

Extract relating to codes and format from WMO documents

COMMISSION FOR BASIC SYSTEMS
ABRIDGED FINAL REPORT
OF THE
EXTRA ORDINARY SESSION
London, 24 September – 5 October 1990
WMO - No. 751

GENERAL SUMMARY OF THE WORK OF THE SESSION

6.4 WWW DATA MANAGEMENT (DM), including codes (agenda item 6.4)

6.4.37 The Commission reviewed and agreed to proposed modifications to the SYNOP/SHIP code and regulations of BATHY and TESAC to address the following requirements:

(a) Further standardization in reporting station pressure for use in NWP models whose vertical coordinates depend on surface pressure (Section 1, group 3P_oP_oP_oP_o);

(b) The use of pressure tendency algorithms as adopted by Recommendation 7 (CIMO-IX) for application with synoptic automatic weather stations (Section 1, group 5app);

(c) The indication of the actual time of observation, in particular for asynoptic data obtained by interrogation of automatic stations by satellite (Section 1, 9-group in the form of 9GGgg);

(d) Reporting of other types of solar radiation in addition to net solar radiation as required by CagM and for use in meso-scale forecast models to initiate and verify fluxes of solar and terrestrial radiation in the models (Section 3, groups 5j₁j₂j₃j₄ j₅j₆j₇j₈j₉ in the form 55SSS j₅F₂₄F₂₄F₂₄F₂₄ or 553SS j₅FFFF);

(e) Follow-up action on CBS Recommendation 12 (CBS-IX) on the global use of the 7-group in Section 3 in the form 7R₂₄R₂₄R₂₄R₂₄;

(f) Corrections and minor editorial changes to improve and clarify certain specifications of

supplementary information (Section 3, group 9S_pS_pS_pS_p);

(g) Minor modification to regulation of BATHY and TESAC as given in the annex to paragraph 3.8.1 of the report of the subgroup to resolve a problem noted in the encoding of the optional group for reporting the surface wind.

Recommendation 13 (CBS-Ext. (90)) – Proposed modifications to FM 12-IX SYNOP and FM 13-IX SHIP and minor modifications to regulations of FM 63-IX BATHY and FM 64-IX TESAC – was adopted.

RECOMMENDATIONS

Rec. 13 (CBS-Ext. (90)) – PROPOSED MODIFICATIONS TO FM 12-IX SYNOP AND FM 13-IX SHIP AND MINOR MODIFICATIONS TO REGULATIONS OF FM 63-IX BATHY AND FM 64-IX TESAC

THE COMMISSION FOR BASIC SYSTEMS,

NOTING:

- (1) Resolution 5 (CBS-IX) – Working Group on Data Management (DM),
- (2) The final report of the first session of the CBS Working Group on Data Management Subgroup on Codes, general summary, paragraph 3.5, 3.6, 3.7, 3.8, 3.9 and 3.11,
- (3) The final report of the first session of the CBS Working Group on Data Management, general summary, paragraph 4.2.3,

CONSIDERING:

- (1) That there is a need to reflect in the SYNOP and SHIP regulations the pressure tendency algorithms for synoptic automatic weather stations adopted by Recommendation 7 (CIMO-IX) and further standardize procedures for reporting station level pressure,
- (2) That there is a need to update global regulations with respect to the use of group (7R₂₄R₂₄R₂₄R₂₄) in Section 3 of SYNOP,
- (3) That there is a need to clarify interpretation of regulations 63.2.2 and 64.2.2 of FM 63-IX BATHY and FM 64-IX TESAC,
- (4) That there is a need for reporting in SYNOP other types of solar radiation in addition to net solar radiation,
- (5) That there is a need for indication of actual time of observation in SYNOP/SHIP code,

RECOMMENDS that the modifications to FM 12-IX SYNOP, FM 13-IX SHIP and minor modifications to regulations of FM 63-IX BATHY and FM 64-IX TESAC as given in the annex to this recommendation be adopted

for use as from 1 November 1991;

REQUESTS the Secretary-General to arrange for the inclusion of the modifications in Volume I of the Manual on Codes.

Annex to recommendation 13 (CBS-Ext. (90))
PROPOSED MODIFICATIONS TO FM 12-IX SYNOP AND FM 13-IX SHIP AND
MINOR MODIFICATIONS TO REGULATIONS OF FM 63-IX BATHY AND FM 64-IX TESAC

FM 12-IX SYNOP and FM 13-IX SHIP

1. Amend the code form as follows:

Section 3 ... (7R₂₄R₂₄R₂₄R₂₄) ...

2. Replace Regulations 12.2.3.5.2, as.2.3.5.3 and 12.2.4 with the following:

12.2.3.5.2

The pressure tendency over the past three hours, a, shall wherever possible, be determined on the basis of pressure sampled at equi-spaced intervals not exceeding one hour.

Note:

Algorithms for selecting the appropriate code figure are included in publication WMO-No.8, Guide to Meteorological Instruments and Methods of Observation.

12.2.3.5.3

Where it is not possible to apply the algorithms specified in Regulation 12.2.3.5.2 in reports from automatic weather stations, a shall be coded as 2 when the tendency is positive; 7 when the tendency is negative; and 4 when the atmospheric pressure is the same as three hours before.

12.2.4

Group 3P_oP_oP_oP_o

This group shall be included in reports for global exchange from land stations, together with either group

4PPPP or, in accordance with Regulation 12.2.3.4.2, the group 4a₃hhh.

Note:

Inclusion of this group at other times is left to the decision of individual members.

3. Replace Regulations 12.4.1 and 12.4.2 and add new Regulation 12.4.9 and renumber present Regulation 12.4.9 to 12.4.10 as 12.4.10 to 12.4.11 as follows:

12.4.1

The inclusion of groups with indicator figures 1 up to and including 9 shall be decided regionally.

12.4.2

The symbolic form of the group with indicator figure 0 shall be developed regionally, as well as the rules for their inclusion in Section 3.

12.4.9

Group (7R₂₄R₂₄R₂₄R₂₄)

This group shall be used to report total amount of precipitation during the 24-hour period ending at the time of the observation, in tenths of millimetre (encoded 9998 for 999.8 mm or more and 9999 for trace).

Renumber Regulation 12.4.9 to 12.4.10 as 12.4.10 to 12.4.11

CODE TABLES

Under Code Table 0200

Change reference to Regulation to 12.2.3.5.3

FM 63-IX BATHY and FM 64-IX TESAC

Replace Regulations 63.2.2 and 64.2.2 with the following:

63.2.2

For the reporting of the value of the direction and speed of the wind, regulations for FM 13-IX SHIP shall apply.

NOTE: The unit of wind speed is indicated by i_u (code table 1853).

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NOTE: The unit of wind speed is indicated by i_u (code table 1853).

Proposed amendment to SYNOP/SHIP

Code Regulation 12.4.7.1.1

12.4.7.1.1

When the group $5j_1j_2j_3j_4$ is used in the form $55j_2j_3j_4$ or $555j_3j_4$ the supplementary group $j_5j_6j_7j_8j_9$ shall be added to report net solar radiation, global solar radiation, diffused solar radiation, longwave radiation, short-wave radiation, net short-wave radiation or direct solar radiation if data are available. The group shall be repeated as often as necessary.

NOTE: If sunshine duration is not available the group shall be reported as $55///$ or $553//$ whenever the group $j_5j_6j_7j_8j_9$ is required to report radiation data.

12.4.7.1.2

When the group $5j_1j_2j_3j_4$ is used, one or more of the following symbolic expressions shall be adopted:

(a) $5EEEi_E$

to report the daily amount of either evaporation or evapotranspiration;

(b) $54g_0s_nd_T$

to report temperature change data in period covered by W_1W_2 ;

(c) $55SSS$

to report daily hours of sunshine;

(d) $553SS$

to report the duration of sunshine in the past hour

Increment heading on sub-paragraphs (d), to (g), to become (e) to (h)

12.4.7.2

Daily evaporation or evapotranspiration.

12.4.7.2.1

The symbolic expression $5EEEi_E$ shall be used to report either daily evaporation or evapotranspiration.

Delete Regulation 12.4.7.2.3

Regulation 12.4.7.4 to read as follows:

12.4.7.4

Duration of sunshine and radiation data

12.4.7.4.1

The symbolic expression SSS shall be used to report the daily sunshine in hours and tenths of an hour.

The symbolic expression SS (in group $553SS$) shall be used to report duration of sunshine in the past hour in tenths of an hour.

Add new Regulations 12.4.7.4.3, 12.4.7.4.4 and 12.4.7.4.5 as follows:

12.4.7.4.3

When the group $5j_1j_2j_3j_4$ has the form $553SS$ the supplementary group(s) j_5FFFF may take one or more of the following forms:

$j_5 = 0$: $FFFF$ = Positive net radiation during the previous hour in $KJ\ m^{-2}$.

$j_5 = 1$: $FFFF$ = Negative net radiation during the previous hour in $KJ\ m^{-2}$.

$j_5 = 2$: $FFFF$ = Global solar radiation during the previous hour in $KJ\ m^{-2}$.

$j_5 = 3$: $FFFF$ = Diffuse solar radiation during the previous hour in $KJ\ m^{-2}$.

$j_5 = 4$: $FFFF$ = Downward long-wave radiation during the previous hour in $KJ\ m^{-2}$.

$j_5 = 5$: $FFFF$ = Upward long-wave radiation during the previous hour in $KJ\ m^{-2}$.

$j_5 = 6$: $FFFF$ = Short-wave radiation during the previous hour in $KJ\ m^{-2}$.

$j_5 = 7$: $FFFF$ = Net short-wave radiation during the previous hour in $KJ\ m^{-2}$.

$j_5 = 8$: $FFFF$ = Direct solar radiation during the previous hour in $KJ\ m^{-2}$.

12.4.4.4

When the group $5j_1j_2j_3j_4$ has the form $55SSS$ the supplementary group(s) $j_5F_{24}F_{24}F_{24}F_{24}$ may take one or

more of the following forms:

$j_5 = 0 : {}_5F_{24}F_{24}F_{24}F_{24} =$ Positive net radiation during the preceding 24 hours in $J\text{ cm}^{-2}$.

$j_5 = 1 : {}_5F_{24}F_{24}F_{24}F_{24} =$ Negative net radiation during the preceding 24 hours in $J\text{ cm}^{-2}$.

$j_5 = 2 : {}_5F_{24}F_{24}F_{24}F_{24} =$ Global solar radiation during the preceding 24 hours in $J\text{ cm}^{-2}$.

$j_5 = 3 : {}_5F_{24}F_{24}F_{24}F_{24} =$ Diffuse solar radiation during the preceding 24 hours in $J\text{ cm}^{-2}$.

$j_5 = 4 : {}_5F_{24}F_{24}F_{24}F_{24} =$ Downward long-wave radiation during the preceding 24 hours in $J\text{ cm}^{-2}$.

$j_5 = 5 : {}_5F_{24}F_{24}F_{24}F_{24} =$ Upward long-wave radiation during the preceding 24 hours in $J\text{ cm}^{-2}$.

$j_5 = 6 : {}_5F_{24}F_{24}F_{24}F_{24} =$ Short-wave radiation during the preceding 24 hours in $J\text{ cm}^{-2}$.

$j_5 = 7 : {}_5F_{24}F_{24}F_{24}F_{24} =$ Net short-wave radiation during the preceding 24 hours in $J\text{ cm}^{-2}$.

$j_5 = 8 : {}_5F_{24}F_{24}F_{24}F_{24} =$ Direct solar radiation during the preceding 24 hours in $J\text{ cm}^{-2}$.

12.4.7.4.5

FFFF shall indicate the absolute value of the amount of solar or terrestrial radiation as appropriate in $KJ\text{ m}^{-2}$ during the preceding hour. ${}_5F_{24}F_{24}F_{24}F_{24}$ shall indicate the absolute value of the amount of solar or terrestrial radiation as appropriate in $J\text{ cm}^{-2}$ during the preceding 24 hours at either 0000, 0600, 1200 or 1800 UTC.

Specification of Symbolic Letters

FFFF Amount of radiation, in kilo joules per square metres over a 1 hour period.
(FM 12-IX Ext., FM 13-IX Ext.)

${}_5F_{24}F_{24}F_{24}F_{24}$ Amount of radiation, in joules per square centimetre over a 24 hour period.
(FM 12-IX Ext., FM 13-IX Ext.)

SS Duration of sunshine, in the past hour in tenths of an hour.
(FM 12-IX Ext., FM 13-IX Ext.)

CODE TABLES

Code table 2061 (a)

Under $j_1 = 5$ delete "daily hours of"

Code table 2061 (b)

Against Code figure 5:

Under j_5 change – Indicator of type of solar or terrestrial radiation (Code figure 0-8 used, 9 not used).

Under j_6 add – Thousands figure of solar or terrestrial radiation.

Under j_7 add – Hundreds figure of solar or terrestrial radiation.

Under j_8 add – Tens figure of solar or terrestrial radiation.

Under j_9 add – Unit figure of solar or terrestrial radiation.

Change footnote to read “in case of $j_1 = 5$, see Regulation 12.4.7.4”.

CODE FORM

Replace group 9hh// in Section 1 of SYNOP/SHIP code with group 9GGgg

Regulations

12.2.8

Change Regulation 12.2.8 to read as follows:

Group 9GGgg

This group shall be included:

(a) When the actual time of observation differs by more than ten minutes from the standard time GG reported in Section 0.

(b) When additionally specified by regional decision.

NOTE: See note to Regulation 12.1.6.

PROPOSED AMENDMENTS TO FM 12-IX SYNOP RELATED CODE TABLE 0264 AND 3778

(1) Proposed minor amendments to Specification of Code Tables 0264 and 3778.

Add the following new specifications under the relevant code tables.

3778

$S_p S_p S_p S_p$ – Supplementary information

...

Decile 20-29: State of the sea, icing phenomena and snow cover

...

$925 T_W T_W$ Water temperature at resorts during the bathing season

...

0264

a_3 – Standard isobaric surface for which the geopotential is reported

Code figure

...

2 925 hPa