



WMO OMM

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.: OBS/WIS/DRMM/DRC

GENEVA, 7 March 2016

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 **2 May 2016**

Dear Sir/Madam,

In accordance with the "Procedures for Maintaining Manuals and Guides Managed by the Commission for Basic Systems" (Resolution 21 (Cg-17)) effective from 1 January 2016, I am pleased to attach herewith in Annex 1 draft amendments to the *Manual on Codes*, Volume I.2.

I would be grateful if you could consider these draft amendments for implementation on 16 November 2016, and if you could inform me of your concurrence on these amendments, as soon as possible but within the two months following the date of dispatch of this letter, so that the amendments will be incorporated in the next edition of the *Manual on Codes* in an appropriate manner.

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 Data Representation, Maintenance and Monitoring (IPET-DRMM). Please note that those WMO Members having not replied within the 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 (https://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,

(E. Manaenkova)
for the Secretary-General

To: Permanent Representatives (or Directors of Meteorological or Hydrometeorological Services) of Members of WMO (PR-6892)

cc: Hydrological Advisers to Permanent Representatives

AMENDMENTS TO THE *MANUAL ON CODES* (WMO-No. 306)

In accordance with the Procedures for Maintaining Manuals and Guides Managed by the Commission for Basic Systems (see Annex II), the draft amendments to the Manual have been approved by the president of CBS. The proposed date of implementation is 16 November 2016.

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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

1. [Complete encoding of information required for georeferencing grid points in GRIB](#)

Part C – Common Features to Binary and Alphanumeric Codes

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

2. [Clarifications of B/C30 and B/C32 Regulations](#)
3. [Amendment to Annex II to B/C25 Regulations](#)
4. [Clarification of upper-air wind reporting nearby the Poles](#)

1. Complete encoding of information required for georeferencing grid points in GRIB

Add a note:

In GRIB2 Code table 3.2 – Shape of the Earth

- (2) With respect to the Code figures 0, 1, 3, 6, and 7, coordinates can only be unambiguously interpreted, if the coordinate reference system, in which they are embedded, is known. Therefore, defining the shape of the Earth alone without coordinate system axis origins is ambiguous. Generally, the prime meridian defined in the geodetic system WGS84 can be safely assumed to be the longitudinal origin. However, because these code figures do not specify the longitudinal origin explicitly, it is suggested to contact the originating center, if high precision coordinates are needed in order to obtain the precise details of the coordinate system used.

2. Clarifications of B/C30 and B/C32 Regulations

Add B/C30.4.4:

B/C30.4.4 Date/time (of beginning of the one-month period for precipitation data on the last day of the previous month)

If the regional or national reporting practices require reporting monthly precipitation data for period which starts on the last day of the previous month in UTC, template TM 307078 should be used. The beginning of the period for monthly precipitation data shall be specified by short time displacement (0 04 074) set to a relevant negative value. The beginning of one-month period for which the normals of precipitation are reported, shall be specified in a similar way.

Add B/C32.4.4:

B/C32.4.4 Date/time (of beginning of the one-month period for precipitation data on the last day of the previous month)

If the regional or national reporting practices require reporting monthly precipitation data for period which starts on the last day of the previous month in UTC, template TM 308023 should be used. The beginning of the period for monthly precipitation data shall be specified by short time displacement (0 04 074) set to a relevant negative value. The beginning of one-month period for which the normals of precipitation are reported, shall be specified in a similar way.

3. Amendment to Annex II to B/C25 Regulations

Amend notes to 3 09 052 in B/C25:

Notes:

- (1) Time of launch 3 01 013 shall be reported with the highest possible accuracy available. If the launch time is not available with second accuracy, the entry for seconds shall be put to zero.

- (2) Long time displacement 0 04 086 represents the time offset from the launch time 3 01 013 (in seconds).
- (3) Latitude displacement 0 05 015 represents the latitude offset from the latitude of the launch site. Longitude displacement 0 06 015 represents the longitude offset from the longitude of the launch site.
- (4) If additional information on sounding is available, the sequence <3 09 052> shall be preceded by sequences suitable for reporting additional information on sounding systems.
- (5) If the sounding data are obtained from upper-air systems where pressure is derived from geopotential height by integration of hydrostatic equation, the geopotential calculation method shall be recorded using 0 02 191 within the preceding sequences.

Delete B/C25.11.

Amend Annex II to B/C25 as follows

Additional information on radiosonde ascent

(Additional information on radiosonde ascent)		
3 01 128	0 01 081	Radiosonde serial number
	0 01 082	Radiosonde ascension number
	0 01 083	Radiosonde release number
	0 01 095	Observer identification
	0 02 015	Radiosonde completeness
	0 02 016	Radiosonde configuration
	0 02 017	Correction algorithms for humidity measurements
	0 02 066	Radiosonde ground receiving system
	0 02 067	Radiosonde operating frequency
	0 02 080	Balloon manufacturer
	0 02 081	Type of balloon
	0 02 082	Weight of balloon
	0 02 083	Type of balloon shelter
	0 02 084	Type of gas used in balloon
	0 02 085	Amount of gas used in balloon
	0 02 086	Balloon flight train length
	0 02 095	Type of pressure sensor
	0 02 096	Type of temperature sensor
	0 02 097	Type of humidity sensor
	0 02 103	Radome
	0 02 191	Geopotential height calculation
	0 25 061	Software identification and version number
	0 35 035	Reason for termination

4. Clarification of upper-air wind reporting nearby the Poles

Amend B/C20.5.2.5:

B/C20.5.2.5 Wind direction and speed

The wind direction (0 11 001) shall be reported in degrees true and the wind speed (0 11 002) shall be reported in metres per second (with precision in tenths of a metre per second).

Note:

- (1) Wind direction measured at a station within 1° of the North Pole or within 1° of the South Pole shall be reported in such a way that the azimuth ring shall be aligned with its zero coinciding with the Greenwich 0° meridian.

Amend B/C25.7.2.8:

B/C25.7.2.8 Wind direction and speed

The wind direction (0 11 001) shall be reported in degrees true and the wind speed (0 11 002) shall be reported in metres per second (with precision in tenths of a metre per second).

Note:

- (1) Wind direction measured at a station within 1° of the North Pole or within 1° of the South Pole shall be reported in such a way that the azimuth ring shall be aligned with its zero coinciding with the Greenwich 0° meridian.

Amend B/C26.5.2.8:

B/C26.5.2.8 Wind direction and speed

The wind direction (0 11 001) shall be reported in degrees true and the wind speed (0 11 002) shall be reported in metres per second (with precision in tenths of a metre per second).

Note:

- (1) Wind direction measured in sounding originated from a launch site within 1° of the North Pole or within 1° of the South Pole shall be reported in such a way that the azimuth ring shall be aligned with its zero coinciding with the Greenwich 0° meridian.
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**PROCEDURES FOR MAINTAINING MANUALS AND GUIDES
MANAGED BY THE COMMISSION FOR BASIC SYSTEMS**

**1. PROCEDURES FOR AMENDING WMO MANUALS THAT ARE THE RESPONSIBILITY
OF THE COMMISSION FOR BASIC SYSTEMS**

1.1 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 Area Programme 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.

1.2 General validation and implementation procedures

1.2.1 Proposal of amendments

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

1.2.2 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.

1.2.3 Procedures for approval

After a draft recommendation of the designated committee is validated in accordance with the procedure given in section 1.7 below, depending on the type of amendments, the designated committee should select one of the following procedures for the approval of the amendments:

- Simple (fast-track procedure) (see 1.3);
- Standard (procedure for the adoption of amendments between CBS sessions) (see 1.4);
- Complex (procedure for the adoption of amendments during CBS sessions) (see 1.5).

1.2.4 Date of implementation

The designated committee should define an implementation date in order to give sufficient time to the WMO Members 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 their decision.

1.2.5 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 1.7;
- (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 on-line on the WMO web server;
- (c) Pre-operational list entries shall then be submitted for approval by one of the procedures in 1.2.3 for operational use;
- (d) Any version numbers associated with the technical implementation should be incremented at the least significant level.

1.2.6 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 WMO Members of the availability of a new updated version of that part at the date of notification mentioned in 1.2.4. 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.

1.3 Simple (fast-track) procedure

1.3.1 Scope

The simple (fast-track) procedure shall be used only for changes that impact only on those Members wishing to exploit the change.

Note: an example would be the addition of code list items in the *Manual on Codes*.

1.3.2 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.

1.3.3 Approval

1.3.3.1 Minor adjustments

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

1.3.3.2 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 and adoption on behalf of the Executive Council (EC).

1.3.3.3 Frequency

The implementation of amendments approved through the fast track procedure can be twice a year in May and November.

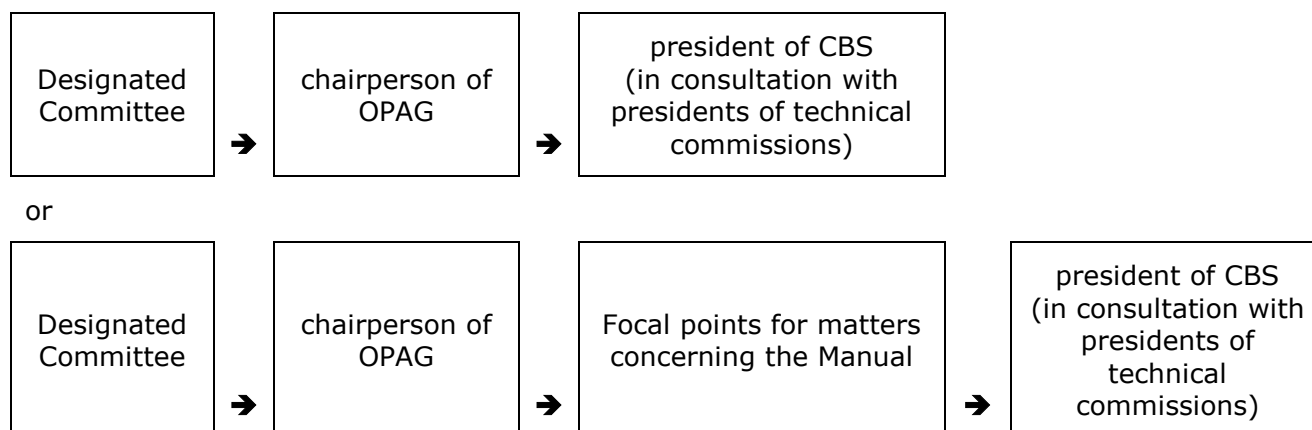


Figure 1 – Adoption of amendments to a Manual by simple (fast-track) procedure

1.4 Standard (procedure for the adoption of amendments between CBS sessions)

1.4.1 Scope

The standard procedure (procedure for the adoption of amendments between CBS sessions) shall be used for changes that have an operational impact on those Members that 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.

1.4.2 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 the Commission for Basic Systems shall consult with the president of the Commission for Aeronautical Meteorology.

1.4.3 Circulation to Members

Upon approval of the president of CBS, the Secretariat sends the recommendation to all WMO 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.

1.4.4 Agreement

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

1.4.5 Coordination

WMO 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

WMO Member, this amendment will be reconsidered by the designated committee. If a WMO Member cannot agree that the financial or operational impact is minor, the redrafted amendment shall be approved by the complex procedure described in Section 1.5.

1.4.6 Notification

Once amendments are agreed by WMO 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 WMO Members and the members of the Executive Council of the approved amendments and of the date of their implementation.

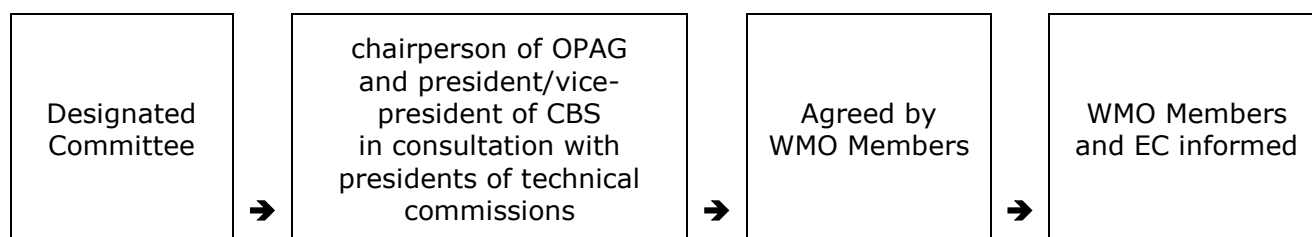


Figure 2 – Adoption of amendments between CBS sessions

1.5 Complex (procedure for the adoption of amendments during CBS sessions)

1.5.1 Scope

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

1.5.2 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 an EC session for decision.

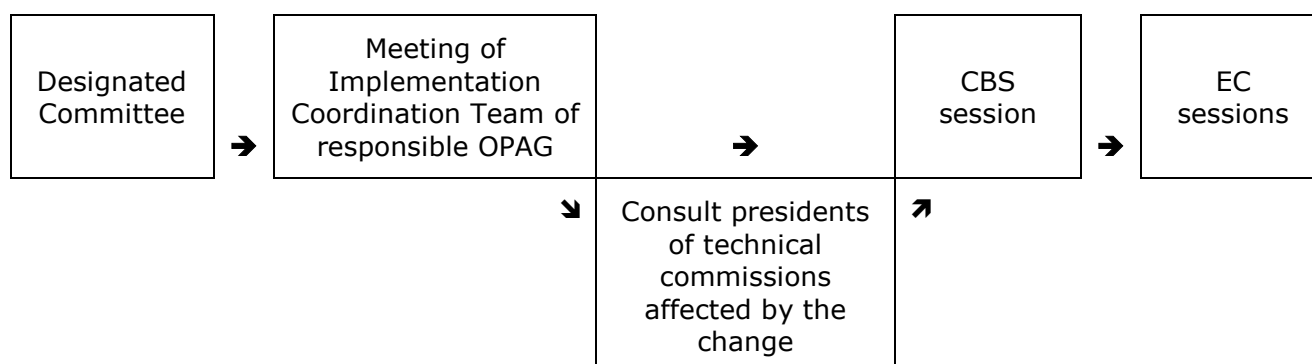


Figure 3 – Adoption of amendments during CBS sessions

1.6 Procedure for the correction of existing Manual contents

1.6.1 Correcting errors in items within Manuals

Where a minor error in the specification of an item that defines elements within a Manual is found (e.g. typing error or 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 impacts 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 1.3.3.1 above.

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

1.6.2 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 (procedure for adoption of amendments between CBS sessions) 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.

1.6.3 Submission of corrections to errors

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

1.7 Validation procedure

1.7.1 Documentation of need and purpose

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

1.7.2 Documentation of result

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

1.7.3 Testing with relevant applications

For changes that 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.
