

distributed database systems requiring remote access; and the multiplication as well as diversification of users. The Commission agreed that, the first version of edition 2 of GRIB (GRIB-2), proposed for that purpose by the WGDM, should be used as an experimental data format with a view, after necessary refinements, to endorsing a final version at CBS-XII for operational implementation in November 2001. The Commission noted, however, that GRIB-2 was not the ultimate solution for gridded data but was rather another step in a continuous evolutionary process.

4.4.6 The Commission reconsidered the freeze placed on changes to GRIB-1 by CBS-XI (general summary paragraph 6.4.12 of the *Abridged Final Report with Resolutions and Recommendations of the Eleventh Session of the Commission for Basic Systems* (WMO-No. 854)) and felt it was more restrictive than necessary to meet ICAO requirements and concerns. It noted the comment made by the ICAO observer to the Expert Meeting on Development of GRIB edition 2 who stated that GRIB-1 table additions which did not affect the WAFS data stream would be acceptable to ICAO. The Commission therefore recommended to modify the freeze in the following way:

- (a) There would be no change to GRIB edition 1 affecting WAFS products or software;
- (b) However table additions that did not affect WAFS products or software were allowed.

4.4.7 The Commission was pleased to note the development of a BUFR master table 10 for oceanography in cooperation with the Intergovernmental Oceanographic Commission (IOC)/International Oceanographic Data and Information Exchange (IODE). The Commission recommended the experimental use of that new master table 10 for oceanography with a view to its approval for operational implementation at CBS-XII.

4.4.8 The Commission endorsed the following set of additions to BUFR tables:

- (a) Additions requested by the Data Buoy Cooperation Panel (DBCP) on encoding buoy data;
- (b) The addition of entries for coding the equivalent of the code FM 82 SFLOC (atmospherics);
- (c) New data descriptors for precipitation data;
- (d) The introduction of agreed new CREX entries (mainly for hydrology, ozone and tide gauge data).

It also endorsed the introduction of a clarification in the BUFR regulations for the compression method of character arrays and for bit length per character.

4.4.9 The Commission further endorsed the addition of a new Common Code Table C-6 containing the list of units which might be used in CREX (and other WMO codes) and a new Common Table C-8 containing a comprehensive list of all instruments flown by satellites.

4.4.10 The Commission endorsed the following additions or changes to character codes (Volume I.1 of the *Manual on Codes*):

- (a) Amendment to the regulation for clarification in reporting past-weather in SYNOP;
- (b) Provision for regional practice data (Section 5 of FM 32-34, Section 9 of FM 35-38) and national

practice data (Section 6 of FM 32-34, Section 10 of FM 35-38) to part A and part C of the PILOT and TEMP code forms;

- (c) Inclusion of Section 7 (launch time and type of radiosonde), already in Part B, in all the other sections of the TEMP report;
- (d) Regulation in TEMP and PILOT defining the layer of wind missing values;
- (e) Addition of day (YY) to time group (GGgg) in AMDAR (to identify without ambiguity the observations and avoid loss of data);
- (f) Updates to BATHY and TESAC (instruments information and accuracy of location);
- (g) Addition of a note in WAVEOB (to indicate that some optional section ought to be present when other sections were coded);
- (h) Adding a code table to define data-processing technique used when retrieving satellite data (l_4 in SATEM and SARAD);
- (i) Suppression of the Appendix related to units used for wind in the various code forms by every country in Volume I.1.

4.4.11 The Commission adopted Recommendation 6 (CBS-Ext.(98)) defining the amendments to BUFR and Common Code Tables in Volume I.2 of the *Manual on Codes*, and the amendments to alphanumeric codes in Volume I.1 of the *Manual on Codes*. As regarded the alphanumeric codes, the criteria for reporting missing wind data in PILOT and TEMP would be reviewed when necessary.

4.4.12 The Commission considered the implementation of code changes in relation to the year 2000 problem. It agreed that the introduction of a code change in late 1999 could complicate efforts to ensure that systems were able to cope with the year 2000. The Commission, therefore, recommended that all code changes that would normally be implemented in November 1999 be postponed until 3 May 2000. That applied to the above-mentioned Recommendations 5 and 6 (CBS-Ext.(98)).

4.4.13 The Commission considered the requirement, expressed by CIMO-XII, to report observed quantities rather than qualitative parameters for present weather. Since Meteorological Services and manufacturers were currently heavily involved in the development of automatic weather stations, the Commission gave highest priority to that item on its future work programme, with a view to make a proposal for a new appropriate code to be validated, and then approved by CBS-XII in 2000.

4.4.14 The Commission reviewed the proposed rules and procedures for amendments to the *Manual on Codes*, as followed:

- (a) General validation and implementation procedures;
- (b) Fast-track validation and implementation procedures;
- (c) Procedures for correcting existing entries in the BUFR and CREX tables;
- (d) Rules for the development and maintenance of new BUFR master tables.

RECOMMENDATION 6 (CBS-Ext.(98))

AMENDMENTS TO THE *MANUAL ON CODES* (WMO-No. 306), VOLUME I.1, ALPHANUMERIC CODES AND VOLUME I.2, BINARY CODES AND COMMON FEATURES

THE COMMISSION FOR BASIC SYSTEMS,

NOTING:

- (1) Resolution 5 (CBS-XI) — Working Group on Data Management,
- (2) The report of the meeting of the Subgroup on Data Representation and Codes (20–24 April 1998),
- (3) The report of the third session of the Working Group on Data Management (8–12 June 1998),
- (4) The *Abridged Final Report with Resolutions and Recommendations of the Eleventh Session of the Commission for Basic System* (WMO-No. 854), general summary paragraph 6.4.34,

CONSIDERING the requirements:

- (1) (a) For additions requested by the Data Buoy Cooperation Panel on Encoding Buoy Data,
- (b) For addition of entries for coding the equivalent of the code FM 82 SFLOC (Atmospherics),
- (c) For new data descriptors for precipitation data,
- (d) For the introduction of agreed new CREX entries (mainly for hydrology, ozone and tide gauge data),
- (e) For the introduction of a clarification in the BUFR regulations for the compression method of character arrays and for bit length per character,

- (2) (a) For addition of a new Common Code Table C-6 containing the list of units which may be used in CREX (and other WMO Codes),
- (b) For addition of a new Common Table C-8 containing a comprehensive list of all instruments flown by satellites,
- (3) (a) For amendment to the regulation for clarification in reporting past weather in SYNOP,
- (b) For provision for regional practice data (Section 5 of FM 32-34, Section 9 of FM 35-38) and national practice data (Section 6 of FM 32-34, Section 10 of FM 35-38) to Part A and Part C of the PILOT and TEMP code forms,
- (c) For inclusion of section 7 (launch time and type of radiosonde), already in Part B, in all the other sections of the TEMP report,
- (d) For regulation in TEMP defining the layer of wind missing values,
- (e) For addition of day (YY) to time group (GGgg) in AMDAR (to identify without ambiguity the observations and avoid loss of data),
- (f) For updates to BATHY and TESAC (instruments information and accuracy of location),
- (g) For addition of a note in WAVEOB (to indicate that some optional section ought to be present when other sections were coded),
- (h) For adding a code table to define data processing technique used when retrieving satellite data (I₄ in SATEM and SARAD),

- (i) For suppression in section 2 of the Appendix to Volume I.1 of the *Manual on Codes* (WMO-No. 306) related to units used for the wind in the various code forms by every country,

RECOMMENDS that the following amendments be adopted for use as from 3 May 2000:

- (1) Amendments to FM 94-XI BUFR regulations and tables, defined in Annex 1 to this recommendation;
- (2) Additions of Common Tables, defined in Annex 2 to this recommendation;
- (3) Amendments to FM 12-XI SYNOP, FM 13-XI SHIP, FM 14-XI SYNOP MOBIL, FM 32-IX PILOT, FM 33-IX PILOT SHIP, FM 34-IX PILOT MOBIL, FM 35-X Ext. TEMP, FM 36-X Ext. TEMP SHIP, FM 37-X Ext. TEMP DROP, FM 38-X Ext. TEMP MOBIL, FM 42-XI AMDAR, FM 63-X Ext. BATHY, FM 64-IX TESAC and FM 65-XI WAVEOB, and new code table to define data processing technique used when retrieving satellite data (I₄ in SATEM and SARAD), defined in Annex 3 to this recommendation;
- (4) Suppression of Appendix 2.: Units used for the reporting of horizontal speed (wind speed, speed of a system, etc..) in Volume I.1 of the *Manual on Codes* (WMO-No. 306);

REQUESTS the Secretary-General to arrange for the inclusion of these amendments in Volumes I.1 and I.2 of the *Manual on Codes* (WMO-No. 306).

AMENDMENTS TO ALPHANUMERIC CODES AND RELATED TABLES

1. Amendment to FM 12-XI SYNOP, FM 13-XI SHIP and FM 14-XI SYNOP MOBIL regulations

Amend regulation 12.2.6.1 to read as follows.

12.2.6.1 This group shall always be included in an observation by a manually-operated station after a period of closure or at start up, when past weather conditions for the period applicable to the report are unknown, and shall take the form 7ww// (with $i_x = 1$), even if ww = 00-03. Otherwise it shall only be included if present or past weather phenomena of significance, or both, were observed. $W_1W_2 = //$ shall indicate that previous conditions are unknown. This regulation shall also apply to automatic reporting stations with the facility to report present and past weather. Where a single past weather form is recognized it shall take the form of 7ww W_1 /.

2. Additions to FM 32-IX PILOT, FM 33-IX PILOT SHIP and FM 34-IX PILOT MOBIL

2.1 In Part A, add the following after SECTION 3:

SECTION 5	51515		
	52525		Code groups to be developed regionally
		
	59595		

NOTE: Identifier 55555 should not be used in Section 5.

SECTION 6	61616		
	62626		Code groups to be developed nationally
		
	69696		

NOTE: Identifier 66666 should not be used in Section 6.

2.2 In Part C, add the following after SECTION 3:

SECTION 5	51515		
	52525		Code groups to be developed regionally
		
	59595		

NOTE: Identifier 55555 should not be used in Section 5.

SECTION 6	61616		
	62626		Code groups to be developed nationally
		
	69696		

NOTE: Identifier 66666 should not be used in Section 5.

3. Additions to FM 35-X Ext. TEMP, FM 36-X Ext. TEMP SHIP, FM 37-X Ext. TEMP DROP and FM 38-X Ext. TEMP MOBIL

3.1 In Part A, add the following after SECTION 4:

SECTION 9	51515		
	52525		Code groups to be developed regionally
		
	59595		
SECTION 10	61616		
	62626		Code groups to be developed nationally
		
	69696		

NOTE: Identifier 66666 should not be used in Section 10.

3.2 In Part C, add the following after SECTION 4:

SECTION 9	51515		
	52525		Code groups to be developed regionally
		
	59595		

SECTION 10	61616		
	62626		Code groups to be developed nationally
		
	69696		

NOTE: Identifier 66666 should not be used in Section 10.

3.3 SECTION 7 shall be included in all PARTs of the TEMP report. It shall be added to PART A, C and D.