

**WORLD METEOROLOGICAL ORGANIZATION**

**COMMISSION FOR INSTRUMENT AND  
METHODS OF OBSERVATION  
*OPAG-SURFACE***

**EXPERT TEAM ON SURFACE TECHNOLOGY AND  
MEASUREMENT TECHNIQUES  
*First Session***

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ITEM: 7

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## **TRAINING ACTIVITIES**

*(Submitted by Mr E. Bazira, chair of the ET on TA&TM, and the Secretariat)*

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### **Summary and purpose of document**

This document contains a report on training activities within CIMO as relates to the work programme of the CIMO Expert team on Training Activities and Training Material (ET on TA&TM).

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### **Action proposed**

The meeting is invited to provide advice on training and training materials needed to support CIMO activities.

## **Training Activities and Training Material (agenda item 7)**

1. Two Training Workshop on Upper-air Observations for RA I was 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 all activities before launching radiosondes. A review of the presently used technology was complemented by information on possible future systems, such as wind profilers, RASS and radiometers. The practical part dealt with all activities during and after a radiosonde launch. 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.
2. The participants presented country reports that generally indicated the state of upper air network in their respective country and indicated those upper stations which failed to operate due to either lack of spare parts for the equipment or lack of financial resources to procure sondes, balloons and other consumables. Participants also indicated a need for training in basic maintenance of the equipment.

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

3. The Training Workshop on Upper-air Observations for RA I (Africa) 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 with the necessary infrastructure for the successful outcome of the Workshop, complemented by two additional ground receiving and processing stations, and some consumables, provided by the UK Met Office and Vaisala Oyj, for the practical demonstrations at the Upper-air station. During the practical demonstration four RS80, two RS90 and three RS92 radiosondes were launched during the demonstrations.
4. 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**

5. Training Workshop on Upper-air Observations for RA I (Africa) 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, however for the practical demonstration at the Upper-air station two additional ground receiving and processing stations were provided by VAISALA Oyj and one by MODEM together with some consumables. During the practical demonstration two Vaisala RS80, four Vaisala RS92 and three Modem M2K2 radiosondes were launched. Availability of additional ground receiving and processing stations enabled to divide trainees into small groups allowing them to spend sufficient time to master the equipment they are currently using and/or to acquaint themselves with the new equipment.
6. Based on the lecture notes prepared by UK Met Office and USA NWS Training Centre, three lecturers from Canada, France and Switzerland with the help of two lecturers from Morocco and representatives of the Association of HMEI updated and delivered lectures and conducted practical lessons. Twenty-one trainees from nineteen countries participated at the Workshop.

## Future Training Workshop

7. 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 RMTC Buenos Aires in Argentina was offered as a host venue for the Training Workshop on Upper-air Observations in RA III. Argentina is prepared to assist in providing resource staff and in the translation of training material. No action was taken so far as the resources were not yet identified. Similarly, no action was taken in proceeding with the workshops on Upper-air Observations in RA II, RA V and RA VI for the same reason.
8. The EC-LVI welcomed the proposal of ASECNA to organize, in collaboration with ASECNA, instrument training in EAMAC also for non-ASECNA countries. No action was taken so far as the resources were not yet identified.
9. 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.
10. There is a provision (CHF 12,300) for a training workshop for instrument specialists. Preliminary discussions were made with Météo France to organize a Calibration workshop for the RICs. Final decision is pending availability of additional resources needed to cover expenditures of participants and development of training materials.
11. 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 at no cost of training under the VCP umbrella. This has become available to members also through a WMO publication, WMO-No.240, Training Programmes of WMO Regional Meteorological Training Centres.

## Training Material

12. 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
13. 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 material it would be more effective to collect available training material relevant to the above tasks and update them for a more widely use. If available training material is in other than English it could be translated with the assistance of WMO into English.
14. 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 (and it is now available at the Secretariat):
  - ?? Meteorological Engineering – basic principles,
  - ?? Meteorological radar– basic principles,
  - ?? Basic AWS Operation.

The above training material, after some adaptation, may be publish as the IOM Reports. The meeting is invited to provide advice on the above offer as well as priorities to address this issue.