshifaro



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BACKGROUND/Introduction

- The MET Divisional Meeting (2002) formulated recommendation 1/12 b), '*Implementation of SIGMET requirements, which call, inter alia, for the relevant planning and implementation regional groups (PIRGs) to conduct periodic tests on the issuance and reception of SIGMET messages*'
- APIRG conclusion 16/56 calls for SIGMET test advisories to be conducted annually in order to assist the meteorological watch offices to resolve deficiencies related to the preparations, issuance and dissemination of SIGMET Information.
- APIRG/24 Draft Decision 24/27 Approved the AFI SIGMET Guide and the AFI SIGMET Trial procedure to assist States/Organisations in providing SIGMET information in accordance with ICAO SARPs and operational procedures, are approved as contained in Appendix.



Purpose and scope of Regional SIGMET tests

Purpose

- To check the awareness of participating MWOs of the ICAO requirements for the issuance of SIGMET, and
- the adequacy of the existing telecommunication procedures for dissemination of the advisories and SIGMETs
- the compliance of the States' procedures for preparation and dissemination of SIGMET bulletins with the relevant ICAO Standards and Recommended Practices (SARPs) and regional procedures.

Scope

The scope involves issuance of test advisories by the VAAC, Toulouse, and TCAC, La reunion, which disseminate to the corresponding MWOs and the Regional OPMET Data Banks (RODBs)

- Check the interaction between the tropical cyclone advisory centres (TCAC),
- Volcanic ash advisory centres (VAAC), and
- the MWOs in their areas of responsibility.

Where the issuance of **WC** and **WV** SIGMET is being tested, the TEST SIGMET messages initiated by the MWO is normally triggered by a test advisory issued by the respective TCAC or VAAC.



Participating Units (AFI regional SIGMET tests)

Tropical Cyclone Advisory Centres (TCAC):

TCAC, La Reunion

Volcanic Ash Advisory Centres (VAAC):

VAAC, Toulouse

Regional OPMET Data Banks (RODB):

RODB Dakar

RODB Pretoria

Meteorological Watch Offices (MWO):

All MWOs listed in AFI eANP Volume II Part V Table MET II-1, under the responsibility of the corresponding TCACs and VAACs.



The role of the RODBs (AFI regional SIGMET tests)

- Records the reception of the SIGMET test advisories and the corresponding time; and provide a summary table to the VAAC or TCAC with a copy to the Regional Office.
- The monitoring results for **WC**, **WV** and **WS** SIGMET is provided in the form of summaries to the SIGMET test **focal points** provided in the appendix to the SIGMET guide.
- Prepare a consolidated summary report and submit to the ICAO regional offices Dakar and Nairobi.
- The report includes recommendations for improvement of the SIGMET exchange and availability.
- South Africa has the responsibility to issue the triggering message for the SIGMET for other weather phenomena (WS), and
- Display these (SIGMET Test advisories) in both text and graphical format with the use of the Geocentric Information Briefing (GIB) facility.



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- Participating States, for which discrepancies of the procedures or other findings are identified by the tests, are advised by the AFI ICAO Regional Offices and requested to take necessary corrective action.
- The results of the tests are also reported to the AFI Infrastructure and Information Management Sub-Group (IIM/SG) meetings.



Meteorological Watch Office (MWO) responsibilities

- Issues SIGMET to provide timely information on the occurrence or expected occurrence of specified en-route weather and other phenomena in the atmosphere affecting the safety of the flight operations in the MWO's area of responsibility.
- SIGMET provides information concerning the location, extent, intensity and expected evolution of the specified phenomena.
- Information about the provision of SIGMET service, including details on the designated MWO(s), shall be included in the State's Aeronautical Information Publication (AIP) as required by the PANS-AIM – Procedures for Air Navigation Services- *Aeronautical Information Management*, Appendix 2, GEN 3.5.8.
- If a State is temporarily unable to meet its obligations for establishing MWO(s) and for provision of SIGMET, arrangements have to be made for another State to assume this responsibility. Such delegation of responsibilities is to be agreed by the meteorological authority of each State concerned and should be notified by a NOTAM, within the State's AIP and in a letter to the ICAO Regional Office concerned.



Meteorological Watch Office (MWO) responsibilities

- The meteorological authority concerned should ensure that the MWO obligations and responsibilities are clearly defined and assigned to the unit designated to serve the MWO. Corresponding operational procedures should be established and the meteorological staff should be trained accordingly.
- In preparing SIGMET information MWOs should follow the format prescribed in Annex 3, Appendix 6, Table A6-1A. Appendix A of this regional SIGMET guide, includes an enhanced SIGMET specific guidance based on Table A6-1A and provides more specific instructions on how SIGMET should be compiled.
- SIGMET must be issued only for those phenomena listed in Annex 3, Appendix 6, 1.1.4 and only when specified criteria for their intensity and spatial extent are met.
- The MWOs should be adequately equipped in order to be able to identify, analyze and forecast those phenomena for which SIGMET is required.



Air traffic service (ATS) unit responsibilities

- **Close coordination should be established between the MWO and the corresponding ATS unit (ACC or FIC) and arrangements should be in place to ensure:**
 - i. receipt without delay and display at the relevant ATS units of SIGMET issued by the associated MWO;
 - ii. receipt and display at the ATS unit of SIGMETs issued by MWOs responsible for the adjacent FIRs/ACCs if these SIGMETs are required; and
 - iii. transmission without delay by the ATS unit of special air-reports received through voice communication to the associated MWO.
- **SIGMET information should be transmitted to aircraft with the least possible delay on the initiative of the responsible ATS unit, by the preferred method of direct transmission followed by acknowledgement or by a general call when the number of aircraft would render the preferred method impracticable.**
- **SIGMET information transmitted to aircraft-in-flight should cover a portion of the route up to two hours flying time ahead of the aircraft. SIGMET should be transmitted only during the time corresponding to their period of validity.**
- **Air traffic controllers should ascertain whether any of the currently valid SIGMETs may affect any of the aircraft they are controlling, either within or outside the FIR/CTA boundary, up to two hours flying time ahead of the current position of the aircraft. If this is the case, the controllers should at their own initiative transmit the SIGMET promptly to the aircraft-in-flight likely to be affected. If necessary, the controller should pass to the aircraft available SIGMETs issued for the adjacent FIR/CTA, which the aircraft will be entering, if relevant to the expected flight route.**
- **The ATS units concerned should also transmit to aircraft-in-flight the special air-reports received, for which SIGMET has not been issued. Once a SIGMET for the weather phenomenon reported in the special air report is made available this obligation of the ATS unit expires.**



Pilot responsibilities

- **Timely issuance of SIGMET information is largely dependent on the prompt receipt by MWOs of special air-reports. It is essential that pilots prepare and transmit such reports to the ATS units whenever any of the specified en-route hazardous conditions are encountered or observed.**
- **It should be emphasized that, even when automatic dependent surveillance (ADS) is being used for routine air-reports, pilots should continue to make special air-reports.**
- **Pilots should compile special air-reports and disseminate to ATS by air-ground data link as per Annex 3, Appendix 4, 1.2 and *Procedures for Air Navigation Services – Air Traffic Management* (PANS-ATM, Doc 4444), 4.12.3.2, or by voice communication as per Annex 3, Appendix 4, 1.3 and PANS-ATM (Doc 4444), 4.12.3.3.**

Note.— The MWO will compile special air-reports for uplink as per Annex 3, Appendix 6, and as reported using the instructions given PANS-ATM, Appendix 1.



Coordination between MWOs, VAACs, TCACs and State volcano observatories

- Amongst the phenomena for which SIGMET information is required, volcanic ash and tropical cyclones are of particular importance.
- The identification, analysis and forecasting of volcanic ash and tropical cyclones requires considerable scientific and technical resources, normally not available at each MWO,
- VAACs and TCACs have been designated to provide volcanic ash advisories and tropical cyclone advisories respectively to the users and assist the MWOs in the preparation of SIGMETs for those phenomena. Close coordination should be established between the MWO and its responsible VAAC and/or TCAC.
- Information regarding the VAACs and TCACs areas of responsibility and lists of MWOs and ACC/FICs to which advisories are to be sent is provided in the regional ANP FASID Tables MET 3A and MET 3B. Volcanic ash advisories and tropical cyclone advisories are required for global exchange through SADIS and WIFS as they are used by the operators during the pre-flight planning.
- SIGMET information is also required especially for in-flight re-planning. SIGMETs should be transmitted to aircraft-in-flight through voice communication, VOLMET or D-VOLMET, thus providing vital information for making in-flight decisions regarding large-scale route deviations due to volcanic ash clouds or tropical cyclones.
- Information from State volcano observatories is an important part of the process for issuance of volcanic ash advisories and SIGMETs. Information from a State volcano observatory should be in the form of a Volcano Observatory Notification for Aviation (VONA) and include information on significant pre-eruption volcanic activity, volcanic eruptions or the presence of volcanic ash clouds.



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THANK YOU