

INTERNATIONAL CIVIL AVIATION ORGANIZATION
CAR/SAM REGIONAL AIR NAVIGATION PLANNING AND IMPLEMENTATION GROUP
(GREPECAS)

FOURTH MEETING OF THE AERONAUTICAL METEOROLOGY SUBGROUP
(AERMETSG/4)

(Mexico City, 22 to 26 May 2000)

Item 10: Training of aeronautical meteorological personnel

(Presented by Secretariat)

Summary

This working paper contains information related with the training and human resources requirements in the MET area of States of CAR/SAM Regions. It also includes the results of the survey carried out regarding such needs.

References:

1. GREPECAS/6, GREPECAS/7 and GREPECAS/8 Meeting Reports
2. RAN CAR/SAM/3 Meeting Report

1. Introduction.

1.1 The Meeting will remember that the problems related with the training and sufficient human resources requirements in the aeronautical meteorology area have been widely discussed during RAN CAR/SAM (1976), RAN CAR/SAM/2 (1989) and RAN CAR/SAM/3 (1999) meetings, in all AERMETSG meetings as well as during the last three GREPECAS meetings. Nevertheless, and in spite of the recommendations and conclusions adopted during same, no sufficient measures have been taken in order to correct the deficiencies of duly trained aeronautical meteorological personnel and the problems observed regarding lack of human resources to render meteorological service in various States of CAR/SAM Regions still persist.

2. Discussion

2.1 Despite the information given in previous ICAO meetings about the existence of various CAR/SAM regional training centres which provide advanced training in aeronautical meteorology to national personnel and in some cases, to personnel of other nationalities based on bilateral agreements with the concerned State, it can be noted with concern that various CAR/SAM States still face difficulties regarding advanced training for meteorological forecasters as well as for specialists on installation, maintenance and repair of modern electronic equipment.

2.2 In light of the foregoing, the Meeting could convene about the impossibility of continuing emphasizing the importance for the aeronautical meteorological services to count with sufficient specialists duly qualified in aeronautical meteorology as well as in the installation and maintenance of equipment, in order to adequately serve aeronautical meteorological facilities and services, if States do not adopt appropriate measures in order to correct such shortcomings and deficiencies. Within this context, the Meeting could reflect upon the most relevant GREPECAS Conclusions, which have not yet been implemented by the majority of States of the CAR/SAM Regions and which are included as **Appendix A** to this working paper for better reference.

2.3 Likewise, the Meeting will recall that GREPECAS/8 dealt with this subject with great concern and adopted Conclusion 8/29 - Regional CAR/SAM Technical Cooperation Project on MET training, in view of the urgent requirement to achieve efficient mechanisms to solve the problems on training in aeronautical meteorology faced by the majority of States of the CAR/SAM Regions. A draft of the project is included as **Appendix B** to this working paper for the Subgroup's consideration.

2.4 Based on the discussions held during RAN CAR/SAM/3 under Order of Business item 13, Conclusion 13/11 - Training about volcanic ash, was adopted, and the Meeting was informed about MWOs plans to organize, in coordination with ICAO, workshops in the CAR/SAM Regions regarding the assignment and cost recovery of aeronautical meteorological services, covering both financial and technical aspects. Likewise, Recommendations 13/16 and 13/17 related with meteorological training and training on new meteorological codes respectively, were formulated.

2.5 Aiming to obtain immediate solutions to the training problems faced by MET area, the Meeting could consider the convenience of utilizing among the CAR/SAM Regions, a method which has given very good results in some States. This is related to the interchange of visits between technical MET personnel, helping in such way to reinforce the technical operational procedures in the MET area. Within this context, the Meeting could consider following project of Conclusion:

PROJECT OF CONCLUSION 4/

**INTERCHANGE VISITS BETWEEN MET
TECHNICAL PERSONNEL IN STATES OF
CAR/SAM REGIONS**

That the States of the **CAR/SAM** Regions, in coordination with ICAO NACC and SAM Offices, take the necessary arrangements to carry out interchange visits between MET technical personnel in order to help to reinforce technical operational procedures and to take measures related to the adequate implementation of facilities and services in the MET area.

2.6 The Meeting will also recall that both, AERMETS G/3 and GREPECAS/8 welcomed the information given by the United States regarding the concept of an international WAFS training office, which would operate through the U.S. National Weather Service (NWS)/Aviation Weather Center (AWC) in Kansas City. In such sense and in view of the critical training circumstances in the MET area faced by various States of the CAR/SAM Regions, the Meeting may wish to review the necessary means and actions to implement the training programme proposed by the NWS International Activities Office. Furthermore, the Meeting could consider training provided in this office among the frame of the CAR/SAM Regional Technical Cooperation Project for MET training (Conc. 8/29, GREPECAS/8) mentioned in paragraph 2.3.

3. Requirements on training and human resources in the MET area

3.1 In order to evaluate the immediate and future requirements on training and human resources in the MET area, during 1995-1996 the Task Force on problems affecting the provision of MET services of the AERMETS G carried out a survey among the States of the CAR/SAM Regions, which has been updated. The corresponding results up to date, are shown under **Appendix C**.

3.2 Having in mind that the Plan of requirements on human resources of the SAM Region States for the 2000-2004 quinquennium has been updated during the Third Meeting of Directors of Aeronautical Instruction Centres (Santafé de Bogotá, July of 1999) and that only Colombia has indicated their instruction needs in the MET area, the Meeting is asked to complete the form used for said Plan in the MET area (**Appendix D**). Such form can be filled out during the meeting or be returned to ICAO's NACC or SAM Offices respectively, no later than ten (10) days after its closing date.

4. Action to be taken by AERMETS G

4.1 The Meeting is invited to:

- a) consider the information contained in this working paper; and
- b) adopt pertinent actions according to paragraphs 2.2, 2.3, 2.5, 2.6 and 3.2.

APPENDIX A

**CONCLUSION 6/40 CO - ORDINATION BETWEEN THE NATIONAL
METEOROLOGICAL SERVICES AND THE AERONAUTICAL
AUTHORITY**

That CAR/SAM States be urged to carry out the relevant co-ordination in order that the personnel providing meteorological services to international air navigation participate in the aeronautical meteorology courses/seminars conducted by WMO.

CONCLUSION 7/41 TRAINING OF AERONAUTICAL METEOROLOGISTS

That,

- a. the Civil Aviation Administrations make all efforts to train enough aeronautical meteorologists Classes I, II, III and IV, satellite image interpretation, meteorological radar information interpretation and for the installation and maintenance of high technology meteorological equipment, in order to adequately cover the aeronautical meteorology installations and services, taking into consideration the following:
 - i) the Civil Aviation Training Centres, incorporated or which plan to incorporate themselves to the TRAINAIR Programme, consider training needs in the aeronautical meteorology field, in order that they develop TRAINAIR courses for Classes III and IV;
 - ii) while these courses are developed through the TRAINAIR Programme, States continue training personnel in these areas under the traditional methodology, in order to cover their immediate needs;
 - iii) States take into account the offer made by the Civil Aviation Technical Schools and/or Meteorological Training Centres of the CAR/SAM Regions, to train aeronautical meteorological personnel; and
 - iv) States which require training of aeronautical meteorological personnel abroad, take into consideration the possibility of financing fellowship under an ICAO technical cooperation project.
- b) ICAO, in consultation with WMO, study the overall situation, in order to see the possibility of providing training courses to aeronautical meteorological personnel, including courses for aeronautical meteorologists Classes I and II and for personnel specialized in the installation and maintenance of high technology meteorological equipment.

**SURVEY ON TRAINING NEEDS IN THE AERONAUTICAL
METEOROLOGY FIELD (MET)**

**ENCUESTA SOBRE NECESIDADES DE CAPACITACIÓN EN EL ÁREA DE
METEOROLOGÍA AERONÁUTICA (MET)**

STATE/ESTADO	CLASS/ CLASE I	CLASS/ CLASE II	CLASS/ CLASE III	CLASS/ CLASE IV	NEPHANALYSIS/N EFOANALISIS	MAINTENANCE/ MANTENIMIENTO	SUPPORT/ APOYO AIS/ATS/COM	OTHER/ OTROS
ANGUILLA	-	-	X	X	-	X	X	-
ARGENTINA	-	-	-	-	-	-	-	-
ARUBA	X	X	-	-	-	-	-	-
BARBADOS	-	-	-	-	-	X	-	-
BELIZE	-	-	-	-	-	-	-	-
BOLIVIA	-	X	X	-	X	X	-	-
BRASIL	-	-	-	-	-	-	-	-
CHILE	-	-	-	X	-	X	-	-
COLOMBIA	X	X	X	X	X	X	X	-
COSTA RICA	X	X	X	X	X	X	X	-
CUBA	X	-	-	-	X	-	-	-
CURACAO (N. ANTILLES)	X	X	-	-	-	-	-	-
ECUADOR	X	X	-	-	X	X	X	-
FRENCH GUIANA	-	X	X	-	X	-	-	-
GRENADA	X	X	X	X	-	-	X	a) ¹
GUATEMALA	X	X	X	X	X	X	X	-
GUYANA	X	X	X	X	X	-	-	-
HONDURAS	X	X	X	X	X	X	-	-
JAMAICA	X	X	X	X	X	X	X	-
MÉXICO	-	-	X	X	-	X	-	-
NICARAGUA	-	X	-	-	-	-	X	-
PANAMÁ	X	X	-	-	X	X	-	-
PERÚ	X	X	X	-	X	X	X	-
REP. DOMINIC.	X	X	X	X	X	X	X	-
SAINT VINCENT	-	-	X	X	-	X	-	-
SURINAME	X	X	-	-	-	-	X	-
TRINIDAD AND TOBAGO	X	X	X	X	-	X	X	-
UNITED STATES	-	-	X	-	-	-	-	-
URUGUAY	X	X	X	X	X	X	X	-
VENEZUELA	X	X	X	-	-	-	X	-

**SURVEY ON HUMAN RESOURCES NEEDS IN THE AERONAUTICAL
METEOROLOGY FIELD (MET) ÁREA
ENCUESTA SOBRE NECESIDADES DE POTENCIAL HUMANO EN EL ÁREA
DE METEOROLOGÍA AERONÁUTICA (MET)**

STATE/ESTADO	CLASS/ CLASE I	CLASS/ CLASE II	CLASS/ CLASE III	CLASS/ CLASE IV	NEPHANALYSIS/ NEFOANALISIS	MAINTENANCE/ MANTENIMIENTO	SUPPORT/ APOYO AIS/ATS/COM	OTHER/ OTROS
ANGUILLA	-	-	1	2	-	1	-	-
ARGENTINA	10	17	39	41	10	6	-	-
ARUBA	*	*	-	-	-	-	-	-
BARBADOS	*	-	-	-	-	*	-	-
BELIZE	*	*	-	*	-	-	-	-
BOLIVIA	2	8	-	-	4	2	-	-
BRASIL	*	-	-	-	-	-	-	-
CHILE	-	-	-	-	-	-	-	1*
COLOMBIA	2	20	10	12	10	15	-	-
COSTA RICA	*	*	-	-	-	-	-	-
CURACAO (N. ANTILLES)	*	*	-	-	-	-	-	-
CUBA	-	-	-	-	-	-	-	-
ECUADOR	*	*	-	-	*	*	-	2*
GRENADA	2	1	1	1	-	-	-	-
GUATEMALA	*	*	*	*	*	*	*	-
GUYANA	2	6	5	9	9	-	-	-
HONDURAS	*	*	*	*	*	*	-	-
JAMAICA	2	3	3	6	6	3	-	-
MÉXICO	*	*	*	*	2	*	-	-
NICARAGUA	-	*	-	-	-	-	*	-
PANAMÁ	-	4	6	-	2	1	-	-
PARAGUAY	10	16	18	35	-	-	-	-
PERÚ	-	-	-	36	8	6	-	3*
REP. DOMINIC.	*	*	*	*	*	*	*	-
SAINT VINCENT	-	-	*	2	-	1	-	-
SURINAME	2	8	-	-	-	-	-	4*
TRINIDAD AND TOBAGO	8	3	3	6	-	2	-	-
UNITED STATES	-	-	-	-	-	-	-	-
URUGUAY	1	2	2	2	1	1	-	5*
VENEZUELA	3	8	-	-	5	10	-	-

- * Hay requerimiento, pero no indican la cantidad.
- 1 * Requieren actualizar los conocimientos de acuerdo con las últimas técnicas.
- 2 * Meteorología operativa.
- 3 *
 - Especialización en pronóstico numérico para las zonas tropicales;
 - Mantenimiento de estaciones automáticas y otros equipos;
 - Administración de servicios meteorológicos aeronáuticos;
 - Especialidades en meteorología aeronáutica para los Meteorólogos Clases I y IV;
- 4 * Formación especializada en la interpretación de imágenes meteorológicas satelitales.
- 5 *
 - Especialización en aplicaciones de los satélites para personal meteorológico de las Clases I y II;
 - Especialización en la interpretación de la información del radar meteorológico aplicada a las predicciones a corto plazo para el área terminal.

PLAN OF REQUIREMENTS OF HUMAN RESOURCES AND TRAINING REGARDING
CIVIL AVIATION FOR THE PERIOD 2000-2004

STATE: _____

ICAO Nr.	SPECIALITIES	LOCAL TRAINING					TRAINING ABROAD					REMARKS
		2000	2001	2002	2003	2004	2000	2001	2002	2003	2004	
31	MET assistant-Observer (Class IV WMO)											
32	MET assistant - Verbal exposition (Class III WMO)											
33	MET forecaster (Class II WMO)											
34	Meteorologist (Class I WMO)											
39	Other MET											

030	Aeronautical meteorological services	MET
031	Aeronautical meteorological assistant (MET instruments, surface observations, design and reports on aviation meteorology) - (WMO Class IV)	MET IV
032	Aeronautical meteorological assistant (MET instruments, observations of upper atmosphere layers) - (WMO Class III)	MET III
033	In charge of aeronautical meteorology/Forecaster (WMO Class II)	MET II
034	In charge of aeronautical meteorology/Meteorologist (WMO Class I)	MET I
039	Other courses	MET OTH

- END -