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DATA QUALITY AND EXCHANGE

Review on Electronic Logbooks

(Submitted by Mr Frits B. Koek (KNMI), in cooperation with Mr Takashi Yoshida (JMA))

Summary and purpose of document

This document provides information on the current status of the OBSJMA and TurboWin.

ACTION PROPOSED

The Expert Team on Marine Climatology is invited to:

1. Note and comment on the information provided, and provide guidance, as appropriate;
2. Consider the issues raised regarding the use of BUFR, VOS ID and transmission methods, and make recommendations, as appropriate.

Appendices: (None)

DISCUSSION

A. Background information

Members operating the VOS have been encouraged to use electronic logbooks such as TurboWin. It is essential that amendments on codes and formats be carefully coordinated and accommodated in timely fashion in the electronic logbooks. This document will present the processes currently used to modify some electronic logbooks.

Important issues for the electronic logbooks that will become necessary to consider in the near future are as follows:

- Reduction of the transmission costs;
- Migration to BUFR;
- Encoding the ship's call sign into a VOS ID;
- Meta data collection.

The following chapters summarize the status of the Japanese OBSJMA and the Dutch TurboWin software.

B. Report on the Japanese electronic logbook, OBSJMA; submitted by Takashi Yoshida, JMA

The Japan Meteorological Agency (JMA) has distributed a software package named "OBSJMA for WIN" to facilitate the use of electronic logbooks for voluntary observing ships (VOS). The most current version was published in 2004, and provided to 305 vessels by the end of 2006. A revised version of the manual of "OBSJMA for WIN" was published in December 2005, in order to facilitate the use of the software. A total of 795 revised manuals were distributed to the VOS by the end of 2006. Annual numbers of marine electronic logs and the ships which use OBSJMA are around 11000, and 40-55, respectively in the last three years (see the table below). The ration of electronic logs to all types of logs from VOS is 28% in the last two years. The JMA currently has no plan to modify the OBSJMA package.

Some VOS started to use a dummy call sign "SHIP", not only for the real-time transmission, but also for the delayed-mode logs in September 2005. From the viewpoint that the marine data with a dummy call sign are less useful for marine climatological purpose, the JMA has been keeping those data with the information on ship names not to be sent to GCCs for the time being. A number of those data reached about half of the total electronic logs in 2006.

Annual numbers of electronic logs and ships which use OBSJMA

	2004	2005	2006
Total number of e-logs	11000	11062	10824
E-logs with dummy call sign	0	1052	5288
Total number of VOS which use OBSJMA package	48	55	40
VOS which use dummy call sign	0	12	20

C. Report on the Dutch electronic logbook, TurboWin; submitted by Frits Koek, KNMI

Already in the early 90's of last century, the KNMI introduced a software package (Turbo1) to be used on board the VOS by the observers, to help entering the observation in the correct format. Over the years, this software has been adapted to new operating systems and other requirements, and has now recently (January 2007) been upgraded to TurboWin Version 4.0.

TurboWin was developed at KNMI (Royal Netherlands Meteorological Institute), with contributions from several National Meteorological Institutes, and endorsed by the WMO (World Meteorological Organization) and E-SURFMAR (European Surface Marine Programme). Meteorological observations made on board ships and fixed sea stations are a substantial component of the World Weather Watch (WWW), provided that the observation are accurate and of high quality. The fixed sea stations and VOS (Voluntary Observing Ships) are key components of the GOS (Global Observing System) and climate research. At the same time, however, it has been recognized that these observations are subject to keying errors, coding errors, calculating errors, etc. To achieve optimal control of the quality of the observations, before they are used in real-time, the quality control has to be carried out at the root, by the observers themselves. TurboWin is a user-friendly system with over 250 built-in quality checks,. It contains observation checking routines which are applied on the observations before they are transmitted. It allows the automated compilation of observations on board ships and fixed sea stations, their downloading to disk and their subsequent transmission ashore and thence to a Meteorological Centre, by using Inmarsat, e-mail or other specific communication facilities. The program assists the observer with many menus, pictures, photos, forms, help pages, output options, automated calculations etc.

As indicated above, TurboWin contains over 250 quality checks on several levels, including:

- Level-1: input form checks (errors/not possible to insert);
- Level-1b: mandatory parameters/groups (errors);
- Level-2: consistency all inserted parameters (errors);
- Level-3: warnings.

The latest version of TurboWin can be downloaded from the following website: <http://www.knmi.nl/turbowin>. The most important new parts in this version are as follows:

- Re-design air pressure input page(s); new method computing height of barometer above sea level, introduced by BoM Australia;
- Option to compile observation as semi-compressed message (semi-compression module supplied by Météo-France); (Availability depending on recruiting country)
- Metpub47 (ship metadata collecting program) add-on;
- Copyrights assignment phenomena observations (all recruiting countries);
- Copyright assignment meteorological observations (United Kingdom only);
- DEP (Data Execution Prevention) Windows XP aware (also on processors with DEP hardware support);
- AVRI Inmarsat-C LES advice (only if in India's coastal waters); skipped Jeddah Inmarsat-C LES for obs;
- New Zealand, Australia and United Kingdom '*does the reading indicate pressure at MSL*' preset to '*no*';
- Added option to print e-mail settings;
- Added option to print station data settings;
- Extra warning message before downloading log files;
- Extra pop-up messaging after changing call sign;

- Extra pop-up messaging after changing 'special projects participant';
- More combination checks on ship maintenance data;
- IMMT-3 storage;
- AMOS MAIL new line aware;
- Option to zip and attach log files;
- Option to insert VOS ID for security reasons;
- Added support downloading log files by e-mail;
- Added log files backup (logs automatically backed up after download); and
- Status bar displays the progress of the (FM 13-X) coded observation.

Developments

Due to several constraints, the promised manual on the installation and use of TurboWin has not yet been published. As soon as this becomes available, it will be announced through the several mailing lists, and will be available for download from the web.

To extend the service to the mariners, TurboWin incorporates, next to the data entry module, a variety of other modules. Add-ons like MeteoClassify give the observer the possibility to increase their knowledge in the field of cloud and sea-ice determination, as well as learning the various sea states and their accompanying wind forces. The add-on MetPub47 is used to collect metadata from the ship and to store that in the correct format. The PMO/PMA can collect the data when the person visits the ship. Further, wave and climatic atlases are appended, as well as pilot charts for several oceans.

Considering the BUFR developments, experimenting with these developments have already begun. For instance, TurboWin 4.0 is already capable of compiling BUFR messages. Nevertheless, guidance is needed from the steering bodies to indicate:

1. Whether BUFR is going to be assembled on board or at the local receiving NMSs before being inserted into the GTS?
2. If on board, which BUFR template should be used?

On the development of new transmission systems, the latest TurboWin version is capable to compile half-compressed messages, which reduces the transmission costs. The use of broadband internet is relatively new, and in use by only a few - mainly passenger - ship companies. The possibility to send observations by email has already been implemented in TurboWin. A web-based online entry of an observation may be the next step. However, because the transmission costs are still very high, this option will not be developed actively the next few years.

With respect to ships' security, TurboWin 4.0 has implemented an option to use the proposed VOS ID. Nevertheless, a uniform guidance has not yet been provided.
