

**ANNEX TO RECOMMENDATION 13 (CMM-XI)**  
**LAYOUT FOR THE INTERNATIONAL MARITIME METEOROLOGICAL TAPE (IMMT)**  
**[VERSION IMMT-1]**

Element Number	Character Number	Code	Element	Coding procedure
1	1	$i_T$	Format/temperature indicator	3=IMMT format with temperatures in tenths of °C 4=IMMT format with temperatures in halves of °C 5=IMMT format with temperatures in whole °C
2	2-5	AAAA	Year UTC	Four digits
3	6-7	MM	Month UTC	01 - 12 January to December
4	8-9	YY	Day UTC	01 - 31
5	10-11	GG	Time of observation	Nearest whole hour UTC, WMO specifications
6	12	Q	Octant of the globe	WMO code table 3300; quadrant converted into octant
7	13-15	$L_1L_2L_3$	Latitude	Tenths of degrees, WMO specifications
8	16-19	$L_0L_1L_2L_3$	Longitude	Tenths of degrees
9	20		Cloud height (h) and visibility (VV) measuring indicator	0 - h and VV estimated 1 - h measured, VV estimated 2 - h and VV measured 3 - h estimated, VV measured
10	21	h	Height of clouds	WMO code table 1600
11	22-23	VV	Visibility	WMO code table 4377
12	24	N	Cloud amount	Oktas, WMO code table 2700; show 9 where applicable
13	25-26	dd	True wind direction	Tens of degrees, WMO code table 0877; show 00 or 99 where applicable
14	27	$i_w$	Indicator for wind speed	WMO code table 1855
15	28-29	ff	Wind speed	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) are indicated in element 14
16	30	$s_n$	Sign of temperature	WMO code table 3845
17	31-33	TTT	Air temperature	Tenths of degrees Celsius
18	34	$s_t$	Sign of dew-point temperature	0 - positive or zero measured dew-point temperature 1 - negative measured dew-point temperature 2 - iced measured dew-point temperature 5 - positive or zero computed dew-point temperature 6 - negative computed dew-point temperature 7 - iced computed dew-point temperature
19	35-37	$T_dT_dT_d$	Dew-point temperature	Tenths of degrees Celsius
20	38-41	PPPP	Air pressure	Tenths of hectopascals
21	42-43	ww	Present weather	WMO code table 4677
22	44	$W_1$	Past weather	WMO code table 4561
23	45	$W_2$	Past weather	WMO code table 4561
24	46	$N_h$	Amount of lowest clouds	As reported for $C_L$ or, if no $C_L$ cloud is present, for $C_M$ , in oktas; WMO code table 2700

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25	47	C <sub>L</sub>	Genus of C <sub>L</sub> clouds	WMO code table 0513													
26	48	C <sub>M</sub>	Genus of C <sub>M</sub> clouds	WMO code table 0515													
27	49	C <sub>H</sub>	Genus of C <sub>H</sub> clouds	WMO code table 0509													
28	50	s <sub>n</sub>	Sign of sea-surface temperature	WMO code table 3845													
29	51-53	T <sub>w</sub> T <sub>w</sub> T <sub>w</sub>	Sea surface temperature	Tenth of degrees Celsius													
30	54		Indicator for sea-surface temperature measurement	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													
31	55		Indicator for wave measurement	<table border="0"> <tr> <td>Shipborne wave recorder</td> <td rowspan="3">           {            0 - Wind sea and swell estimated            1 - Wind sea and swell measured            2 - Mixed wave measured, swell estimated            3 - Other combinations measured and estimated            4 - Wind sea and swell measured            5 - Mixed wave measured, swell estimated            6 - Other combinations measured and estimated            7 - Wind sea and swell measured            8 - Mixed wave measured, swell estimated            9 - Other combinations measured and estimated         </td> </tr> <tr> <td>Buoy</td> </tr> <tr> <td>Other measurement system</td> </tr> </table>	Shipborne wave recorder	{ 0 - Wind sea and swell estimated 1 - Wind sea and swell measured 2 - Mixed wave measured, swell estimated 3 - Other combinations measured and estimated 4 - Wind sea and swell measured 5 - Mixed wave measured, swell estimated 6 - Other combinations measured and estimated 7 - Wind sea and swell measured 8 - Mixed wave measured, swell estimated 9 - Other combinations measured and estimated	Buoy	Other measurement system									
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32	56-57	P <sub>w</sub> P <sub>w</sub>	Period of wind waves or of measured waves	Whole seconds; show 99 where applicable in accordance with Note (3) under specification of P <sub>w</sub> P <sub>w</sub> in the <i>Manual on Codes</i>													
33	58-59	H <sub>w</sub> H <sub>w</sub>	Height of wind waves or of measured waves	Half-metre values. Examples: Calm or less than 1/4m to be encoded 00; 3 1/2m to be encoded 07; 7m to be encoded 14; 11 1/2m to be encoded 23													
34	60-61	d <sub>w1</sub> d <sub>w1</sub>	Direction of predominant swell waves	Tens of degrees, WMO code table 0877; encoded 00 or 99 where applicable. Blanks = No observation of waves attempted													
35	62-63	P <sub>w1</sub> P <sub>w1</sub>	Period of predominant swell waves	Whole seconds; encoded 99 where applicable (see under element 32)													
36	64-65	H <sub>w1</sub> H <sub>w1</sub>	Height of predominant swell waves	Half-metre values (see under element 33)													
37	66	I <sub>s</sub>	Ice accretion on ships	WMO code table 1751													
38	67-68	E <sub>s</sub> E <sub>s</sub>	Thickness of ice accretion	In centimetres													
39	69	R <sub>s</sub>	Rate of ice accretion	WMO code table 3551													
40	70		Source of observation	<table border="0"> <tr> <td>0 - Unknown</td> <td rowspan="3">}</td> <td rowspan="3">National</td> </tr> <tr> <td>1 - Logbook</td> </tr> <tr> <td>2 - Telecommunication channels</td> </tr> <tr> <td>3 - Publications</td> <td rowspan="3">}</td> <td rowspan="3">International data exchange</td> </tr> <tr> <td>4 - Logbook</td> </tr> <tr> <td>5 - Telecommunication channels</td> </tr> <tr> <td>6 - Publications</td> <td></td> <td></td> </tr> </table>	0 - Unknown	}	National	1 - Logbook	2 - Telecommunication channels	3 - Publications	}	International data exchange	4 - Logbook	5 - Telecommunication channels	6 - Publications		
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Element Number	Character Number	Code	Element	Coding procedure
41	71		Observation platform	0 - unknown 1 - Selected ship 2 - Supplementary ship 3 - Auxiliary ship 4 - Automated station/data buoy 5 - Fixed sea station 6 - Coastal station 7 - Aircraft 8 - Satellite 9 - Others ....
42	72-78		Ship identifier	Ship's call sign or other identifier encoded as follows: 7 characters call sign Columns 72-78 6 characters call sign Columns 72-77 5 characters call sign Columns 72-76 4 characters call sign Columns 72-75 3 characters call sign Columns 72-74
43	79-80		Country which has recruited the ship	According to numbers assigned by WMO
44	81		National use	
45	82		Quality control indicator	0 - No quality control (QC) 1 - Manual QC only 2 - Automated QC only (no time-sequence checks) 3 - Automated QC only (inc. time sequence checks) 4 - Manual and automated QC (superficial; no automated time-sequence checks) 5 - Manual and automated QC (superficial; including time-sequence checks) 6 - Manual and automated QC (intensive, including automated time-sequence checks) 7 & 8 - Not used 9 - National system of QC (information to be furnished to WMO)
46	83	$i_x$	Weather data indicator	1 - Manual 4 - Automatic If present and past weather data included Code tables 4677 and 4561 used 7 - Automatic If present and past weather data included Code tables 4680 and 4531 used
47	84	$i_R$	Indicator for inclusion or omission of precipitation data	WMO code table 1819
48	85-87	RRR	Amount of precipitation which has fallen during the period preceding the time of observation, as indicated by $t_R$	WMO code table 3590
49	88	$t_R$	Duration of period of reference for amount of precipitation, ending at the time of the report	WMO code table 4019
50	89	$s_w$	Sign of wet-bulb temperature	0 - positive or zero measured wet-bulb temperature 1 - negative measured wet-bulb temperature 2 - iced measured wet-bulb temperature 5 - positive or zero computed wet-bulb temperature 6 - negative computed wet-bulb temperature 7 - iced computed wet-bulb temperature
51	90-92	$T_b T_b T_b$	Wet-bulb temperature	In tenths of degree Celsius, sign given by element 50
52	93	a	Characteristic of pressure tendency during the three hours preceding the time of observation	WMO code table 0200

Element Number	Character Number	Code	Element	Coding procedure
53	94-96	ppp	Amount of pressure tendency at station level during the three hours preceding the time of observation	In tenths of hectopascal
54	97	D <sub>s</sub>	True direction of resultant displacement of the ship during three hours preceding the time of observation	WMO code table 0700
55	98	v <sub>s</sub>	Ship's average speed made good during the three hours preceding the time of observation	WMO code table 4451
56	99-100	d <sub>w2</sub> d <sub>w2</sub>	Direction of secondary swell waves	Tens of degrees, WMO code table 0877; encoded 00 or 99 where applicable. Blanks = No observation of waves attempted
57	101-102	P <sub>w2</sub> P <sub>w2</sub>	Period of secondary swell waves	Whole seconds; encoded 99 where applicable (see under element 32)
58	103-104	H <sub>w2</sub> H <sub>w2</sub>	Height of secondary swell waves	Half-metre values (see under element 33)
59	105	c <sub>i</sub>	Concentration or arrangement of sea ice	WMO code table 0639
60	106	S <sub>i</sub>	Stage of development	WMO code table 3739
61	107	b <sub>i</sub>	Ice of land origin	WMO code table 0439
62	108	D <sub>i</sub>	True bearing of principal ice edge	WMO code table 0739
63	109	z <sub>i</sub>	Present ice situation and trend of conditions over preceding three hours	WMO code table 5239
64	110		FM 13 code version	0 = previous to FM 24-V 1 = FM 24-V 2 = FM 24-VI Ext. 3 = FM 13-VII 4 = FM 13-VIII 5 = FM 13-VIII Ext. 6 = FM 13-IX 7 = FM 13-IX Ext. 8 = FM 13-X, etc.
65	111		IMMT version	0 = previous IMMT 1 = IMMT-1 (this version) 2 = IMMT-2 (next version) 3 = IMMT-3, etc.
66	112	Q <sub>1</sub>	Quality control indicator for (h)	0 - no quality control (QC) has been performed in this element 1 - QC has been performed; element appears to be correct 2 - QC has been performed; element appears to be inconsistent with other elements 3 - QC has been performed; element appears to be doubtful 4 - QC has been performed; element appears to be erroneous 5 - The value has been changed as a result of QC 6 - 8 Reserve 9 - The value of the element missing
67	113	Q <sub>2</sub>	QC indicator for (VV)	- idem -
68	114	Q <sub>3</sub>	QC indicator for (clouds: elements 12, 24-27)	- idem -
69	115	Q <sub>4</sub>	QC indicator for (dd)	- idem -
70	116	Q <sub>5</sub>	QC indicator for (ff)	- idem -

<i>Element Number</i>	<i>Character Number</i>	<i>Code</i>	<i>Element</i>	<i>Coding procedure</i>
71	117	Q <sub>6</sub>	QC indicator for (TTT)	- idem -
72	118	Q <sub>7</sub>	QC indicator for (T <sub>d</sub> T <sub>d</sub> T <sub>d</sub> )	- idem -
73	119	Q <sub>8</sub>	QC indicator for (PPPP)	- idem -
74	120	Q <sub>9</sub>	QC indicator for (weather: elements 21-23)	- idem -
75	121	Q <sub>10</sub>	QC indicator for (T <sub>w</sub> T <sub>w</sub> T <sub>w</sub> )	- idem -
76	122	Q <sub>11</sub>	QC indicator for (P <sub>w</sub> P <sub>w</sub> )	- idem -
77	123	Q <sub>12</sub>	QC indicator for (H <sub>w</sub> H <sub>w</sub> )	- idem -
78	124	Q <sub>13</sub>	QC indicator for (swell: elements 34-36, 56-58)	- idem -
79	125	Q <sub>14</sub>	QC indicator for (i <sub>R</sub> RRRt <sub>R</sub> )	- idem -
80	126	Q <sub>15</sub>	QC indicator for (a)	- idem -
81	127	Q <sub>16</sub>	QC indicator for (ppp)	- idem -
82	128	Q <sub>17</sub>	QC indicator for (D <sub>s</sub> )	- idem -
83	129	Q <sub>18</sub>	QC indicator for (v <sub>s</sub> )	- idem -
84	130	Q <sub>19</sub>	QC indicator for (T <sub>b</sub> T <sub>b</sub> T <sub>b</sub> )	- idem -
85	131	Q <sub>20</sub>	QC indicator for ships' position	- idem -