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| WORLD METEOROLOGICAL ORGANIZATION  COMMISSION FOR BASIC SYSTEMS  -----------------------------  SECOND MEETING OF  INTER-PROGRAMME EXPERT TEAM ON CODES MAINTENANCE  OFFENBACH, GERMANY, 28 MAY - 1 JUNE 2018 |  | IPET-CM-II / Doc. 4.1  16.05.2018  -------------------------  ITEM 4.1  ENGLISH ONLY |

MANUAL ON CODES: TRADITIONAL ALPHANUMERIC CODES (AVIATION)

Possible Amendment 79 to ICAO Annex 3

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**Summary and Purpose of Document**

This document explains the discussion on how to deal with missing/incorrect mandatory parameters within the METAR by ICAO Meteorological Panel (METP) Working Group on Meteorological Information Exchange (WG-MIE). Some regulations will be proposed to Amendment 79 to ICAO Annex 3 (applicable, November 2020). The WMO Manual on Codes may need to be modified accordingly if the proposals are agreed by ICAO.

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**ACTION PROPOSED**

The meeting is requested to note the information and invited to consider how to reflect ICAO Annex 3 amendments to the Manual on Codes.

**ANNEXES:**

1. PROPOSED UPDATE TO ANNEX 3 (ICAO METP WG-MIE)

**DISCUSSIONS**

ICAO has discussed an update to Annex 3, amendment 79, and related guidance material to provide information on how to deal with missing/incorrect mandatory meteorological parameters within the METAR to ensure that the other parameters are still available. ICAO Annex 3 does not clearly regulate the usage of missing parameters, such as the solidi (/) within the METAR when the element is temporarily missing or its value considered temporarily as incorrect.

Several options were proposed to indicate missing parameters in Annex 3:

a) Adding a global note in Annex 3 but this would apply for all METAR parameters, which is not desirable;

b) Adding a note per element, depending on the operational importance of the element (e.g. Dew Point Temperature has an operational importance different from Pressure) in each paragraph of the Annex; or

c) Indicate it in the template itself.

ICAO WG-MIE decided to propose option c) within the METAR template (Table A3-2) in Annex 3. Refer to ANNEX.

It was also presented whether the METAR should be sent whatever the missing parameter is or that some parameters should never be missing/NIL i.e. if such a parameter is missing, then the METAR will be sent as NIL (for example: pressure).

Some specifications for missing data exist in the Manual on Codes:

a) Missing data is specified by the solidi (/) generally in Section B of Manual on Codes Volume I.1

Section B

SPECIFICATIONS OF SYMBOLIC LETTERS

/

// Missing data.

…

(1) The number of solidi depends on the number of symbolic letters for which no data can be reported.

b) **15.4** specifies missing data when a report contains fully automated observations (AUTO)

**15.4** Code word AUTO

The optional code word AUTO shall be inserted before the wind group when a report contains fully automated observations without human intervention. The ICAO requirement is that all of the specified elements shall be reported. However, if any element cannot be observed, the group in which it would have been encoded shall be replaced by the appropriate number of solidi. The number of solidi depends on the number of symbolic letters for the specific group which is not able to be reported; i.e. four for the visibility group, two for the present weather group and three or six for the cloud group, as appropriate.

c) Regulations for some elements include specifications of missing data

**15.8** Group w´w´

**15.8.19** When an automatic observing system is used and the present weather cannot be observed, the present weather group shall be replaced by //.

NsNsNshshshs

or

**VV**hshshs

**15.9** Group or

**NSC**

or

**NCD**

**15.9.1.6** When cumulonimbus clouds or towering cumulus clouds are detected by the automatic observing system and the cloud amount and/or the height of cloud base cannot be observed, the cloud amount and/or the height of cloud base elements should be replaced by ///.

**15.9.1.7** Types of cloud other than significant convective clouds shall not be identified. Significant convective clouds, when observed, shall be identified by appending the letter abbreviations CB (cumulonimbus) or TCU (cumulus congestus of great vertical extent), as appropriate, to the cloud group without a space. When an automatic observing system is used and the cloud type cannot be observed by that system, the cloud type in each cloud group shall be replaced by ///.

**15.9.2** Vertical visibility **VV**hshshs

When the sky is obscured and information on vertical visibility is available, the group **VV**hshshs shall be reported, where hshshs is the vertical visibility in units of 30 metres (hundreds of feet). When information on vertical visibility is not available due to a temporary failure of a sensor or system, the group shall read **VV**///.

**15.9.1.6** and **15.9.1.7** specify /// in some cases of cloud observation but it doesn’t mention to temporarily missing or its value considered temporarily as incorrect.

ICAO WG-MIE will propose to change the METAR template (Table A3-2) in Annex 3 as shown in ANNEX. As the METAR template (Table A3-2) is not included in the WMO Manual on Codes, the meeting will consider possible options to reflect ICAO Annex 3 amendments to the Manual on Codes, depending on a conclusion to be made by ICAO:

a) The manual on Codes will not be changed applying Section B of the Manual on Codes Volume I.1 to temporarily missing or incorrect value

b) The manual on Codes will be changed in accordance with the modification of the METAR template (Table A3-2) in Annex 3

**ANNEX**

**PROPOSED UPDATE TO ANNEX 3 (ICAO METP WG-MIE/4)**







