WORLD METEOROLOGICAL ORGANIZATION

INTERGOVERNMENTAL OCEANOGRAPHIC COMMISSION (OF UNESCO)

JOINT WMO/IOC TECHNICAL COMMISSION FOR OCEANOGRAPHY AND MARINE METEOROLOGY (JCOMM)
EXPERT TEAM ON MARINE CLIMATOLOGY

ETMC-II/Doc. 4.2
(15.II.2007)

SECOND SESSION

ITEM 4.2

GENEVA, SWITZERLAND, 26 TO 27 MARCH 2007

Original: ENGLISH

DATA ARCHIVAL

History of the Marine and Oceanographic Codes

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Summary and purpose of document

This document provides information on the continuing efforts to document the history of the WMO marine SHIP codes (FM 13 and IMMPC/IMMT), and of related marine and oceanographic codes, since the mid-20th century.

ACTION PROPOSED

The Expert Team on Marine Climatology is invited to comment on the information provided and to consider the following issues:

(a) Whether the Codes metadata and publications are sufficiently accessible;
(b) Copyright and related WMO issues;
(c) The possibility of a publication documenting the SHIP code evolution; and
(d) Comments on the planned upcoming tasks, and suggested priorities for this work.

Appendix: (A.) Histories of Codes FM 14, FM 18, FM 62, FM 63, FM 64 and FM 65

DISCUSSION

1. Introduction

The Commission for Marine Meteorology (CMM) Subgroup on Marine Climatology (SGMC) and its successor, the JCOMM Expert Team on Marine Climatology (ETMC), has placed much effort into verifying the availability of documentation relating to the history of WMO's alphanumeric marine ship code (presently FM 13–XII Ext. SHIP), since approximately the mid-20th century[1].

In addition to FM 13, these efforts traced the evolution of the International Maritime Meteorological Punched Card and Tape (IMMPC and IMMT) formats, with the goal to make all this documentation available on the web. Substantial progress was made and some results were presented at the Eighth Session of the SGMC (SGMC-VII, Asheville, North Carolina, USA, 10-14 April 2000) and the First session of ETMC (Gdynia, Poland, 7-10 July 2004), including a website hosted at the Japan Meteorological Agency (JMA) (http://goos.kishou.go.jp/ws/ETMC/code_task) on which the results of this study on the history of codes and format changes are being made available.

During its First Session, the Expert Team on Marine Climatology (ETMC-I) agreed the Work Plan to continue the following tasks:

a.) Making all final reports of the CMM and CSM/CBS sessions available on the website;
b.) Updating the website;
c.) Looking for past editions and supplements to the *Manual on Codes* (WMO-No. 306), and making them available on the website; and
d.) Expanding the study to other marine and oceanographic codes such as the FM 14 DRIBU, FM 18 DRIFTER/BUOY, FM 62 TRACKOB, FM 63 BATHY, FM 64 TESAC and FM 65 WAVEOB.

The progress of the tasks during the intersessional period since the ETMC-I, are presented in this report.

2. Progress on the task during the intersessional period

2.1 Making all final editions of the CMM/JCOMM and CSM/CBS sessions available via the web

All reports regarding the CMM[2], Commission for Synoptic Meteorology (CSM)[3], and Commission for Basic Systems (CBS) were scanned. The documents were made available as PDF files on the JMA website (as mentioned above), in December 2004. All the scanned image files were converted into searchable PDF files under the NOAA Climate Database Modernization Program (CDMP), and the searchable files replaced the scanned image files in June 2005. Additionally, the CDMP archived copies of all the files. The abridged Final Reports from JCOMM-I and –II (as already published in electronic format by WMO), have also been made available on the website.

2.2 Copyright and other WMO publications issues

In 2005 the WMO Publications Board agreed that permission would be granted for public availability from the CDMP image archive system (which provides restricted access, generally for research) of these and similar imaged technical WMO documents (e.g., older editions of WMO-No. 47; Ref. ETCM-II/Doc. 5.2), provided a copyright notice was added as a "cover page." Similarly, a general copyright notice is posted on the JMA website to cover this same requirement.

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[1] The WMO came into existence around 1950 as the successor organization to the International Meteorological Organization (IMO).
[2] Together with the IOC Intergovernmental Global Ocean Services System (IGOSS), the CMM was a predecessor organization to JCOMM.
[3] The CSM was a predecessor organization to CBS.

Inconveniently, in some respects, it was noted that the available JCOMM-I final abridged report was a secure (encrypted) PDF document, which thus could not be printed, accessed by external search engines, etc. In contrast, the JCOMM-II report was not created with these restrictions.

2.3 Updating the website

- The web pages regarding the history of IMMT and MQCS were updated with the latest modifications to IMMT and MQCS, which were recommended at JCOMM-II (Halifax, Nova Scotia, Canada, 2005), adopted at Fifty eighth WMO Executive Council EC-LVIII (2006), and came into effect on 1 January 2007.
- The web page of the final reports of the CMM/JCOMM and CSM/CBS was updated with the links to the reports of the recent sessions such as JCOMM-II (2005) and CBS-XIII (2005).

2.4 Locating past editions/supplements to the Manual on Codes (WMO-No. 306)

Efforts were made to create a list of the past editions of and supplements to the *Manual on Codes* (WMO-No. 306). At least in recent years, WMO-No. 306, Volume I, Part A (Alphanumeric codes) has contained information regarding FM 13 and the other traditional alphanumeric codes.

The ETMC efforts have not yet been considered to identify past editions and supplements of the additional Parts B (Binary codes) and C (Common features to binary and alphanumeric codes) of Volume I (including information about the table driven codes, BUFR and CREX), or of Volume II (Regional codes and national coding practices).

Based on the available documents and information provided by contributors, it appears that approximately seven editions of the WMO-No. 30 (for the following years:1949, 1955, 1960, 1964, 1968, 1971 and 1974) were likely published before 1984. It should also be noted that the Volume and Part structure of the publication may have changed significantly from to the earliest edition thus far identified, from 1949.

From 1984, three editions of WMO-No. 306 were published (1984, 1988 and 1995), of which copies of "table for noting supplements received" were provided by the WMO (through the WMO Secretariat's former Scientific Officer, Teruko Manabe). Based on the information from the tables and the latest version of the *Manual on the World Weather Watch* (WWW) website: http://www.wmo.ch/web/www/WMOCodes.html, supplements to the three editions were listed as follows:

Edition	Supplement	Date of issue
1984 Basic edition	1984	
No. 1		December 1985
No. 2		January 1986
No. 3		April 1987
1988 Basic edition	1988	
No. 1		September 1989
No. 2		July 1991
No. 3		August 1991
No. 4		March 1993
No. 5		July 1993
(No. 6B concerns part B, May 1994)		
No. 7A		July 1994

1995	Basic edition	1995	
	No. 1		July 1997
	No. 2		March 2000
	No. 3		August 2001
	No. 4		August 2003
	No. 5		August 2005

The next step planned will be to attempt to locate copies of seven previous editions (from 1949-1974), in the WMO, international libraries, and the three editions and their supplements listed above. Information on the supplements to the seven editions could be obtained from the existing version of those publications. It is felt that consideration should definitely be given to the feasibility to image the entire publication, which includes large amounts of non-marine codes, for efficiency and to cover currently unforeseen requirements. Also, the latest edition of WMO-No. 306 is available electronically from the above-mentioned WWW website, so another part of the task should be to determine if the WMO already possesses electronic copies of any other the other recent editions.

2.5 Expanding the study to other marine codes

Additional work was completed in tracing the history of other marine and oceanographic codes (i.e., FM 14 DRIBU, FM 18 DRIFTER/BUOY, FM 62 TRACKOB, FM 63 BATHY, FM 64 TESAC and FM 65 WAVEOB). The results of this study are summarized in Appendix A. These results will be placed on the JMA website in the similar form to the studies of the history of SHIP code and IMMPC/IMMT.

2.6 Connections with historical data and metadata archeology

Similar to the work that identified past editions of WMO-No. 306, lists of a number of historical (largely national) publications on earlier marine codes and observing instructions have also been created. Those early historical publications are not a direct target of this WMO-focused task, but they are certainly useful marine metadata, and some of them have already or may in the future be targeted by the CDMP for imaging. This related task for historical metadata falls under the RECovery of Logbooks And International Marine data (RECLAIM) project (see ETMC-II/Doc. 4.4).

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Appendix: 1

Appendix A

Histories of Codes FM 14, FM 18, FM 62, FM 63, FM 64, FM 65

1. History of FM 14 DRIBU and FM18 DRIFTER/BUOY

7 November 2001

FM 18-XII BUOY was made (amendment to FM 18-X BUOY)
Resolution 4 EC-LIII (June 2001), Recommendation 3 CBS-XII (September 2000)
-Addition of metadata information

5 November 1997

FM 18-XI BUOY was made (amendment to FM-X BUOY)
Resolution 4 EC-XLIX (June 1997), Recommendation 7 CBS-XI (September 1996)
-Addition of groups for national use
*** Remark ***
Manual on Codes indicates another amendment was adopted in 1997, probably by correspondence, which is not seen in the EC and CBS session reports.

2 November 1994

FM 18-X BUOY was made (amendments to FM18-IX Ext. DRIFTER)
Resolution 4 EC-XLV (June 1993), Recommendation 10 CBS-X (September 1992)
-Changing the name of the code from DRIFTER to BUOY
-Addition of quality control indicators
*** Remark ***
Recommendation 10 CBS-X says, "A BUOY report, or a bulletin of BUOY reports, is identified by the group MiMiMjMj = ZZXX.", while ZZYY has actually been used since the code became into force. There seems to be a change approved by correspondence in 1994 as indicated in the *Manual on Codes*.

1 November 1991

FM 18-IX Ext. DRIFTER was made (replacement of FM 14-VIII DRIBU)
Resolution 8 EC-XLIII (May 1991), Recommendation 10 CBS Ext. (90) (September 1990)
-Changing the name of the code from DRIBU to DRIFTER
-Revision of the code structure for reporting sub-surface information
-Accuracy of location

January 1988

Editorial improvements to specifications of symbolic letters
Approved by the President of CBS, Recommendation 13 CBS-IX (January 1988)
-Specifications for Q2 (Quality of housekeeping parameter) and Q4 (quality of the air temperature measurement)

1 July 1983

FM 14-VIII DRIBU was made
Resolution 4 EC-XXXV (May 1983), Recommendation 9 CBS-VIII (January 1983)
-Elevation of the status of DRIBU code
-Addition of an optional pressure tendency group (5appp)
-Addition of an optional group for the depth of the drogue

1 July 1977

DRIBU code and an international identifier system for buoys were introduced
Resolution 3 EC-XXIX (May 1977), Recommendation 7 CBS Ext. (76) (November 1976)
Recommendation 8 CBS Ext. (76) (November 1976)

2. History of FM 62 TRACKOB

No amendments have been done since it was introduced on 1 November 1987.

1 November 1987

FM 62-VIII Ext. TRACKOB is introduced
Resolution 4 EC-XXXVIII (June 1986), Recommendation 7 CBS Ext. (85) (October 1985)

3. History of FM 63 BATHY and FM 64 TESAC

3 May 2000

FM 63-XI Ext. BATHY and FM 64-XI Ext. TESAC were made (amendments to FM 63-X Ext. BATHY and FM 64-IX TESAC)
Resolution 8 EC-LI (May 1999), Recommendation 6 CBS-Ext. (98) (Sept. 1998)
-Inclusion of instruments information (TESAC)
-Accuracy of location (BATHY and TESAC)
-MiMiMjMj for FM 63-XI Ext. BATHY is “JJVV” (former “JJYY”)
-MiMiMjMj for FM 64-X) Ext. BATHY is “KKYY” (former “KKXX”)

8 November 1995

FM 63-X Ext. BATHY was made (amendments to FM 63-IX BATHY)
Resolution 8 EC-XLVII (4 1995), Recommendation 7 CBS-Ext. (94) (August 1994)
-Inclusion of instruments information
-MiMiMjMj for FM 63-X Ext. BATHY is “JJYY” (former “JJXX”)

1 November 1991

Modifications to regulations of FM 63-IX BATHY and FM 64-IX TESAC
Resolution 8 EC-XLIII (May 1991), Recommendation 13 CBS-Ext. (90) (September 1990)
-Interpretation of the regulations for reporting the direction and speed of win

1 November. 1989

FM 63-IX BATHY and FM 64-IX TESAC were made (amendments to FM 63-VIII Ext. BATHY and FM 64-VIII Ext. TESAC)
Resolution 1 EC-XL (June 1988), Recommendation 17 CBS-IX (September 1988)
-Introduction of “99999 and station identification group”

1 November 1987

FM 63-VIII Ext. BATHY and FM 64-VIII Ext. TESAC were made (amendments to FM 63-VIII BATHY and FM 64-VIII TESAC)
Res. 4 EC-XXXVIII (June 1986), Rec. 6 CBS-Ext. (85) (Oct. 1985)
- Method of removing ship’s velocity and motion from current measurements (TESAC)
- Regulations for reporting wind observations (BATHY)

1 July 1983

FM 63-VIII BATHY and FM 64-VIII TESAC were made (amendments to FM 63-V BATHY and FM 64-V TESAC)
Resolution 4 EC-XXXV (May 1983), Recommendation 9 CBS-VIII (January 1983)
-Additions of indicator for digitization, total water depth and current measurements (BATHY)
-Removal of the groups reporting temperatures at IAPO standard depths (BATHY)
-Additions of indicator for digitization and total water depth (TESAC)

1 January 1972

FM 63-V BATHY and FM 64-V TESAC were introduced
Resolution 15 EC-XXII (October 1970), Recommendation 15 CSM-V (June 1970)
Recommendation 16 CSM-V (June 1970)

4. History of FM 65 WAVEOB

3 May 2000

FM 65-XI Ext. WAVEOB was made (amendments to FM-XI WAVEOB)
Res. 8 EC-LI (May 1999), Rec. 6 CBS-Ext. (98) (Sep. 1998)
Addition of a note in WAVEOB (to indicate that some optional section ought to be present when other sections were coded)

In 1997

FM 65-XI Ext. WAVEOB was made (amendments to FM-XI WAVEOB)
*** Remark ***
There are no text showing the amendments in the abridged final reports of EX-XLIX (1997) and CBS-XI (October 1996), although the *Manual on Codes* says EC-XLIX made a decision on the code.

1 November 1989

FM 65-IX WAVEOB was introduced
Resolution 1 EC-XL (October 1988), Recommendation 14 CBS-IX (January 1988)