A N N E X XX

Annex to Recommendation 22 (CSM-V)

RECOMMENDED CODE FORMS

Part A

Code form for surface reports from land stations

FM 14.E Surface report from land station

SYNOP

Section 1	$M_iM_iM_jM_j$	$YYGGi_u$				
	IIiii	$s_t i_R NVh$	Oddff	1wwWW	$2s_nTTT$	
	$3s_nT_dT_dT_d$	$4P_oP_oP_oP_o$	5PPPP	$6ap_vp_vp_v$	$7RRRt_R$	
	$8N_hC_LC_MC_H$					
Section 2	333	$(0N_sCh_sh_s)$	$(k_sT_xT_xT_nT_n)$	(4Esss)	$(5j_ij_sj_sj_s)$	
	$(6S_pS_Ps_ps_p)$	(7....)	(8....)	(9....)		
Section 3	555	$N'C'H'H'C_t$				
Section 4	*777*	Code groups to be developed nationally				

SYNOP is the name of the code form for a surface report from a land station

The code form is divided into 4 Sections as follows :-

Section	Indicator Group	Information
1	-	Data for global exchange
2	333	Included by regional decision
3	555	Included by national decision
4	*777*	Included by national decision

(1) The identifier groups $M_iM_iM_jM_j$ YYGGi$_u$ are included as the first line of the text of a meteorological bulletin of reports of observations which were made at the same time.

(2) If a Member considers its fixed sea stations (except ocean weather stations) to be in the same category as land stations, the light-stations may report in SYNOP.

(3) Surface observations from automatic stations should, for international exchange, be in the SYNOP code form. The reports may be compiled automatically at the stations or, by any means, at the national collecting centre. In either case the groups with initial indicator figures to be included in Section 1 of the SYNOP are determined by the Member operating the station, except for the group Oddff which is always included

Section 1

(4) The use of groups in Section 1 :-

(i) s_ti_RNVh - This group is always included

(ii) Oddff - When the wind is calm (speed less than 0.5 m/sec or less than 1 knot) this group may be omitted. The code figure s_t then indicates the fact that the wind is calm and the group has been omitted. Oddff is always included in reports from automatic stations.

(iii) 1wwWW - When both the present and past weather cannot be expressed by code figures other than 00, this group may be omitted. The code figure s_t then indicates the present and past weather and the fact that the group is omitted. In reports from automatic stations, the group 1wwWW is included or omitted by national decision, and s_t is coded accordingly,

(iv) $3s_nT_dT_dT_d$ - In reports from automatic stations the group 39UUU may replace the group $3s_nT_dT_dT_d$.

(v) $4P_oP_oP_oP_o$ - This group is included in messages for international exchange when the following conditions apply <u>together</u>:

(a) the station elevation exceeds 200 m from the level to which pressure is reduced;

(b) the reduction method in use does not permit the computation of station pressure from the actual SYNOP report and from information contained in WMO Publications.

(vi) 5PPPP - By Regional agreement, a high level station, which cannot give pressure at M.S.L. to a satisfactory degree of accuracy, reports the geopotential height of an agreed standard pressure level, using the group $5a_3hhh$ in place of the group 5PPPP.

(vii) $6ap_vp_vp_v$ - This group is used to report either three-hour pressure tendency or, in tropical areas by Regional decision, the twenty-four-hour pressure change. If required both three-hour tendency and twenty-four-hour pressure change may be reported by repeating the group.

(viii) $7RRRt_R$ - When there has been no precipitation in the preceding six hours, or when it has not been possible to measure the precipitation in the preceding six hours, the group is omitted. Reports from automatic stations may include the group even if there has been no precipitation. The reason for the omission is given by the code figure reported for i_R.

(ix) $8N_hC_LC_MC_H$ - When there are no clouds (i.e. N = 0), and in the case of an automatic station not equipped to report these data, this group is omitted.

Section 2 - Regional Section

(5) The inclusion of groups in Section 2 will be determined by Regional decision.

(i) $(0N_sCh_sh_s)$ - When this group is reported, the instructions given in Note (3)of FM 11.D, Volume B, apply.

(ii) $(k_sT_xT_xT_nT_n)$ - The period of time covered by the maximum and minimum temperature, and the synoptic hours at which they are reported will be determined by Regional decision.

(iii) (4Esss) - This group will be reported at the main synoptic hours determined by Regional decision.

(iv) $(5j_ij_sj_sj_s)$ - When this group is included, the following set of specifications are used:

j_i	$j_sj_sj_s$		Element	For inclusion by
(0-3)	d'	d'f'f'	$g_od"d"f"f"$	wind change (in period covered by WW)	SHIP, SYNOP (island stations)
	4	$g_os_nd_T$		temperature change (in period covered by WW)	SHIP, SYNOP (widely spaced stations)
	5	$f_xf_xg_o$		mean max. wind speed (in period covered by WW)	SHIP, SYNOP
	6	$D_LD_MD_H$		direction of cloud drift	SYNOP (tropics)
	7	CD_ae_C		direction and elevation of cloud	SYNOP (tropics)

(v) $(6S_pS_ps_ps_p)$ - The specifications for the special phenomena code tables are determined by Regional decision.

(vi) (7....) (8....) (9....) - The data to be reported by the groups having indicator figures 7, 8 and 9 are determined by Regional decision. The group with indicator figure 7 should be reserved for reporting amount of precipitation.

Section 3 - National Section

(6) $N'C'H'H'C_t$ - This group is included by national decision. It is reported only by mountain stations when the base of the cloud is below the level of the station.

Section 4 - National Section

(7) - The groups to be included in Section 4 are determined nationally.

Part B

Code form for surface reports from sea stations

FM 24.E Surface report from sea station

SHIP

Section 1	$M_iM_iM_jM_j$			
	$YYGGi_u$	$D_sv_sL_aL_aL_a$	$Q_cL_oL_oL_oL_o$	s_ti_RNVh
	0ddff	1wwWW	$2s_nTTT$	$(3s_nT_dT_dT_d)$
	5PPPP	$(6ap_vp_vp_v)$	$(7RRRt_R)$	$(8N_hC_LC_MC_H)$
	$(s_nT_wT_wT_wn_w$	$P_wP_wH_wH_wP_w$	$P_wH_wH_wd_wd_w$	$(P_wP_wH_wd_wd_w))$
	$(7I_sE_sE_sR_s)$			
Section 2	222	(c_2KD_ire)	or plain language	
Section 3	444	$(0N_sCh_sh_s)$	$(5j_ij_sj_sj_s)$	$(6S_pS_ps_ps_p)$
Section 4	666	CCCC		

SHIP is the name of the code form for a surface report from a sea station. The code form is divided into 4 Sections as follows:-

Section	Indicator Groups	Information
1	-	Data for global exchange
2	222	Sea Ice
3	444	Supplementary data
4	666	Ship's call sign

NOTES:

(1) The group $M_iM_iM_jM_j$ shall be included as the first line of the text of a meteorological bulletin of SHIP reports. $M_iM_iM_jM_j$ is not included in each SHIP report.

(2) If a Member considers its fixed sea stations (except ocean weather stations) to be in the category of sea stations the reports shall be in SHIP.

(3) Use of bracketed groups :

The bracketed groups to be included in a ship's report will be determined by the Member who recruits the ship. Selected ships should include in Section 1, in addition to the groups that are not bracketed, the groups $3s_nT_dT_dT_d$ $6ap_vp_vp_v$ $8N_hC_LC_MC_H$ $s_nT_wT_wT_wn_w$, one or more wave groups and when appropriate the group $7I_sE_sE_sR_s$. For the use of bracketed groups in Sections 2 and 3 see Notes (5) and (6) below.

(4) Use of groups in Section 1

(i) s_ti_RNVh - This group is always included.

(ii) 0ddff - See Note 4 (ii) under SYNOP - FM 14.E

(iii) 1wwWW - See Note 4 (iii) under SYNOP - FM 14.E

(iv) $(3s_nT_dT_dT_d)$ - See Note 4 (iv) under SYNOP - FM 14.E

(v) $(6ap_vp_vp_v)$ - Mobile ships use this group to report the three hour pressure tendency. Fixed sea stations in tropical areas may, by Regional decision, use the group to report twenty-four hour pressure change. If required, both three-hour tendency and twenty-four hour pressure change may be reported by repeating the group.

(vi) ($7RRRt_R$) - Lightships reporting in the SHIP code form and fixed sea stations include this group when required by regional or national decision. Mobile ship stations which are able to measure precipitation should also include the group. If rainfall during the preceding six hours is measured and reported the Note 4(viii) under SYNOP applies.

(vii) ($8N_hC_LC_MC_H$) - See Note 4(ix) under SYNOP FM 14.E. This group is also omitted by mobile ship stations not required to report the amount of low clouds and the types of clouds.

(viii) ($s_nT_wT_wT_wn_w$ $P_wP_wH_wH_wP_w$ $P_wH_wH_wd_wd_w$ ($P_wP_wH_wd_wd_w$)) - These groups may or may not be included in the report in accordance with national instructions. They should be included by selected ships and are mandatory for ocean weather stations.

(a) The code figure for n_w indicates the number of wave groups that follow (0, 1, 2 or 3).

(b) The first four code figures of the first wave group are used to report wind waves. When swell cannot be detected the final P_w in this group is reported as "/".

(c) When swell can be distinguished from wind waves, the predominant swell system is reported by the six code figures following the figures for wind waves.

(d) When a second swell system is observed it is reported by the third wave group. This group is omitted if a second swell system cannot be detected or if reporting of this swell system is not required.

(I_e) If there is a swell with no wind waves the first wave group is to be reported as $0000P_w$.

(ix) ($7I_sE_sE_sR_s$) - This group should be included in the report whenever ice accretion on the ship is observed.

Section 2 - Sea Ice

(5) Section 2, Sea Ice, is reported whenever ice and/or icebergs are visible, or have been observed at a point or points, within a distance of 50 or 60 km from the ship's position at time of observation. The reporting of sea ice in SHIP is not to supersede the reporting of sea ice and icebergs in accordance with the International Convention for the Safety of Life at Sea. (Note: Ice information for other special purposes may be given by means of the special ice codes in Part B of Chapter I, Volume B.)

Section 3 - Supplementary Data

(6) The uses of groups in Section 3:

(i) ($ON_sCh_sh_s$) - When this group is included the instructions given in Note (3) of FM 11.D, Volume B apply.

(ii) ($5j_ij_sj_sj_s$) - See Note 5(iv) under SYNOP.

(iii) ($6S_RS_ps_ps_p$) - This group is normally reported only by ocean weather stations.

Section 4 - Ship's call sign

(7) The indicator group 666 and the Ship's call sign are not normally included in the SHIP report by the observer. Section 4 is added to the report by the coast radio station or national collecting centre when preparing the report for inclusion in bulletins.

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Part C

New or amended symbolic figure groups

222	Indicates that data on sea ice follow (FM 24.E)
333	Indicates that additional data for regional use follow (FM 14.E)
444	Indicates that data giving supplementary information follow (FM 24.E)
555	Indicates that data on clouds having bases below station level follow (FM 14.E)
666	Indicates that the ship's call sign follows (FM 24.E)
777	Indicates that additional data for national use follow (FM 14.E)

New or amended symbolic letters

a	Characteristic of pressure tendency during the 3 hours preceding the time of observation or the sign of the pressure change in 24 hours (Code 0200 revised) (FM 14.E and FM 24.E)
a_3	Indicator giving the standard constant pressure level of which the geopotential is reported (Code 0264 revised) (FM 14.E)
D_a	Direction in which orographic clouds or clouds of vertical development are seen (Code 0700) (5-group in section 333 of FM 14.E)
D_L, D_M, D_H	Direction from which respectively C_L, C_M and C_H clouds are moving (Code 0700) (5-group in section 333 of FM 14.E)
d_T	Change of temperature (see Code 0821) (5-group in Section 333 of FM 14.E and Section 444 of FM 24.E)

d'd'
d"d"

Direction in tens of degrees of wind before (d'd') and after (d"d") a wind change(Code 0877) (5-group in section 333 of FM 14.E and section 444 in FM 24.E)

(1) For a change of wind to be reported the change in direction shall be 30 degrees or more in less than 30 minutes when the wind speed before or after the change is 8 m/s or more, and/or a change in wind speed of 8 m/s or more.

E

State of the ground (Code 0900) (FM 14.E) (present note (1) in Volume B to be deleted)

e_C

Elevation angle of the top of the cloud indicated by C (Code 1004) (5-group in section 333 of FM 14.E)

ff

Wind speed in units indicated by i_u (FM 14.E, FM 24.E)

Note: The present Note (2) under ff should be deleted and in Note (3) the words "for aeronautical purposes". The other Notes remain as they are.

f'f'
f"f"

Wind speed in units indicated by i_u before (f'f') and after (f"f") a wind change (5 group in section 333 of FM 14.E and section 444 in FM 24.E)

(1) See Note (1) under d'd' above.

$f_x f_x$

Maximum mean wind speed during 10 minutes, in units indicated by i_u (5-group in section 333 of FM 14.E and section 444 in FM 24.E)

(1) To be reported only when $f_x f_x$ is equal to or greater than 16 m/s.

(2) If maximum mean wind speeds are reported in knots, and the value exceeds 99 knots, $f_x f_x$ is reported 99 and the actual value is indicated in an additional 5-group in the form $55 f_x f_x f_x$.

g_o Period, in whole hours, between the time of observation and the time of the wind or temperature change or the occurrence of maximum mean wind speed (scale from 0 to 5) (5 group in section 333 of FM 14.E and section 444 in FM 24.E.)

i_u Wind and instrumentation indicator (Code 1853) (FM 14.E, FM 24.E)

i_R Indicator for inclusion of precipitation group (Code 1819) (FM 14.E, FM 24.E)

j_i Supplementary information indicator (Code 2039) (FM 14.E, FM 24.E)

$j_s j_s j_s$ Specifications relating to supplementary information (Code 2039) (FM 14.E, FM 24.E)

k_s Sign of extremes of temperature (Code 2251) (FM 14.E)

$M_i M_i$ Identification letters of the code form (Code 2582 revised) (FM 14.E, FM 24.E)

$M_j M_j$ Identification letters of the part of the report (Code 2582 revised) (FM 14.E, FM 24.E)

n_w Number of wave groups (Code 2855) (FM 24.E)

PPPP Pressure in tenths of a millibar (FM 14.E, FM 24.E)
(1) Thousands of millibars of the pressure value are omitted

(Note: Retain the following notes under PPP : notes 2(a), 2(c), 2(b) up to and including the words "constant pressure level", 2(e) and (3).)

$p_v p_v p_v$ Amount of pressure tendency in tenths of a millibar, at the station, during the 3 hours preceding the time of observation, or, when a = 4 or 9, the pressure change in tenths of a millibar at station level in the last 24 hours.

RRR Amount of precipitation which has fallen during the 6 hours preceding the time of observation (Code 3590) (FM 14.E, FM 24.E)

(Note: The notes under RR do no longer apply).

R_s Rate of ice accretion on ships (Code 3551 revised) (FM 24.E)

s_n Sign of temperature (FM 14.E, FM 24.E)

(1) s_n = 0 for positive or zero temperatures; s_n = 1 for negative temperatures.

s_t Type of station and wind/weather groups indicator (Code 3852) (FM 14.E, FM 24.E)

sss Depth of snow in centimetres (FM 14.E)

t_R Duration and time of occurrence of precipitation reported by RRR (Code 4019) (FM 14.E, FM 24.E)

T_nT_n Minimum temperature in whole degrees Celsius (FM 14.E)

(1) The reporting of this element is fixed regionally.

T_xT_x Maximum temperature in whole degress Celsius (FM 14.E)

(1) The reporting of this element is fixed regionally.

TTT Air temperature in tenths of a degree Celsius, its sign being given by s_n (FM 14.E, FM 24.E)
(Note: The notes under the present TT do not apply)

$T_dT_dT_d$ Dew-point temperature in tenths of a degree Celsius, its sign being given by s_n (FM 14.E, FM 24.E)

(Note: The note (1) under the present T_dT_d does not apply)

V Horizontal visibility at surface (Code 4300 revised) (FM 14.E, FM 24.E)

(1) If the horizontal visibility is not the same in different directions, the shorter distance should be given for V.

ww Present weather (Code 4677* revised) (FM 14.E, FM 24.E)

(Note: Appropriate notes under the present ww code should be retained as regards their intent).

WW Past weather (Code 4675*) (FM 14.E, FM 24.E)

Notes (1), (2), (3) and (4): same as under present specification of the symbolic letter W.

$T_wT_wT_w$ Sea surface temperature in tenths of a degree Celsius, its sign being given by s_n (FM 24.E)
(Note: The present Note (1) under $T_wT_wT_w$ does not apply)

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* See Annex II.

New or amended code tables

Code 0200 (revised)

a - Characteristic of pressure tendency during the 3 hours preceding the time of observation, or the sign of the pressure change in 24 hours

Code figure		
0	Rising then falling; atmospheric pressure the same or higher than 3 hours ago	Pressure tendency during 3 hours preceding the observation
1	Rising then steady; or rising then rising more slowly	
2	Rising (steadily or unsteadily) or steady (*)	
3	Falling or steady, then rising; or rising then rising more rapidly; atmospheric pressure higher than 3 hours ago	
5	Falling then rising; atmospheric pressure is the same or lower than 3 hours ago	
6	Falling, then steady; or falling then falling more slowly	
7	Falling (steadily or unsteadily) (*)	
8	Steady or rising then falling; or falling then falling more rapidly; atmospheric pressure lower than 3 hours ago	
4	Atmospheric pressure equal to or greater than 24 hours ago	Pressure change in 24 hours
9	Atmospheric pressure lower than 24 hours ago	

(*) In messages from automatic meteorological stations, a is coded as 2 when the tendency is positive or zero; a is coded as 7 when the tendency is negative.

Code 0264 (revised)

a_3 - Indicator giving the standard constant pressure level of which the geopotential is reported

Code figure	
8	850 mb
7	700 mb
5	500 mb

Code 0821

d_T - Change of temperature

Code figure		Code figure	
5	Δ T = 5°C	0	Δ T = 10°C
6	Δ T = 6°C	1	Δ T = 11°C
7	Δ T = 7°C	2	Δ T = 12°C
8	Δ T = 8°C	3	Δ T = 13°C
9	Δ T = 9°C	4	Δ T = 14°C or more

Code 1004

e_C - Elevation angle of the top of the cloud indicated by C

Code figure	
0	Tops of cloud not visible
1	45° or more
2	About 30°
3	About 20°
4	About 15°
5	About 12°
6	About 9°
7	About 7°
8	About 6°
9	Less than 5°

Note: Angular elevation may be estimated by a rough-and-ready method. A simple way is to hold a 30-cm rule (or any straight stick 30 cm long) with one end close to the eye and its length stretching out in front horizontally; if a span or forefinger of the other hand is then made to project upward from the other end of the rule to serve as a mark and the eye is directed towards the upper end of the span or finger, the line of sight will make a definite angle with the horizon.

Mark above horizontal at 30-cm distance	*Angle of elevation*
Top of span formed by thumb and finger	30°
Top of full length of forefinger	15°
Top of half length of forefinger	9°
Breadth of two fingers	6°

Code 1853

i_u - Wind and instrumentation indicator

Code figure	Units used	Instruments certified or otherwise
0	metres per second	Land stations, and ships with certified instruments
1	knots	
2	metres per second	Ships with uncertified instruments
3	knots	

Code 1819

i_R - Indicator for inclusion of precipitation group

Code figure	
0	The group 7RRRt$_R$ is not included in the message because there has been no precipitation during the preceding 6 hours.
1	The group 7RRRt$_R$ is included in the message because there has been measurable precipitation in the preceding 6 hours (automatic weather stations may use this figure also when there has been no precipitation).
/	The group 7RRRt$_R$ is not included in the message because it was not possible to measure the amount.

Code 2039

j_i - Supplementary information indicator

$j_s j_s j_s$ - Specifications relating to supplementary information

$5j_i j_s j_s j_s$	Element	For inclusion by
5d'd'f'f' g_od"d"f"f"	Direction and speed of wind before (d'd'f'f') and after (d"d"f"f") a wind change, and period (g_o) between the time of observation and the time of the wind change. (1) These groups are used to describe a wind change observed during the period covered by WW. (2) These groups should only be sent when a sudden change of direction of 30° or more has been observed, the speed of the wind before or after the change being equal to or greater than 8 m/s, or if a change of wind speed of 8 m/s or more has been observed, either of these changes having occurred in a period of less than 30 minutes.	SHIP SYNOP (island stations)
$54g_o s_n d_T$	Change of temperature (d_T) with its sign (s_n) and period (g_o) between the time of observation and the time of temperature change. (1) This group is used to describe a temperature change observed during the period covered by WW. (2) Only temperature changes equal to or greater than 5°C occurring in less than 30 minutes are to be given.	SHIP SYNOP (widely spaced stations)

$55f_xf_xg_o$ $(55f_xf_xf_x)$	Maximum mean wind speed during 10 minutes (f_xf_x or $f_xf_xf_x$) and period (g_o) between the time of observation and the time of the occurrence of maximum mean wind speed. (1) This (or these) group(s) is (are) used to give maximum mean wind speed observed during the period covered by WW (2) This value is only sent if the mean wind speed measured over 10 minutes is equal to or greater than 16 m/s. (3) If maximum mean wind speed is reported in knots and the value exceeds 99 knots f_xf_x is reported 99 and the actual value is indicated in an additional group: $55f_xf_xf_x$	SHIP SYNOP
$56D_LD_MD_H$	Direction from which respectively C_L, C_M, C_H clouds are moving	SYNOP (tropics)
$57CD_ae_C$	Direction (D_a) in which orographic clouds or clouds of vertical development indicated by C are seen, and elevation angle (e_C) of the top of the cloud indicated by C	SYNOP (tropics)

Code 2251

k_s – Sign of extremes of temperature

Code figure	T_nT_n	T_xT_x
1	+	+
2	–	+
3	–	–

Code 2855

n_w - Number of wave groups

Code figure	
0	No waves of sea due to wind, nor swell waves. The wave groups are omitted
1	A wave group for sea due to wind in which $H_wH_w \neq 00$. No swell waves
2	A wave group for sea due to wind and a group for swell waves in which $H_wH_w \neq 00$
3	Same specification as for $n_w = 2$, plus a second group for swell waves
6	Impossible to distinguish between sea due to wind and swell. One single wave group coded in the form $P_wP_wH_wH_w/$.
/	Observation or measurement of waves impossible. The wave groups are omitted.

Code 3590

RRR - Amount of precipitation which has fallen during the 6 hours preceding the time of observation

Code figure	mm	Code figure	mm
000	0	990	trace
001	1	991	0.1
002	2	992	0.2
.	.	993	0.3
.	.	994	0.4
.	.	995	0.5
.	.	996	0.6
.	.	997	0.7
988	988	998	0.8
989	989 or more	999	0.9

Code 3551 (revised)

R_s - Rate of ice accretion on ships

Code figure	
0	Ice not building up
1	Ice building up slowly
2	Ice building up moderately quickly
3	Ice building up rapidly
4	Ice melting or breaking up slowly
5	Ice melting or breaking up moderately quickly
6	Ice melting or breaking up rapidly ("slowly", "moderately quickly" and "rapidly" being described as below)

(i) Slowly - Growth of about 0.6 to 1.2 cm every 12 hours - no necessity for chopping. Deck machinery not frozen up and workable.

(ii) Moderately quickly - About 2.5 cm build-up during 4 hours necessitating chopping. Deck machinery must be kept in motion and ropes and wires constantly moved to prevent freezing.

(iii) Rapidly - Very rapid build-up of ice. Icing conditions may become critical. Chopping is necessary at frequent intervals; at least every two hours on trawlers, trawling comes to a standstill with nets, gear and fish freezing on deck.

Code 3852

s_t – Type of station and wind/weather groups indicator

Code figure	Type of station	Present and past weather group is	Wind group is	Wind determination
1 *	automatic	included	included	measured
2 *	automatic	not included (measured and not significant)	included	measured
3 *	automatic	not included – not measured	included	measured
4	manned	included	included	measured
5	manned	included	included	estimated
6	manned	omitted (wwWW = 0000)	included	measured
7	manned	omitted (wwWW = 0000)	included	estimated
8	manned	included	omitted (calm)	–
9	manned	omitted (wwWW = 0000)	omitted (calm)	–

* Notes:

1. Use of code s_t by automatic stations :

(a) Station is not equipped to observe wwWW : $s_t = 3$

(b) Station is equipped to observe wwWW, and there is significant weather to report : $s_t = 1$

(c) Station is equipped to observe wwWW and there is no significant weather to report : s_t = 1 or 2 according to national decision

(d) Station is equipped to observe wwWW but the equipment is unservicable : $s_t = 1$ and 1wwWW = 1////

2. A calm corresponds to a wind speed < 0,5 m/sec or < 1 knot.

Code 4019

t_R - Duration and time of occurrence of precipitation reported by RRR

0	No precipitation (automatic stations)
	Intermittent precipitation or showers (with breaks more than 30 minutes)
1	In period H-6 to H-3
2	In period H-3 to H
3	Throughout period H-6 to H
	Continuous precipitation, or breaks not more than 30 minutes
4	Duration up to 2 hours ended 0-2* hours before H
5	" " " " " " 2-4 " " "
6	" " " " " " 4-6 " " "
7	" 2-4 hours " 0-2* " " "
8	" " " " 2-4 " " "
9	" 4-6 " " 0-2* " " "
/	Not determined

* includes precipitation still falling at H, indicated by ww

Code 4300 (revised)

V - Horizontal visibility at surface

Code figure				
0	<	50 m		
1	≥	50 m	to < 200 m	*
2	≥	200 m	to < 500 m	
3	≥	500 m	to < 1000 m	
4	≥	1 km	to < 2 km	
5	≥	2 km	to < 5 km	
6	≥	5 km	to < 10 km	
7	≥	10 km	to < 20 km	*
8	≥	20 km	to < 50 km	
9	≥	50 km		

* In the case of an automatic station, code figures 1 and 7 have respectively the following specifications :
1 : less than 200 m (and code figure 0 is not used)
7 : 10 km or over (and code figure 8 and 9 are not used)

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Part D

Guidelines for tests of new SYNOP and SHIP code forms

1. If possible, direct comparisons should be made between messages encoded in FM 11.D, FM 21.D, etc. and the same data encoded in FM 11.E and FM 21.E. Actual observations should be used wherever possible, but for some purposes hypothetical data may be more convenient.

2. Group-count comparisons between the present and the new code forms should be made to assess the impact on telecommunications at the national and international levels. The comparisons should be made in widely varying meteorological conditions.

3. Any difficulties encountered by observers should be noted, and the causes of the difficulties sought.

4. The suitability and convenience of the new code form for manual processing, and particularly for plotting, should be studied through the reaction and comments of the technical staff concerned, both experienced and junior.

5. Those Members processing data by computer, who are able to take part in the test programme, should assess the relative merits of the present and the new codes from the programming point of view, and from any other relevant points of view.

6. Throughout all phases of testing particular attention should be paid to the feature of the new code forms which permits various groups to be omitted from messages in certain circumstances. Counts of the number of occasions on which each of the several groups concerned is omitted would be useful. The total number of groups omitted in a complete collection of reports received at one time in NMCs and RMCs in extremes of weather conditions should be ascertained.

7. No fixed pattern of testing is suggested. Each Member should conduct the test to cover points of particular interest and concern in their own Services.

8. Tests should be completed and comments on them forwarded to the Secretary-General not later than 1 October 1972.