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COMMISSION FOR INSTRUMENTS AND METHODS  
OF OBSERVATION

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CIMO MANAGEMENT GROUP  
Second session

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**Report on the OPAG-CB**

**(Submitted by the Mr E. Bazira, OPAG-CB Co-chair)**

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**Summary and purpose of document**

This document summarizes activities of the Expert team on Training Activity and Training Material.

**Action proposed**

The management group is invited to review the activities of the ET and to comment on its future plan.

## **Report of the Chairman of the Expert Team on Training Activities and Training Material**

### **Training Activities and Training Material**

1. Two Training Workshops on Upper-air Observations for RA I were organized for English and French speaking African countries. The Training Workshops were aimed at improving the knowledge and skills of senior operational personnel in-charge of the national upper-air networks. They had both theoretical and practical lessons. The theory covered topics, such as basic introduction to radiosonde soundings and presently used technology and procedures before launching radiosondes. A review of presently used technology was complemented by information on possible future systems, such as wind profilers, RASS and radiometers. A set of the guidance and training material was provided to participants on a CD to assist them in the follow-up training at national levels.

### **The Training Workshop on Upper-air Observations for RA I English speaking countries**

2. The Training Workshop on Upper-air Observations for RA I English speaking countries was hosted by the Botswana Meteorological Service, in Gaborone, from 7 to 11 April 2003. The theory was conducted in the training premises of the Botswana Productivity Center and the field practice was performed at the Upper-air station near the Gaborone airport. The Botswana Meteorological Service provided logistic support complemented by two additional ground receiving and processing stations. The UK Met Office and Vaisala Oyj provided ground receiving stations and consumables. During the demonstrations, four RS80, two RS90 and three RS92 radiosondes were launched

3. Three lecturers from the UK Met Office and one from USA NWS Training Centre as well as two representatives from the HMEI Association and two Botswana NMS' staff members prepared and delivered lectures and conducted practical lessons according to the Programme. Thirty-four trainees from twenty countries participated at the Workshop.

### **The Training Workshop on Upper-air Observations for RA I French speaking countries**

4. Training Workshop on Upper-air Observations for RA I French speaking countries was hosted by Morocco Meteorological Service in Casablanca from 1 to 5 December 2003. The theory was conducted in the training premises of Morocco Meteorological Service and the practical part was performed at the Casablanca Upper-air station. Morocco Meteorological Service provided necessary infrastructure at both sites for the successful outcome of the Workshop. In addition additional ground receiving and processing stations were provided by VAISALA Oyj and MODEM. During the practical demonstration, two Vaisala RS80, four Vaisala RS92 and three Modem M2K2 radiosondes were launched. Due to availability of additional ground receiving and processing stations participants were able to access training facilities and acquaint themselves with the new equipment.

5. Based on the lecture notes prepared by UK Met Office and USA NWS Training Centre, lecturers from Canada, France and Switzerland, Morocco and the Association of HMEI updated and delivered lectures and conducted practical lessons. Twenty-one trainees from nineteen countries participated in the Workshop.

### **Future Training Workshop**

6. The Fifty-sixth Session of the Executive Council The Council asked CIMO to continue organizing capacity building workshops also in other Regions and requested the Secretary-General to allocate necessary resources as far as possible. The RMTTC Buenos Aires in Argentina offered to host the Training Workshop on Upper-air Observations in RA III. The preparations already started for holding the workshop and communication is on with Argentina in identifying potential

lecturers and to provide translation of training materials into Spanish. So far only two lecturers were identified for the practical part of the training, no suitable persons for the theoretical part was identified. In the worst case, UK Met Office might provide two resource persons and simultaneous interpretation would be provided into Spanish. Support from HMEI will also be requested in time. Update of the standard training material will be done in May by UK Met Office.

7. The EC-LVI welcomed the proposal of ASECNA to organize, in collaboration with ASECNA, instrument training in EAMAC also for non-ASECNA. No follow-up was done, taking into account limited financial resources.
8. During the Tenth International Pyrheliometer Comparison, (IPC-X), Davos, Switzerland, 26 September to 14 October 2005, a workshop will be organized for participants related to radiation instruments and radiation measurements.
9. The Training Workshop on Metrology for the RICs will be held in Trappes, France from 17 to 22 October 2005. Two experts from the RIC in Trappes will prepare the set of training material for the workshop in French and English and could be used in the follow-up workshops for the NMHSs.
10. The Fourteenth WMO Congress noted with appreciation the offer of India to hold training courses at the Regional Meteorological Training Centre in Pune, India for surface, radiation and calibration practices under the VCP umbrella. This information was availed to WMO members publication number, WMO-No.240

### **Training Material**

11. Based on the CIMO-XIII decisions, the CIMO Management Group (CIMO-MG) decided on the Milestone Plan to provide a basic guidance for planning of CIMO activities. The Milestone Plan is based on CIMO OPAGs' structure and their respective TOR and was recast in the Work Plan of the ET on TA&TM. The following are the actions related to development of training material:

- Development of training materials for scientists beginning work in instrumentation development
- Development of training materials on operation and basic maintenance of AWS for operators
- Development of training materials on operation and maintenance of AWS for technicians
- Translation of available training material on U/A observations in Russian language
- Development of guidelines on basic radar operation and maintenance

CIMO Expert Team on Surface Technology and Measurement Techniques, 13-16 October 2004 considered the above proposals and noted that most of the meteorological Services do not provide training in the above areas. They advised that technical personnel should use manufacturers user manuals, which are provided at the purchase of the equipment. They also recommended on job training during the purchase and installation of new equipment.

12. Development of such comprehensive training material requires resource persons and experts at a level that may currently not available to CIMO. Therefore, the CIMO management Group (CIMO-MG) is of the opinion that rather than to develop new training materials it would be more effective to collect available training materials relevant to the above tasks and update them for a more widely use. If such available training materials were in other languages, they could be translated into English with the assistance of WMO .

13. Secretarial requested CIMO-MG members to provide to WMO training materials available in their home institutes that relate to above ET tasks. Based on this request, UK Met Office made available the following material for CIMO:

- Meteorological Engineering – basic principles,
- Meteorological radar– basic principles,

- Basic AWS Operation.

The above training materials, after some adaptation, may be published as the IOM Reports.

The German Wetterdienst also provided some training material in German language and the ET would consider their suitability to other Regions and their translation to English and publication on the CIMO/IMOP website. Those materials are:

- (a) Messung der Luftfeuchte
- (b) Luftdruckmessung
- (c) Messung der temperatur
- (d) Anleitung für die Beobachter an den Klimastationen
- (e) Anweisung für den Beobachter an den Niederschlagstationen
- (f) Flieger handbuch

### **Tasks to be accomplished**

- Develop new training materials based on e – learning. Response from the experts is encouraged
- Negotiate with industries about attachment of personnel – technical staff.
- Training material for scientists
- Translation of upper Air training materials from Russian into English
- Holding a workshop to examine available training guidelines on operation and maintenance of Meteorological Radar – Mr. Ercan Bujukbas is willing to share his experiences
- The meeting of the experts on TA&TE which was scheduled for October 2004 did not take place due to lack of financial resources. However, this would have facilitated team building and update on the work plan.