

COMMISSION FOR MARINE METEOROLOGY
ABRIDGED FINAL REPORT OF THE EIGHTH SESSION
Hamburg, 14-25 September 1981
WMO - NO. 584

GENERAL SUMMARY

7.3 International Maritime Meteorological Punch Card (IMMPC) / International Maritime Meteorological Tape (IMMT) (Agenda item 7.3)

7.3.1 The Commission noted that the two major items which received particular attention by the Working Group on Marine Climatology were the revision of the layout of the IMMPC and the design of a new layout for the IMMT, the former as a direct consequence of the introduction of the new common code and the latter in view of the increasing use of magnetic tape as the data-exchange medium. It considered the proposals of the Working Group on Marine Climatology on these two important matters.

IMMPC

7.3.2 The Commission accepted the new punch-card layout as developed by the working group. It contains new elements and features which were added in the light of experience gained by Members since 1961 using the present IMMPC. These are:

- (a) An expanded code for the method of sea-surface temperature measurement;
- (b) A code to indicate the method of wave observation;
- (c) A code to indicate the source of observation;
- (d) An expanded code to indicate the type of observation platform;

- (e) Ship identifier;
- (f) Quality-control indicator;
- (g) Elimination of over-punches.

The Commission stressed the need for ship's call signs to be recorded exactly as specified in WMO Publication No. 47 - International List of Selected, Supplementary and Auxiliary Ships. With regard to wave observations made on ocean platforms other than voluntary observing sips, it agreed that the information on methods of wave measurement should be indicated. The Commission requested the Secretariat to consider the possibility of including this information in the list of ODAS stations (e.g. buoys, rigs, towers) to be published in Publication No. 9, Volume A.

IMMT

7.3.3 The working group presented the Commission with two formats for the IMMT: (1) A format having the first 80 characters the same as those in the IMMPC with Q.C. flags appearing at the end of the taped record; and (2) Another format having the Q.C. flags appearing after the last character of each element (thus the format differs from that of the IMMPC in the first 80 characters). The Commission agreed that there was to be one tape format and the first 80 characters (bytes) of the IMMT format be identical to the first 80 columns of the IMMPC format to be used for the international exchange of data, particularly for the Marine Climatological Summary Scheme. This format would ensure the simplicity of processing and adaptability to differing computer resources. As regards the other format mentioned above, the Commission was of the opinion that this format may be used for national and bilateral exchange of data. Recommendation 8 (CMM-VIII) was adopted.

Rec. 8 (CMM-VIII) - INTERNATIONAL MARITIME METEOROLOGICAL PUNCH CARD (IMMPC) /
INTERNATIONAL MARITIME METEOROLOGICAL TAPE (IMMT)

THE COMMISSION FOR MARINE METEOROLOGY,

NOTING:

- (1) Recommendation 14 (CBS-VII) - Common code for reporting surface observation from different types of surface stations,
- (2) The final report of the Study Group Meeting on Marine Climatology (Asheville, September 1980),

CONSIDERING:

- (1) That the layout of the International Maritime Meteorological Punch Card (IMMPC) needs to be revised in accordance with the new common surface code FM 13-VII which will be introduced as of 1 January 1982,
- (2) That there is an urgent need for the standardization of the layout of magnetic tape, which is used increasingly for the exchange of marine climatological data,

RECOMMENDS:

- (1) That the layouts of the International Maritime Meteorological Punch Card (IMMPC) and the International Maritime Meteorological Tape (IMMT) given in the annexes (Parts A and B)* to this recommendation be adopted;
- (2) That these layouts be included in the Manual on Maritime Meteorological Services;
- (3) That for national and bilateral exchange of data, the format given in the annex (Part C)* to this recommendation may be used.

* See Annex IV

ANNEX IV

Annex to Recommendation 8 (CMM-VIII)

PART A

LAYOUT FOR THE INTERNATIONAL MARITIME METEOROLOGICAL PUNCH CARD (IMMPC) BASED ON THE NEW COMMON CODE: FM 13-VII SHIP

<u>Column</u>	<u>Element</u>	<u>Punching procedures</u>
1	Format and temperature indicator i_T	0-5
2-3	Year GMT, AA	Last two digits
4-5	Month GMT, MM	01-12 January to December
6-7	Day GMT, YY	01-31
8-9	Time of observation, GG	Nearest whole hour GMT, WMO specifications
10	Indicator for wind speed, i_w	WMO code 1855
11	Octant of the globe, Q	Punched as octant using WMO code 3300; quadrant converted into octant
12-14	Latitude, $L_a L_a L_a$	Tenths of degrees, WMO specifications
15-17	Longitude, $L_o L_o L_o$	Tenths of degrees, WMO specifications
18	Cloud height (h) and visibility (VV) measuring	0 - h and VV estimated 1 - h measured, VV estimated

	indicator	2 - h and VV measured 3 - h estimated. VV measured
19	Height of clouds, h	WMO code 1600
20-21	Visibility, VV	WMO code 4377; if fog is known to be present, but VV is not reported, column 20 is to be punched 5 and column 21 is to be punched 3
22	Cloud amount, N	Oktas, WMO code 2700; punch 9 where applicable
23-24	True wind direction, dd	Tens of degrees, WMO code 0877; punch 00 or 99 where applicable
25-26	Wind speed, ff	Tens and units of knots or metres per second, hundreds omitted; values in excess of 99 knots are to be indicated in units of metres per second and i_w encoded accordingly; the method of estimation or measurement and the units used (knots or metres per second) is indicated in column 10
27	Sign of temperature, s_n	WMO code 3845
28-30	Air temperature, TTT	Tenths of degrees Celsius
31	Sign of wet-bulb/dew-point temperature	0 – positive Dew-point temperature 1 – negative
	WMO code 3845	5 – positive Wet-bulb temperature 6 - negative Code figure 7 to be used if ice-bulb temperature is

		reported
32-34	Wet-bulb or dew-point temperature	Tenths of degrees Celsius
35-38	Air pressure, PPPP	Tenths of hectopascals
39-40	Present weather, ww	WMO code 4677
41-42	Past weather, W_1 and W_2	WMO code 4561
43	Amount of lowest clouds, N_h	As reported for C_L or, if no C_L cloud is present, for C_M , in oktas; WMO code 2700
44	Genus of C_L clouds	WMO code 0513
45	Genus of C_M clouds	WMO code 0515
46	Genus of C_H clouds	WMO code 0509
47	Sign of sea-surface temperature, S_n	WMO code 3845
48-50	Sea-surface temperature, $T_w T_w T_w$	Tenths of degrees Celsius
51	Indicator for sea-surface temperature (SST) measurement	<ul style="list-style-type: none"> 0 - Bucket thermometer 1 - Condenser inlet 2 - Trailing thermistor 3 - Hull contact sensor 4 - "Through hull" sensor 5 - Radiation thermometer 6 - Bait tanks thermometer

7 - Others

52	Indicator for wave measurement	<p>0 - Wind sea and swell estimated</p> <p><u>Shipborne Wave Recorder (1-3)</u></p> <p>1 - Wind sea and swell measured</p> <p>2 - Mixed wave measured, swell estimated</p> <p>3 - Other combinations of measured and estimated</p> <p><u>Buoy (4-6)</u></p> <p>4 - Wind sea and swell measured</p> <p>5 - Mixed wave measured, swell estimated</p> <p>6 - Other combinations of measured and estimated</p> <p><u>Other Measurement System (7-9)</u></p> <p>7 - Wind sea and swell measured</p> <p>8 - Mixed wave measured, swell estimated</p> <p>9 - Other combinations of measured and estimated</p>
53-54	Period of wind waves or of measured waves $P_w P_w$	Whole seconds; punch 99 where applicable in accordance with Note (3) under specification of $P_w P_w$ in the Manual on Codes
55-56	Height of wind waves or of measured waves $H_w H_w$	Half-metre values Examples: Calm or less than 1/4m to be punched 00

		3-1/2m to be punched 07 7m to be punched 14 11-1/2m to be punched 23
57-58	Direction of predominant swell waves, $d_{w1}d_{w1}$	Tens of degrees, WMO code 0877; punch 00 or 00 where applicable Blanks = No observation of swell attempted
59-60	Period of predominant swell waves $P_{w1}P_{w1}$	Whole seconds; punch 99 where applicable (see under columns 53-54)
61-62	Height of predominant swell waves $H_{w1}H_{w1}$	half-metre values (see under columns 55-56)
63	ice accretion on ships, I_s	WMO code 1751
64-65	Thickness of ice accretion, E_sE_s	In centimetres
66	Rate of ice accretion, R_s	WMO code 3551
67	Source of observation on card	0 - unknown <u>national data exchange (1-3)</u> 1 - Logbook 2 - Telecommunication channels 3 - Publications <u>international data exchange (4-6)</u> 4 - Logbook 5 - Telecommunication channels

- 2 - Automated Q.C. only (no time-sequence checks)
- 3 - Automated Q.C. only (including time-sequence checks)
- 4 - Manual and automated Q.C. (superficial; no automated time-sequence checks)
- 5 - Manual and automated Q.C. only (superficial; including time-sequence checks)
- 6 - Manual and automated Q.C. (intensive; including automated time-sequence checks)
- 7 - Not used
- 8 - Not used
- 9 - National system of Q.C. (information to be furnished to WMO)

79-80 reserved for national use

-

Format and temperature indicator (i_T)

- 0 = IMMPC format with temperatures in tenths of degrees Celsius
- 1 = IMMPC format with temperatures in halves of degrees Celsius
- 2 = IMMPC format with temperatures in whole degrees Celsius
- 3 = IMMT format with temperatures in tenths of degrees Celsius
- 4 = IMMT format with temperatures in halves of degrees Celsius
- 5 = IMMT format with temperatures in whole degrees Celsius

PART B

LAYOUT FOR THE INTERNATIONAL MARITIME METEOROLOGICAL TAPE (IMMT)
BASED ON THE NEW COMMON CODE: FM 13-VII SHIP

<u>Element No.</u>	<u>Element</u>	<u>Character No.</u>
1	Format and temperature indicator (i_T)	1
2	AA	2-3
3	MM	4-5
4	YY	6-7
5	GG	8-9
6	i_w	10
7	Q	11
8	$L_a L_s L_s$	12-14
9	$L_o L_o L_o$	15-17
10	Indicator for h and VV	18
11	h	19
12	VV	20-21
13	N	22
14	dd	23-24
15	ff	25-26
16	s_n	27
17	TTT	28-30

18	Sign of reported wet-bulb or dew-point temperature	31
19	Wet-bulb/dew-point temperature	32-34
20	PPPP	35-38
21	ww	39-40
22	W_1	41
23	W_2	42
24	N_h	43
25	C_L	44
26	C_M	45
27	C_H	46
28	s_n	47
29	$T_w T_w T_w$	48-50
30	Indicator for SST measurement	51
31	Indicator for wave measurement	52
32	$P_w P_w$	53-54
33	$H_w H_w$	55-56
34	$d_{w1} d_{w1}$	57-58
35	$P_{w1} P_{w1}$	59-60
36	$H_{w1} H_{w1}$	61-62
37	I_s	63
38	$E_s E_s$	64-65
39	R_s	66

40	Source of observation	67
41	Observation platform	68
42	Ship identifier	69-75
43	Country which has recruited the ship	76-77
44	Quality control indicator	78
45	National use	79
46	National use	80
47	i_R	81
48	RRR	82-84
49	t_R	85
50	Sign of computed wet-bulb or dew-point temperature	86
51	Computed wet-bulb or dew-point temperature	87-89
52	a	90
53	ppp	91-93
54	D_s	94
55	v_s	95
56	$d_{w2}d_{w2}$	96-97
57	$P_{w2}P_{w2}$	98-99
58	$H_{w2}H_{w2}$	100-101
59	c_i	102
60	S_i	103
61	b_i	104

62	D_i	105
63	z_i	106

Quality control indicator (Q1 to Q18) for elements indicated in brackets.

64	Q_1 (h)	107
65	Q_2 (VV)	108
66	Q_3 (clouds: element 13; 24-27)	109
67	Q_4 (dd)	110
68	Q_5 (ff)	111
69	Q_6 (TTT)	112
70	Q_7 (wet bulb/dew point)	113
71	Q_8 (PPPP)	114
72	Q_9 (weather: element 21, 22, 23)	115
73	Q_{10} ($T_w T_w T_w$)	116
74	Q_{11} ($P_w P_w$)	117
75	Q_{12} ($H_w H_w$)	118
76	Q_{13} (swell: elements 34-36, 56-58)	119
77	Q_{14} ($i_R RRR t_R$)	120
78	Q_{15} (a)	121
79	Q_{16} (ppp)	122
80	Q_{17} (D_s)	123
81	Q_{18} (v_s)	124

Specifications for quality control indicators Q₁ to Q₁₈

- 0 No quality control (QC) has been performed on this element
- 1 QC has been performed: element appear to be correct
- 2 QC has been performed: element appear to be inconsistent with other element
- 3 QC has been performed: element appear to be doubtful
- 4 QC has been performed: element appear to be erroneous
- 5 The value has been changed as a result of QC
- 6 Reserved
- 7 Reserved
- 8 Reserved
- 9 The value of the element is missing

PART C

LAYOUT FOR A MARITIME METEOROLOGICAL TAPE FOR POSSIBLE
USE IN NATIONAL AND BILATERAL DATA EXCHANGE
BASED ON THE NEW COMMON CODE: FM 13-VII SHIP

<u>Element No.</u>	<u>Element</u>	<u>Character No.</u>
1	Format and temperature indicator (i _T) (Same as Col. 1 of IMMPC)	1
2	AA	2-3

3	MM	4-5
4	YY	6-7
5	GG	8-9
6	i_w	10
7	Q	11
8	$L_a L_a L_a$	12-14
9	$L_o L_o L_o$	15-17
10	Indicator for h and VV	18
11	h	19
	Q_1	20
12	VV	21-22
	Q_2	23
13	N	24
14	dd	25-26
	Q_4	27
15	ff	28-29
	Q_5	30
16	s_n	31
17	TTT	32-34
	Q_6	35
18	Sign of reported wet-bulb or dew-point temperature	36
19	Wet-bulb/dew-point temperature	37-39
	Q_7	40

20	PPPP	41-44
	Q_8	45
21	ww	46-47
22	W_1	48
23	W_2	49
	Q_9	50
24	N_h	51
25	C_L	52
26	C_M	53
27	C_H	54
	Q_3	55
28	s_n	56
29	$T_w T_w T_w$	57-59
	Q_{10}	60
30	Indicator for SST measurement	61
31	Indicator for wave measurement	62
32	$P_w P_w$	63-64
	Q_{11}	65
33	$H_w H_w$	66-67
	Q_{12}	68
34	$d_{w1} d_{w1}$	69-70
35	$P_{w1} P_{w1}$	71-72
36	$H_{w1} H_{w1}$	73-74

37	I_s	75
38	$E_s E_s$	76-77
39	R_s	78
40	Source of observation	79
41	Observation platform	80
42	Ship identifier	81-87
43	Country which has recruited the ship	88-89
44	Quality control indicator	90
45	National use	91
46	National use	92
47	i_R	93
48	RRR	94-96
	Q_{14}	97
49	t_R	98
50	Sign of computed wet-bulb or dew-point temperature	99
51	Computed wet-bulb or dew-point temperature	100-102
52	a	103
	Q_{15}	104
53	ppp	105-107
	Q_{16}	108
54	D_s	109
	Q_{17}	110
55	v_s	111

	Q_{18}	112
56	$d_{w2}d_{w2}$	113-114
57	$P_{w2}P_{w2}$	115-116
58	$H_{w2}H_{w2}$	117-118
	Q_{13}	119
59	c_i	120
60	S_i	121
61	b_i	122
62	D_i	123
63	z_i	124

Quality control indicator (Q1 to Q18) for elements indicated in brackets.

64	Q_1 (h)	20
65	Q_2 (VV)	23
66	Q_3 (clouds: element 13; 24-27)	55
67	Q_4 (dd)	27
68	Q_5 (ff)	30
69	Q_6 (TTT)	35
70	Q_7 (wet bulb/dew point)	40
71	Q_8 (PPPP)	45
72	Q_9 (weather: element 21, 22, 23)	50
73	Q_{10} ($T_w T_w T_w$)	60
74	Q_{11} ($P_w P_w$)	65

75	Q_{12} ($H_w H_w$)	68
76	Q_{13} (swell: elements 34-36, 56-58)	119
77	Q_{14} ($i_R RRR t_R$)	97
78	Q_{15} (a)	104
79	Q_{16} (ppp)	108
80	Q_{17} (D_s)	110
81	Q_{18} (v_s)	112

Specifications for quality control indicators Q_1 to Q_{18}

0	No quality control (QC) has been performed on this element
1	QC has been performed: element appear to be correct
2	QC has been performed: element appear to be inconsistent with other element
3	QC has been performed: element appear to be doubtful
4	QC has been performed: element appear to be erroneous
5	The value has been changed as a result of QC
6-8	Reserved
9	The value of the element is missing