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North American, Central American and Caribbean Office

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C/CAR WG/3-WP/09

19/02/03

Agenda Item 6: MET Developments

PROPOSED ACTIONS TO IMPROVE AND DEVELOP THE METEOROLOGICAL SERVICES IN THE CENTRAL CARIBBEAN

(Presented by the Secretariat)

SUMMARY

This working paper presents the status of MET matters in the Central Caribbean, based on the results of the COM/MET SIP for the CAR Region, second phase, and the GREPECAS Conclusions and other regional and subregional meetings. In addition, it proposes to the Group to consider additional regional actions to improve and develop the MET services in the Central Caribbean.

References:

- Report of the Ninth Meeting of the CAR/SAM Planning and Implementation Group (GREPECAS/9)
- Report of the Tenth Meeting of the CAR/SAM Planning and Implementation Group (GREPECAS/10)
- Report of the Eleventh Meeting of the CAR/SAM Planning and Implementation Group (GREPECAS/11)
- Final Report of the COM/MET SIP for the CAR Region
- Final Report on the WAFS Task Force Special Meeting (WAFS/TF/SM) of the GREPECAS AERMETSG
- State Letter LT2/7.3.1SA632 – Proposal for amendment of the CAR/SAM FASID (Serial SAM 02/3-MET)
- CAR/SAM ANP Volume II, FASID Part VI-Meteorology, Doc 8733
- Report of the First Central Caribbean Working Group Meeting (C/CAR WG/1)
- Report of the First North American, Central American and Caribbean Directors of Civil Aviation Meeting (NACC/DCA/1)

1. Introduction

1.1 This Working Paper deals mainly with the following matters in the MET field:

- Significant Weather medium level (SWM) Charts for CAR/SAM Regions
- WAFS systems and equipment maintenance

- Communication problems in the OPMET information exchange
- COM/MET Special Implementation Project (SIP)

1.2 The problems of the exchange of operational meteorological information (OPMET information) has been discussed in past ICAO meetings, where amongst other things, it was agreed (Conclusion 7/35 of the CAR/SAM Regional Planning and Implementation Group (GREPECAS) to carry out in the these Regions, controls of the referred exchange in order to detect factors affecting them. In this regard, most of the States/Organizations in the CAR/SAM Regions participated in the controls and the results have been discussed in the meetings of the Aeronautical Meteorology Subgroup (AERMETSG) of the GREPECAS, where specific conclusions to improve the referred exchange were established.

1.3 The First North American, Central American and Caribbean Directors of Civil Aviation Meeting (NACC/DCA/1) was held in Grand Cayman, Cayman Islands from 8-11 October 2002, through its Conclusions 1/1, 1/2 and 1/3 agreed on the need to take action which will contribute to the implementation of the CAR/SAM Regional and CAR Subregional Meetings Recommendations/Conclusions/Decisions. It also agreed the main working guidelines in the MET field as follows:

- Significant weather medium level (SWM) charts for the CAR/SAM Regions;
- Maintenance of WAFS equipment and systems;
- Communications problems regarding OPMET information exchange; and
- COM/MET Special Implementation Project (SIP).

2. Results of the COM/MET Special Implementation Project, second phase

2.1 In this regard, the Ninth Meeting of GREPECAS (GREPECAS/9), through Conclusion 9/7 approved that a Communication and Meteorology Special Implementation Project (COM/MET SIP) second phase, should be carried out for the CAR Region (Central and Eastern Caribbean States/Territories), in order to study and recommend to each State/Organization measures designed to solve promptly problems that affect OPMET information exchange and to provide assistance to States on the correct implementation of SIGMET preparation and dissemination procedures, especially those related to volcanic ash.

2.2 Based on GREPECAS Conclusion 9/7, ICAO Council approved the mentioned project, which should be carried out for the CAR Region. This Project was under a specific ICAO budget and had a first phase (23 July to 17 August 200) for Mexico and the Central American States (Belize, Costa Rica, El Salvador, Guatemala, Honduras and Nicaragua). A second phase was completed (23 September to 29 October 2002) and included the following Central and Eastern Caribbean States/Territories (Antigua and Barbuda, Barbados, Cuba, Dominican Republic, Grenada, Haiti, Jamaica, Martinique (France), Saint Lucia, Saint Vincent and the Grenadines and Trinidad and Tobago). The mission consisted of short visits by the ICAO expert.

2.3 During the missions to the CAR States, meetings were held with the representatives of the AIS, ATS, COM and MET units and discussions were carried out on the responsibilities of and between these operational units regarding the exchange of OPMET data and focused the need to make sure that the meteorological messages:

- a) be prepared in accordance with the established provisions of ICAO Annex 3 – *Meteorological Service for the International Air Navigation/ WMO Technical Regulations [Volume II, Chapter C.3.1] and ICAO Annex 10 – Aeronautical Telecommunications (Volume II, Procedures of Communications); and*
- b) have a global dissemination based on the requirements of the CAR/SAM ANP (*Volume I, Basic ANP, Part IV – Communications, Navigation and Surveillance (CNS) and Volume II, FASID, Part VI- Meteorology*)

2.4 Communication procedures used for the OPMET exchange were analyzed, and their compatibility with ICAO standards and recommended practices were verified. The operative part of the national OPMET data bank available and their contribution as well as the operation of the AFTN system, such as the message switching, the type of circuit used and their operation modality, were verified.

2.5 Likewise, operation of the STAR 4 one way (reception) and two way system, (reception/transmission), which allows the reception at the MET office and transmission to the world area forecast center (WAFC) Washington of the products of the world area forecast system (WAFS) including OPMET information (METAR, SPECIs, TAFs, advisory messages on volcanic ash and tropical cyclones), were verified.

2.6 With respect to the new provisions introduced by Amendment 72 to Annex 3 of ICAO applicable from 1 November 2001, regarding the template for SIGMET messages related to volcanic ash and tropical cyclone advisory messages information, emphasis was made on the provisions on volcanic ash and should be in compliance with the ICAO Annex 3, as well as, the correct use of the established operational procedures of the *Manual on the International Airways Volcano Watch (IAVW) – Operational Procedures and list of Contact Points (Doc 9766)*.

2.7 In this regard, the following objectives were analyzed individually:

- a) The identification of difficulties related to the OPMET information exchange;
- b) the coordination amongst MET units and other operational units in the air navigation field;
- c) to provide assistance on the local and international procedures for the preparation and the dissemination of the SIGMET messages, especially those related to tropical cyclones and volcanic ash; and
- d) to develop recommendations with identified problems aimed at achieving a reliable and efficient OPMET information and its exchange, as well as availability in the States/Territories requiring it, in accordance with requirements of the FASID Table MET 2A – *Exchange of the operational meteorological information and the FASID Table MET 2B – Exchange of SIGMET and special AIREP messages*, of the FASID CAR/SAM Regional Air Navigation Plan (CAR/SAM ANP, Doc 8733).

2.8 A thorough analysis was made of the operation of each of the abovementioned aspects considering the status and expected degree of efficiency, pertinent recommendations were presented to offer a solution to the problems in the referred exchange.

2.9 In order to ensure long- term success of the SIP, the NACC Regional Office as recommended, has proposed a follow-up meeting in the second quarter of 2004. The objective is to review the implementation of the recommendations formulated by the ICAO expert. This meeting should be carried out with the participation of COM and MET specialists from the States/Territories included in the SIP.

2.10 A Report with specific recommendations was submitted to the Civil Aviation Authority of each of the States/Territories visited by the ICAO expert.

2.11 The development of an Action Plan to seek solution for the Recommendations made by the MET expert in the final report, is required.

3. Updating of FASID Tables MET 2 and 2A

3.1 During the C/CAR WG/1 Conclusion 1/29 called for an updating of the abovementioned Tables in order to ensure that they kept up to date.

3.2 The GREPECAS through its permanent review of the Air Navigation Regional Plan, noted the need to update Tables MET 2 and MET 2A, in order that new requirements for OPMET data dissemination to the International Satellite Communication System (ISCS) and the Satellite Distribution System for Aeronautical Information Relating to Air Navigation (SADIS) for the operation of the satellite dissemination systems of the Aeronautical Fixed Service (AFS) introduced by Amendment 72 to Annex 3 be included in the referred tables.

3.3 In this sense, the GREPECAS, at its Tenth Meeting (GREPECAS/10) (Las Palmas, Canary Islands, Spain) formulated Conclusion 10/41, which considered the need to provide continuity to the numbering of FASID MET Tables, and it was agreed to change the numbering, by proposing the amendment to constitute FASID Tables MET 2A, MET 2B, MET 3A, MET 3B and MET 5, and replace the current FASID Tables MET 2, MET 2A, MET 3, Part I, MET 3, Part II and MET 5, respectively.

3.4 In accordance with the procedure for the amendment of the FASID, a deadline was set (September 28, 2001) for the submission of comments, for which no objections to the referred proposal for amendment was raised by Government/Organizations, with the exceptions of some changes proposed by Brazil in relation to the planning of MET services in that State, it is deemed that a regional agreement on the subject was reached and, therefore, the proposal will be incorporated into the FASID.

3.5 The Secretariat supported the processing of the proposed amendment to Part VI – Meteorology of the CAR/SAM Basic ANP, as a follow-up to Brazil, Peru and the United States requirements, as well as to Conclusion 10/41 of the GREPECAS/10 Meeting.

4. MET training needs

4.1 The Air Navigation Commission referred the GREPECAS/10 Report and the associated air navigation working paper (AN-WP/7715) to its working Group on Regional Plans (WG/RPL) for review. The WG/RPL reviewed the report on 13 March 2002 and submitted its views thereon to the Commission in AN-WP/7736, which was reviewed by the Commission on 28 May 2002.

4.2 In reviewing the report of the meeting, the Commission noted that GREPECAS, with the assistance of its contributory bodies, had examined the air navigation matters of the CAR/SAM Regions with the aim of improving the planning for air navigation facilities, services and procedures in the region, as well as fostering their implementation.

4.3 Sharing the concern expressed by GREPECAS, the Commission supported the proposal to implement a joint training project between the International Civil Aviation Organization (ICAO) and the World Meteorological Organization (WMO) to provide short and long term solution to the lack of trained personnel in States in the CAR/SAM Regions in the field of aeronautical meteorology, which Conclusion 10/39 refers. However, the Commission noted that, in accordance with the *Working Arrangements between the International Civil Aviation Organization and the World Meteorological Organization (Doc 7475)*, WMO is the organization responsible for the qualification of meteorological personnel engaged in the provision of meteorological service for international air navigation and as such, this conclusion should be addressed to WMO. Request was addressed to the Secretary General to invite WMO to consider developing and implementing this project in coordination with ICAO.

5. Transition plan for final phase of WAFS in the CAR/SAM Regions

5.1 In this regard, a WAFS Task Force Special Meeting was held from 2-3 April 2002 in Chile. The results were submitted to the GREPECAS Administration Coordination Group (ACG) through the AERMET/SG Secretary. The Conclusions were circulated by the ACG and approved by GREPECAS Members on 7 October 2002.

5.2 Amongst the conclusions, we point out GREPECAS/11 Conclusion 11/71, which calls for the Procurement of WAFS workstations in the CAR/SAM Regions. In looking at the schedule of the Transition Plan to implement the final phase of WAFS in the CAR/SAM Regions as included in **Appendix**, it was proposed that States were to initiate plans to begin the process of procuring new workstations in July 2002. This reminder is to ensure that States are taking appropriate action to procure the necessary equipment in order to comply with the Transition Plan of WAFS.

6. Action by the Meeting

6.1 The Meeting is invited to:

- a) note the summary of the COM/MET SIP results for the CAR Region, based on the information and considerations contained in paragraphs 2.1 to 2.9, and propose actions to develop a plan to assist the States/Territories in solving the problems detected;

- b) note the specific actions developed for amendment of the FASID MET Tables, contained in paragraphs 3.1 to 3.5 and propose any other amendment considered pertinent;
- c) note the present status of the Conclusions 1/29 to 1/33 of the C/CAR WG/1, related to the updating of the CAR/SAM FASID MET Tables;
- d) consider proposing additional actions to contribute to the training of MET personnel, taking into consideration paragraphs 4.1 to 4.3; and
- e) consider proposing additional actions to comply with the transition plan of the final phase of WAFS in the Central Caribbean based on the considerations under paragraphs 5.1 and 5.2.

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APPENDIX**TASKS TO BE COMPLETED TO SUPPORT TRANSITION TO THE FINAL PHASE OF WAFS**

Task	Description of task	Date
1	WAFC Washington to provide global gridded W/T data in GRIB code	Completed
2	WAFC Washington to produce SWH charts	Completed
3	ICAO NACC and SAM Regional MET officers survey states ability to produce wind/temperature charts from GRIB data for the purpose of assessing training needs.	Completed
4	ICAO to coordinate with States and users if there is validated regional requirement for SWM Charts for limited geographical area.	Completed
5	U.S. to provide BUFR decode software to the workstation manufactures	Completed
6	Provide the technical functionality specifications for the purpose of acquiring new WAFS workstations	June 2002
7	Buenos Aires and Brasilia RAFC close	July 2002
8	States to initiate a process to procure new workstations, service agreements, and training to support these stations with a planned installation of workstations by November 2003.	July 2002
9	Establishment of back-up distribution arrangements for WAFS products	November 2002
10	Training to be completed on existing workstations provided to States who need assistance to produce wind/temperature charts from GRIB data in support of Task 14*	May 2003
11	Provision of test BUFR coded SIGWX forecasts on satellite broadcasts	mid-2002
12	All states that receive GRIB products capable of converting GRIB forecasts to Wind/Temp charts*	mid-2003
13	Training in the operational conversion of BUFR to SIGWX charts	late-2003 to late-2004
14	Removal of T4 wind/temperature charts from satellite broadcast*	mid-2003
15	Satellite distribution of global SWH and SWM in BUFR format	late-2003
16	States have the ability to operate the decoding and presentation software to convert BUFR SIGWX forecasts into operational graphical products	mid-2004
17	Removal of T4 SIGWX products from satellite broadcast	late-2004
WAFS Transition to Final Phase Completed		

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