

## WMO OMM

WEATHER CLIMATE WATER  
TEMPS CLIMAT EAU



World Meteorological Organization  
Organisation météorologique mondiale  
Organización Meteorológica Mundial  
Всемирная метеорологическая организация  
المنظمة العالمية للأرصاد الجوية  
世界气象组织

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Our ref.: 01356/2018/OBS/WIS/DRMM/DRC

2 February 2018

Annexes: 2 (available in English, French, Russian and Spanish only)

Subject: Amendments to the *Manual on Codes*

Action required: To consider the amendments to the *Manual on Codes* (WMO-No. 306) and inform the Secretariat of your concurrence on the amendments by  
**1 April 2018**

Dear Sir/Madam,

In accordance with the "Procedures for Maintaining Manuals and Guides that are the responsibility of the Commission for Basic Systems", I am pleased to attach herewith in Annex I draft amendments to the *Manual on Codes, Volume I.2*.

I should be grateful if you could consider these draft amendments for implementation on 7 November 2018. In order to have the amendments incorporated in the next edition of the *Manual on Codes* in an appropriate manner, please let me know if you agree with these amendments as soon as possible, within the two months following the date of dispatch of this letter.

If you have comments or disagreements on all or some of these draft amendments, I would be grateful if you could designate a focal point responsible to discuss these comments/disagreements with the CBS Inter-Programme Expert Team on Codes Maintenance (IPET-CM). Please note that those WMO Members who have not replied within two months following the dispatch of this letter are implicitly considered as having agreed with the draft amendments.

The list of amendments approved by the WMO Members will be included in an issue of the Operational Newsletter on the World Weather Watch and Marine Meteorological Services available on the WMO server ([http://www.wmo.int/pages/prog/www/ois/Operational\\_Information/Newsletters/current\\_news\\_en.html](http://www.wmo.int/pages/prog/www/ois/Operational_Information/Newsletters/current_news_en.html)) after the two months following the dispatch of this letter. The date of issue of this Operational Newsletter will be considered as the date of notification of the approved amendments.

Yours faithfully,

(W. Zhang)

for the Secretary-General

To: Permanent Representatives (or Directors of Meteorological or Hydrometeorological Services) of Members of WMO

cc: Hydrological Advisers to Permanent Representatives

Ref.: 01356/2018-18 OBS-WIS/DRMM

**AMENDMENTS TO THE MANUAL ON CODES (WMO NO. 306)  
BY THE PROCEDURE FOR ADOPTION BETWEEN CBS SESSIONS**

**CONTENTS**

**Part B – Binary Codes**

- b. List of binary codes with their specifications and associated code tables

**FM 92 GRIB** – General regularly distributed information in binary form

**FM 94 BUFR** – Binary universal form for the representation of meteorological data

**Part C – Common Features to Binary and Alphanumeric Codes**

- c. Common code tables to binary and alphanumeric codes

1. [Common Code table for master table version numbers of GRIB, BUFR and CREX](#)

d. Regulations for reporting traditional observation data in Table-Driven Code Forms (TDCF): BUFR OR CREX

2. [Implementation of the Decision 15 of EC-69 regarding the International Exchange of Snow Data](#)

3. [Regulations for reporting SHIP data in TDCF \(B/C10\)](#)

**Common code tables to binary and alphanumeric codes**

**1. 2017-2.5.4(CM-I)/Common Code table for master table version numbers of GRIB, BUFR and CREX**

**AMEND:**

Octet 10 of Section 1 in Specifications of Octet Contents of FM 92 GRIB to

10 GRIB master table version number (see Common Code table C-0 and Note 1)

Octet 14 of Section 1 in Specifications of Octet Contents of FM 94 BUFR to

14 BUFR master table version number (see Common Code table C-0 and Note 2)

vv and bb in Group No. 1 of Section 1 in Specifications of Sections of FM 95 CREX to

vv: CREX master table version number (see Common Code table C-0)

bb: BUFR master table version number used (see Common Code table C-0)

Notes 2 and 3 to Class 00 of BUFR/CREX Table B to

(2) BUFR master table version numbers are described in Common Code table C-0 and Note 2 to Section 1 of BUFR regulations.

(3) CREX master table version numbers are described in Common Code table C-0.

**DELETE:**

Note 5 to Section 1 of Specifications of Octet Contents of FM 94 BUFR,

Note 3 to Specifications of Sections of FM 95 CREX.

**ADD:**

a note to GRIB Code table 1.0.

Note: This code table is deprecated. See Common Code table C-0 instead.

Common Code table C-0.

COMMON CODE TABLE C-0: *GRIB, BUFR and CREX master table version number*

Octet 10 in Section 1 of GRIB Edition 2

Octet 14 in Section 1 of BUFR Edition 4

vv and bb in Group No. 1 in Section 1 of CREX Edition 2

## COMMON CODE TABLE C-0: GRIB, BUFR and CREX master table version number

Version number			Effective date
GRIB	BUFR	CREX	
0	0	0	Experimental
	1		1 November 1988
	2		1 November 1993
	3		2 November 1994
	4		8 November 1995
	5		6 November 1996
	6		5 November 1997
	7		4 November 1998
	8	1	3 May 2000
	9		8 November 2000
1	10	2	7 November 2001
2	11	3	5 November 2003
3	12	4	2 November 2005
4	13	5	7 November 2007
5	14	6	4 November 2009
6	15	7	15 September 2010
7	16	16	4 May 2011
8	17	17	2 November 2011
9	18	18	2 May 2012
10	19	19	7 November 2012
11	20	20	8 May 2013
12	21	21	14 November 2013
13	22	22	7 May 2014
14	23	23	5 November 2014
15	24	24	6 May 2015
16	25	25	11 November 2015
17	26	26	4 May 2016
18	27	27	2 November 2016
19	28	28	3 May 2017
20	29	29	8 November 2017
21	30	30	2 May 2018
22	31	31	Pre-operational to be implemented by next amendment

## Notes:

- (1) Introduction of Common Code table C-0 is a legal initiative. WMO Members and other TDCF users could practically deal with the version numbers the same as before until their software becomes capable of referring to the common code table.
- (2) CREX master table version numbers 8-15 are not used.
- (3) In the case of BUFR and CREX, these version numbers apply to the master table 0.

**Regulations for reporting traditional observation data in Table-Driven Code Forms (TDCF): BUFR OR CREX**

Ref.: 01356/2018-18 OBS-WIS/DRMM

**2. 2017-3.1.3(CM-I)/Implementation of the Decision 15 of EC-69 regarding the International Exchange of Snow Data**

**AMEND:**

in B/C1.8,

**B/C1.8 State of ground, snow depth, ground minimum temperature  
<3 02 037>**

**B/C1.8.1 State of ground** (with or without snow) – Code table 0 20 062

State of ground without snow or with snow shall be reported using Code table 0 20 062. The synoptic hour at which this datum shall be reported is determined by regional decision. **In addition to the synoptic hour, this datum should be reported at other synoptic hours, i.e. four times a day.**

**B/C1.8.2 Total snow depth**

Total snow depth (0 13 013) shall be reported in metres (with precision in hundredths of a metre). The synoptic hour at which this datum shall be reported is determined by regional decision. **In addition to the synoptic hour, this datum should be reported at other synoptic hours, i.e. four times a day.**

**3. 2017-3.1.2(CM-I)/Regulations for reporting SHIP data in TDCF (B/C10)**

**AMEND:**

in B/C10.2.2.2.

B/C10.2.2.2 Direction and speed of motion of moving observing platform may be included as missing values in reports from **ships that have not been directly recruited and instrumented by an NMHS**, except when reporting from an area for which the ship report collecting centre, in order to meet a requirement of a search and rescue centre, has requested inclusion of direction and speed of ship motion as a routine procedure. [12.3.1.2(b)]

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PROCEDURES FOR AMENDING WMO MANUALS AND GUIDES THAT ARE THE RESPONSIBILITY OF  
THE COMMISSION FOR BASIC SYSTEMS

(Rec. 15 (CBS-Ext.(2014)/Res. 21 (Cg-17)/Res. 12 (EC-68))

Ref.: 01356/2018-1.8 OBS-WIS/DRMM

1. DESIGNATION OF RESPONSIBLE COMMITTEES

The Commission for Basic Systems (CBS) shall, for each Manual and Guide, designate one of its Open Programme Area Groups (OPAGs) as being responsible for that Manual and its associated technical guides. The Open Programme Area Group may choose to designate one of its Expert Teams as the designated committee for managing changes to all or part of that Manual; if no Expert Team is designated, the Implementation Coordination Team for the OPAG takes on the role of the designated committee.

2. GENERAL VALIDATION AND IMPLEMENTATION PROCEDURES

2.1 Proposal of amendments

Amendments to a Manual or a Guide managed by CBS shall be proposed in writing to the Secretariat. The proposal shall specify the needs, purposes and requirements and include information on a contact point for technical matters.

2.2 Drafting recommendation

The designated committee for the relevant part of a Manual or a Guide, supported by the Secretariat, shall validate the stated requirement (unless it is consequential to an amendment to the WMO Technical Regulations) and develop a draft recommendation to respond to the requirement, as appropriate.

2.3 Procedures for approval

After a draft recommendation of the designated committee is validated in accordance with the procedure given in section 7 below, depending on the type of amendments, the designated committee should select one of the following procedures for the approval of the amendments:

- (a) Simple (fast-track) procedure (see section 3 below);
- (b) Standard (adoption of amendments between CBS sessions) procedure (see section 4 below);
- (c) Complex (adoption of amendments during CBS sessions) procedure (see section 5 below).

2.4 Date of implementation

The designated committee should define an implementation date in order to give WMO Members sufficient time to implement the amendments after the date of notification. For procedures other than the simple (fast-track) one, if the time between the date of notification and implementation date is less than six months, the designated committee shall document the reasons for its decision.

2.5 Urgent introduction

Regardless of the above procedures, as an exceptional measure, the following procedure accommodates urgent user needs to introduce elements in lists of technical details, or to correct errors:

- (a) A draft recommendation developed by the designated committee shall be validated according to the steps defined in section 7 below;
- (b) The draft recommendation for pre-operational use of a list entry, which can be used in operational data and products, shall be approved by the chairperson of the designated committee and the chairperson of the responsible OPAG, and the president of CBS. A listing of pre-operational list entries is kept online on the WMO web server;
- (c) Pre-operational list entries shall then be submitted for approval by one of the procedures in 2.3 above for operational use;
- (d) Any version numbers associated with the technical implementation should be incremented at the least significant level.

## 2.6 Issuing updated version

Once amendments to a Manual or a Guide are adopted, an updated version of the relevant part of the Manual shall be issued in the languages agreed for its publication. The Secretariat shall inform all Members of the availability of a new updated version of that part at the date of notification mentioned in 2.4 above. If amendments are not incorporated into the published text of the relevant Manual or Guide at the time of the amendment, there should be a mechanism to publish the amendments at the time of their implementation and to retain a permanent record of the sequence of amendments.

## 3. SIMPLE (FAST-TRACK) PROCEDURE

### 3.1 Scope

The simple (fast-track) procedure shall be used only for changes to components of the Manual that have been designated and marked as "technical specifications to which the simple (fast-track) procedure for the approval of amendments may be applied".

Note: An example would be the addition of code list items in the *Manual on Codes* (WMO-No. 306).

### 3.2 Endorsement

Draft recommendations developed by the responsible committee, including a date for implementation of the amendments, shall be submitted to the chairperson of the relevant OPAG for endorsement.

### 3.3 Approval

#### 3.3.1 *Minor adjustments*

Correcting typographical errors in descriptive text is considered a minor adjustment, and will be done by the Secretariat in consultation with the president of CBS. See Figure 1.

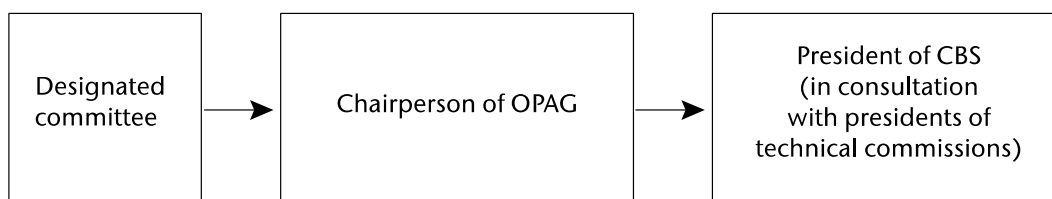


Figure 1. Adoption of amendments to a Manual by minor adjustment

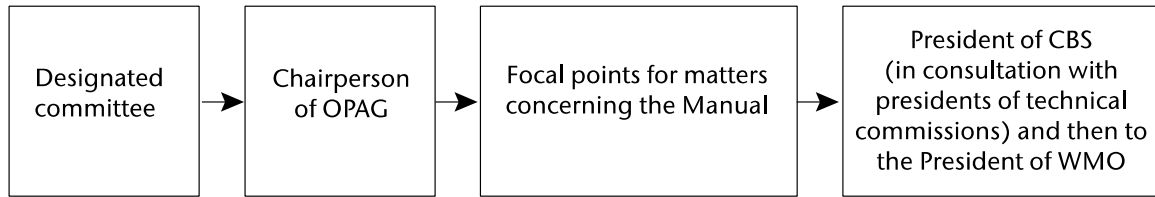


Figure 2. Adoption of amendments to a Manual by simple (fast-track) procedure

### 3.3.2 *Other types of amendments*

For other types of amendments, the English version of the draft recommendation, including a date of implementation, should be distributed to the focal points for matters concerning the relevant Manual for comments, with a deadline of two months for the reply. It should then be submitted to the president of CBS for consultation with presidents of technical commissions affected by the change. If endorsed by the president of CBS, the change should be passed to the President of WMO for consideration and adoption on behalf of the Executive Council (EC).

### 3.3.3 *Frequency*

The implementation of amendments approved through the simple (fast-track) procedure can be twice a year in May and November. See Figure 2.

## 4. STANDARD (ADOPTION OF AMENDMENTS BETWEEN CBS SESSIONS) PROCEDURE

### 4.1 Scope

The standard (adoption of amendments between CBS sessions) procedure shall be used for changes that have an operational impact on those Members who do not wish to exploit the change, but that have only minor financial impact, or that are required to implement changes in the *Technical Regulations* (WMO-No. 49), Volume II – Meteorological Service for International Air Navigation.

### 4.2 Approval of draft recommendations

For the direct adoption of amendments between CBS sessions, the draft recommendation developed by the designated committee, including a date of implementation of the amendments, shall be submitted to the chairperson of the responsible OPAG and president and vice-president of CBS for approval. The president of CBS shall consult with the presidents of technical commissions affected by the change. In the case of recommendations in response to changes in the *Technical Regulations* (WMO-No. 49), Volume II – Meteorological Service for International Air Navigation, the president of CBS shall consult with the president of the Commission for Aeronautical Meteorology.

### 4.3 Circulation to Members

Upon approval of the president of CBS, the Secretariat sends the recommendation to all Members, in the languages in which the Manual is published, including a date of implementation of the amendments, for comments to be submitted within two months following the dispatch of the amendments. If the recommendation is sent to Members via electronic mail, there shall be public announcement of the amendment process including dates, for example by WMO Operational Newsletter on the WMO website, to ensure all relevant Members are informed.



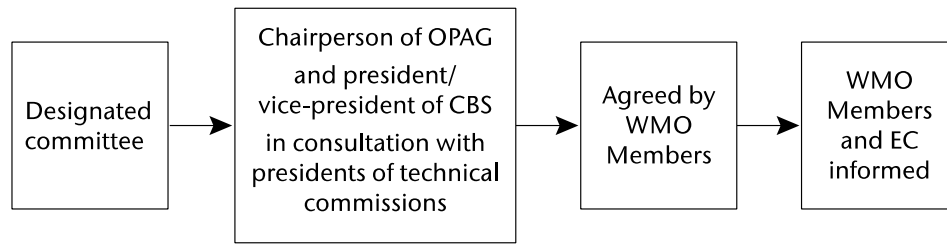


Figure 3. Adoption of between CBS sessions

#### 4.4 Agreement

Those Members not having replied within the two months following the dispatch of the amendments are implicitly considered as having agreed with the amendments.

#### 4.5 Coordination

Members are invited to designate a focal point responsible to discuss any comments/disagreements with the designated committee. If the discussion between the designated committee and the focal point cannot result in an agreement on a specific amendment by a Member, this amendment will be reconsidered by the designated committee. If a Member cannot agree that the financial or operational impact is minor, the redrafted amendment shall be approved by the complex (adoption of amendments during CBS sessions) procedure described in section 5 below.

#### 4.6 Notification

Once amendments are agreed by Members, and after consultation with the chairperson of the responsible OPAG, the vice-president of CBS and the president of CBS (who should consult with presidents of other commissions affected by the change), the Secretariat notifies at the same time the Members and the members of the Executive Council of the approved amendments and of the date of their implementation. See Figure 3.

### 5. COMPLEX (ADOPTION OF AMENDMENTS DURING CBS SESSIONS) PROCEDURE

#### 5.1 Scope

The complex (adoption of amendments during CBS sessions) procedure shall be used for changes for which the simple (fast-track) procedure or standard (adoption of amendments between CBS sessions) procedure cannot be applied.

#### 5.2 Procedure

For the adoption of amendments during CBS sessions, the designated committee submits its recommendation, including a date of implementation of the amendments, to the Implementation Coordination Team of the responsible Open Programme Area Group. The recommendation is then passed to the presidents of technical commissions affected by the change for consultation, and to a CBS session that shall be invited to consider comments submitted by presidents of technical commissions. The document for the CBS session shall be distributed not later than 45 days before the opening of the session. Following the CBS session, the recommendation shall then be submitted to a session of the Executive Council for decision. See Figure 4.

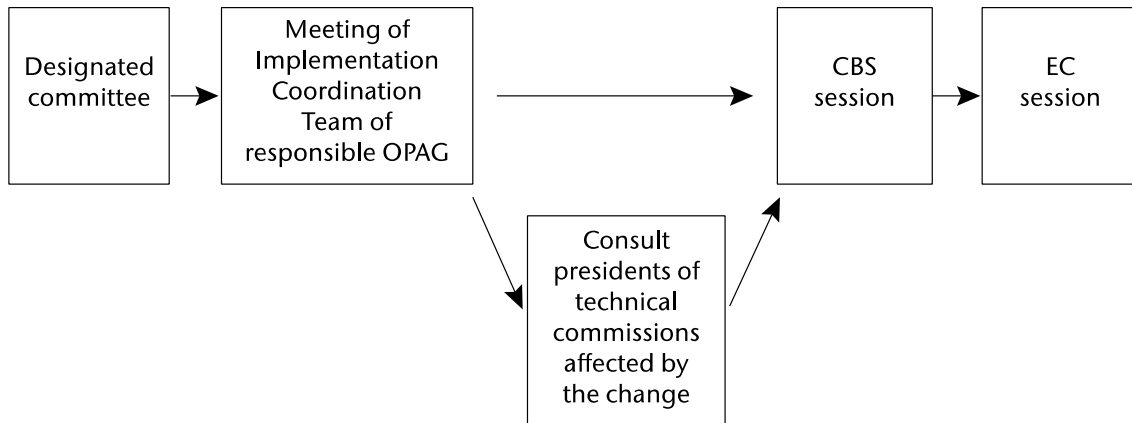


Figure 4. Adoption of amendments during CBS sessions

## 6. PROCEDURE FOR THE CORRECTION OF EXISTING MANUAL CONTENTS

### 6.1 Correcting errors in items within Manuals

Where a minor error in the specification of an item that defines elements within a Manual is found, for example, a typing error or an incomplete definition, the item shall be amended and re-published. Any version numbers associated with items edited as a result of the change should be incremented at their lowest level of significance. If, however, the change has an impact on the meaning of the item, then a new item should be created and the existing (erroneous) item marked as deprecated. This situation is considered a minor adjustment according to 3.3.1 above.

Note: An example of an item for which this type of change applies is a code list entry for the Table Driven Code Forms or WMO Core Metadata Profile, in which the description contains typographical errors that can be corrected without changing the meaning of the description.

### 6.2 Correcting an error in the specification of how conformance with the requirements of the Manual can be checked

If an erroneous specification of a conformance-checking rule is found, the preferred approach is to add a new specification using the simple (fast-track) procedure or standard (adoption of amendments between CBS sessions) procedure approach. The new conformance-checking rule should be used instead of the old. An appropriate explanation shall be added to the description of the conformance-checking rule to clarify the practice along with the date of the change.

Note: An example of such a change would be correcting a conformance-checking rule in the WMO Core Metadata Profile.

### 6.3 Submission of corrections to errors

Such changes shall be submitted through the simple (fast-track) procedure.

## 7. VALIDATION PROCEDURE

### 7.1 Documentation of need and purpose

The need for, and the purpose of, the proposal for changes should be documented.

7.2 Documentation of result

This documentation shall include the results of validation testing of the proposal as described in 7.3 below.

7.3 Testing with relevant applications

For changes that have an impact on automated processing systems, the extent of the testing required before validation should be decided by the designated committee on a case-by-case basis, depending on the nature of the change. Changes involving a relatively high risk and/or impact on the systems should be tested by the use of at least two independently developed tool sets and two independent centres. In that case, results should be made available to the designated committee with a view to verifying the technical specifications.

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