

Report of the 4th Meeting of the WMO Brewer Sub-Committee Kos, Greece, June 2, 2004

Chairman: T. McElroy
Rapporteur: E. Hare

List of Committee Members

| Member | Agency/Institute | Country |
|-----------------|---|----------------|
| Alkis Bais | Aristotle University of Thessaloniki | Greece |
| Len Barrie | World Meteorological Organization | Switzerland |
| Hugo DeBacker | Royal Meteorological Institute of Belgium | Belgium |
| Ben Dieterink | Kipp & Zonen | Netherlands |
| Vitali Fioletov | Meteorological Service of Canada | Canada |
| Ed Hare | Meteorological Service of Canada | Canada |
| Jim Kerr | Meteorological Service of Canada | Canada |
| Tom McElroy | Meteorological Service of Canada | Canada |
| Karel Vanicek | Czech HydroMeteorological Institute | Czech Republic |
| Absent | | |
| Tom Grajnar | Meteorological Service of Canada | Canada |
| Ken Lamb | International Ozone Services Inc. (IOS) | Canada |

Guests: Zia Ahmad, Guiseppe Casale, Paul Eriksen, Robert Evans, Larry Flynn, Georg Hansen, Jay Herman, Janusz Jaroslowski, Jhoon Kim, Ulf Köhler, Natalia Kouremedi, Janusz Krzyscin, Esko Kyrö, Gordon Labow, Rich McPeters, Samuel Oltmans, Irina Petropavlovskikh, Bonawentura Rajewska-Więch, Alberto Redondas, John Rimmer, Johannes Staehelin, Rene Stubi, Pierre Viatte, Betsy Weatherhead

A contact list of all attendees is available in Annex A.

Agenda

1. Election of a Brewer representative to serve on the NDSC committee.
2. Selection of the location for the next Brewer Workshop (2005)
3. Announcements
4. Statement by B. Dieterink on the status of Kipp and Zonen
5. Other Business

T. McElroy of the Meteorological Service of Canada (MSC) opened the meeting and welcomed the guests in attendance.

Topic I Brewer representative to the NDSC

McElroy expressed the need to have a Brewer representative serve as part of the Network for Detection of Stratospheric Change (NDSC). This meant either endorsing his continuing to serve in this capacity or elect a new representative to replace him. It was acknowledged that U. Köhler has now joined the NDSC as the co-chair for column ozone representing the Dobson community, but is also another capable Brewer representative.

Action: The group agreed that McElroy should continue in his capacity as a member of the NDSC, but pursue a future replacement, possibly chosen in time to accompany him to the 2005 meeting.

Topic II Choosing the location of the next Workshop

McElroy listed in order the proposals he had received from potential hosts for the next Brewer meeting planned for 2005. The following proposals were presented.

- E. Kyrö, speaking on behalf of the Finnish Meteorological Service (FMI), presented a proposal to host the next workshop in March-April 2005. He described the facility at Saariselkä in northern Finland that it is well equipped for meeting and leisure time activities. A detailed description of the proposal is presented in Annex B.

After the presentation, some discussion occurred concerning the cost and ease of access to the facility. In particular, A. Bais expressed concern about the travel costs.

- B. Dieterink representing Kipp and Zonen presented his proposal to host the meeting at Delft, Netherlands highlighting that it will be the 175th anniversary of Kipp and Zonen and it also presents an opportunity for the community to see the manufacturing of the Brewer instrument. Suggested dates are May-June or September 2005. He also mentioned that both Delft and Amsterdam are quite accessible by surface and land transportation. Additional highlights of the presentation are given in Annex B.
- McElroy also mentioned that he had been approached by Luigi Ciattaglia from the National Research Centre (CNR), Rome, Italy about a possible meeting being hosted in Ushuaia, Argentina.

McElroy asked those in attendance to consider the proposals and vote on the next location.

Action: Delft, Netherlands was chosen and details about the meeting will be forthcoming.

Announcements

McElroy introduced L. Barrie to the group as the new Chief of the Environment Division, Atmospheric Research Environment Programme (AREP) of the World Meteorological Organization (WMO) and mentioned that M. Proffitt had retired. Barrie introduced himself to the group and mentioned some of the WMO involvement within the Brewer community.

K. Vanicek mentioned that the WMO Science Advisory Group for ozone (SAG ozone) had met in Prague, Czech Republic in October 2003 and cited a recommendation that called for SOPs for the Brewer. He also mentioned about the WMO-GAW Regional Brewer Calibration Centre for RA VI, Europe (RBCC-E) meeting from the last workshop in El Arenosillo, Spain, September 2003. New developments are to be presented at a meeting later in the QOS. Refer to Annex C for a summary statement from the Regional Brewer Scientific Group for Europe (RBSG-E) meeting. Vanicek added that there may be some external support available from the European Union.

E. Hare made some announcements addressing some concerns expressed by IOS Inc. regarding the communication of information from the sub-committee to the community at large. He mentioned that all committee reports are now available from the Brewer Data Management System (BDMS) web site. Hare also addressed Vanicek's concerns about the Brewer Standard Operating Procedures (SOPs), explaining that he and T. Grajnar were working on this, but that a quality assurance document was to be considered part of this process. IOS was assisting in the process as well.

J. Staehelin asked what was happening with Brewer calibration data. A. Redondas briefly mentioned about a database for the calibration information housed at the RBCC in Izana, Tenerife. Vanicek expressed concern about confusion arising from the communiqué sent earlier in the year about the call for Level 0 Brewer data and the relationship of the BDMS to the World Ozone and UV Data Centre (WOUDC).

Some discussion ensued and some confusion still exists. McElroy and Hare explained that the BDMS was always an MSC initiative and that although it is in theory part of the WOUDC, the fact that the BDMS hosts Level 0 data, it makes it unique to the rest of the WOUDC Level 1 processed data sets. V. Fioletov added that the BDMS could be viewed as a "protected" section of the WOUDC archive.

Vanicek emphasized and described the idea of the QA pathway for the new RBCC. A proposal was addressed to the SAG ozone that WMO/GAW should submit a letter to Brewer operators and principal investigators in which they are asked for their agreement with accessing the IOS's calibration files and providing these data to the WOUDC. Further, he expressed concerns about the traceability of the calibration histories of Brewer instruments. He suggested a common action of both the MSC and Regional Brewer Group for Europe together with the PI's and the companies providing calibrations is needed.

Hare mentioned that the Brewer will be used as a test pilot project with the ultimate goal of having a QA pathway for all WOUDC data.

Köhler suggested that there should be inter-comparisons between the Brewer standards and the Dobson standards.

J. Rimmer mentioned that IOS includes both the maintenance and calibrations during visits but is still having difficulty getting additional information required to about the Brewers. He expressed concern that his instrument has not been operating for some time and getting information was a problem. He reported serious problems with the new single board electronics and related software causing long down time of the instrument. Some discussion took place about access to source code etc. and McElroy informed the group that any MSC software is freely available. Other issues concerning software included a discussion about the propriety of SCI-TEC Inc. source code.

Stahelin expressed concern about the Brewer Umkehr. The presently available Brewer Umkehr algorithm seems to have some deficits and therefore the recommendation to the station operators/principal investigators to submit Brewer Umkehr data is problematic unless a suitable algorithm is available. Stahelin asked about the status of the presently available software. Other concerns were expressed that Umkehr data were being collected but not processed. McElroy deferred this discussion to the upcoming Umkehr meeting to be held on June 3 at the Quadrennial Ozone Symposium (QOS). A summary statement from this meeting is presented in Annex C.

G. Labow would like to have access to higher resolution Brewer schematics and asked if such information was available. Schematics are currently available from Kipp and Zonen but are not of sufficient resolution. Dieterink responded that he would investigate this and possibly make arrangements to give the community access.

Finally, Dieterink discussed with the group the stability of Kipp and Zonen despite the recent rumours circulating about the sale to EKO Inc. of Japan. He explained that the Brewer manufacturing has been transferred to the Netherlands and recently EKO has been in the market to purchase Kipp and Zonen. However, he confirmed that EKO will not purchase Kipp and Zonen, but rather, the two companies have entered into a strategic marketing alliance. Kipp and Zonen will continue to function as Kipp and Zonen for now

A final action item from this meeting will be to generate a working document to consider these issues and to put it forth to the community to respond.

McElroy thanked everyone for attending and closed the meeting.

Annex A Contact List of Meeting Attendees

| Attendee | Country | Email |
|----------------------------|----------------|--------------------------------|
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Annex B Brewer Workshop 2005 Meeting Proposals

The FMI proposal is available for viewing or download (in PDF format) at:
ftp://bdms:arosa90@ftp.tor.ec.gc.ca/Sub-committee_Reports/2004/FMI_Proposal_2005.pdf

The Kipp and Zonen presentation included the following highlights:

- Kipp and Zonen is the official Brewer manufacturing site and in addition is celebrating its 175th anniversary;
- Delft is easily to reach by any form of transportation and is 30 minutes from Amsterdam;
- An opportunity exists to meet the Research and Development group and Senior Scientists;
- The city of Delft provides interesting sites such as the old town, and is the home of several famous personalities as: J. Vermeer, A. Leeuwenhock and P. J. Kipp.

Annex C Summary Statements from Sub-committee Meetings Held During the QOS

Summary Statement from the Umkehr Meeting, held June 3, 2004, Kos Greece.

Considerable discussion concerning the value of Umkehr observations took place at an Umkehr sub-committee meeting held in Kos, Greece on June 3, 2004 that was called by the IOC and chaired by Tom McElroy. In 1999 McElroy and the WOUDC organised a meeting to form an ad hoc sub-committee to act as an advisory group to the WOUDC with respect to Umkehr analysis algorithms. McElroy is willing to continue in his role as chair of this committee. In addition, a decision was made that the sub-committee should make recommendations and report them directly to both the WMO (SAG Ozone) and IOC. The sub-committee also recommended that the current 'best' algorithm, based on the outcome of new work by Irina Petropavlovskikh and P.K. Bhartia, be adopted for use in the WOUDC and that the existing Umkehr data be reprocessed. Both the existing and reprocessed data will be made available to the community. An agreement has been made between McElroy and Petropavlovskikh to pursue a better algorithm for analyzing Brewer Umkehr data as well.

Summary Statement from the RBSG-E Meeting, held June 7, 2004, Kos, Greece

A meeting of the Regional Brewer Scientific Group from the European region (RBSG-E) was held during the QOS at Kos, Greece and chaired by K. Vanicek. About 30 participants from European Brewer stations and invited experts attended the meeting. A. Redondas informed the group that the Observatory of INM at Izana, Spain has been appointed a WMO/GAW Regional Brewer Calibration Centre for the RA-VI Region in 2003. Leading experts of particular Working Groups presented brief summaries of tasks for activities of the RBSG-E in the near future. Vanicek summarized that at present RBSG-E should look for an external project to continue its complex activities. Invited experts H. Kelder (KNMI) and G. Braathen (NILU) recommended that RBSG-E should formulate its plans and goals in a brief document to be submitted to DG-12 of the European Commission for assessment which type of the project is suitable to be applied. The paper will be compiled by Vanicek from inputs prepared by WGs leaders and then submitted to the EC (A. Ghazi).