SERIES 11-14

SERIES 11-4

METEOROLOGICAL OFFICE

REFERENCE MANUAL

for

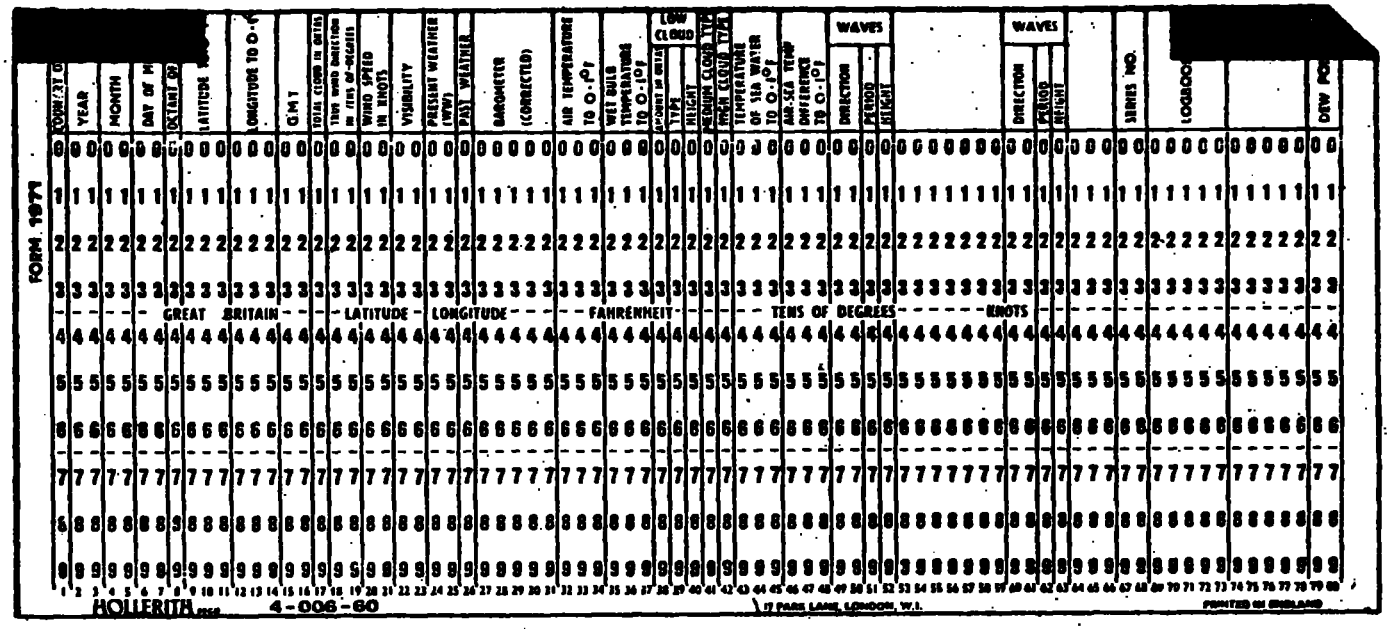
SURFACE MARINE CARD FORM 1971

SERIES 11–14
(1956–1961)

REFERENCE MANUAL

for

SURFACE MARINE CARD FORM 1971



Meteorological Office, M.O.18c.,
London Road,
Bracknell,
Berkshire.

Columns	Item	Code	Code Definition	Remarks	Reporting and Coding Practices
1	Country of origin	0	Netherlands		This is the country which actually recruited the ship.
		1	Norway		
		2	U.S.A.		
		3	United Kingdom		
		4	France		
		5	Denmark		
		6	Italy		
		7	India		
		8	Hong Kong		
		9	New Zealand		
		0	Ireland	With "X" overpunch	
		1	Philippines		
		2	Egypt		
		3	Canada		
		4	Belgium		
		5	South Africa		
		6	Australia		
		7	Japan		
		8	Pakistan		
		9	Argentina		

olumns	Item	Code	Code Definition	Remarks	Reporting and Coding Practices
1	Country of origin (continued)	0	Sweden	With "Y" overpunch	
		1	Federal Republic of Germany		
		2	Iceland		
2-3	Year	56-61	1956 to 1961		
4-5	Month	01-12	January to December		
6-7	Day	01-31	Day of month		
8	Octant	0	0° to 90°W	North latitude	Left blank for Light Vessels (Series 12)
		1	90°W to 180°		
		2	180° to 90°E		
		3	90°E to 0°		
		5	0° to 90°W	South latitude	
		6	90°W to 180°		
		7	180° to 90°E		
		8	90°E to 0°		
9-11	Latitude	000-900	00·0° to 90·0°		Tenths figure obtained by dividing the minutes by six and neglecting the remainder. Left blank for Light Vessels (Series 12).
12-14	Longitude	000-999	00·0° to 99·9°		Tenths figure obtained by dividing the minutes by six and neglecting the remainder. When the longitude was more than 99·9° the hundreds figure was omitted. Left blank for Light Vessels (Series 12).
15-16	Hour	00-23	0000 to 2300 GMT		

Columns	Item	Code	Code Definition	Remarks	Reporting and Coding Practices
17	Total cloud amount	0	Clear sky		
		1-8	1 eighth to 8 eighths		
		9	Sky obscured	Or cannot be estimated due to darkness.	
		Y	No observation		
18-19	True wind direction	00	Calm		
		01-36	010° to 360°		
		99	Variable	Wind speed 5 knots or less	
		Y	No observation	Punched in column 18, column 19 blank.	
20-21	Wind Speed	00-99	0 to 99 knots		
		00-99	100 to 199 knots	With "X" overpunch on column 20	
		Y	No observation	Punched in column 20; column 21 blank.	
22-23	Visibility	90	Less than 55 yards		If visibility was between two of the distances given, then the code figure for the lower distance was reported e.g. visibility of 600 yards would have been given code figure 93.
		91	55 yards		
		92	220 yards		
		93	550 yards		
		94	1100 yards		
		95	2200 yards		
		96	2·2 nautical miles		
		97	5·4 nautical miles		
		98	10·8 nautical miles		

Columns	Item	Code	Code Definition	Remarks	Reporting and Coding Practices
22-23	Visibility (continued)	99	27 nautical miles or more		
		Y	No observation	Punched in column 22, Column 23 blank	
24-25	Present weather	00-49	NO PRECIPITATION AT THE SHIP AT THE TIME OF OBSERVATION		
		00-19	No precipitation, fog, dust-storm, sand storm, or drifting snow at the time of observation or during the preceding hour except for code 09.		
		00	Cloud development not observed or not observable		
		01	Clouds generally dissolving or becoming less developed	Characteristic change of the state of the sky during the past hour '	
		02	State of sky on the whole unchanged		
		03	Clouds generally forming or developing		
		04	Visibility reduced by smoke		
		05	Dry haze		
		06	Widespread dust in suspension in the air, not raised by wind at or near the ship at time of observation.		
		07	Dust or sand raised by wind at or near the ship at the time of observation, but no well developed dust devil(s) and no dust-storm seen.		

Columns	Item	Code	Code Definition	Remarks	Reporting and Coding Practices
24-25	Present weather (continued)	08	Well developed dust-devil(s) seen at or near the ship within last hour, but no dust-storm or sand-storm seen.		
		09	Dust-storm or sand-storm within sight of ship or at ship during the last hour.		
		10	Mist, visibility 1,100 yards or more.		
		11	Shallow fog at ship not deeper than about 10 metres (33 ft.) (visibility less than 1,100 yards)	In patches	
		12		More or less continuous	
		13	Lightning visible, no thunder heard.		
		14	Precipitation within sight, not reaching the ground or surface of the sea.		
		15	Precipitation within sight, reaching the ground or surface of sea, but distant (i.e. estimated to be more than 5 km) from the ship.		
		16	Precipitation within sight, reaching the ground or surface of sea, near to but not at the ship.		
		17	Thunder heard, but no precipitation at the ship.		
		18	Squalls within sight.	During the past hour	
		19	Funnel cloud(s). (Tornado cloud or waterspout)		

Columns	Item	Code	Code Definition	Remarks		Reporting and Coding Practices
24-25	Present weather (continued)	20-29	Precipitation, fog or thunderstorm	At the ship during the preceding hour but not at the time of observation		
		20	Drizzle	Not freezing	Not falling as shower(s)	
		21	Rain	Not freezing		
		22	Snow			
		23	Rain and snow			
		24	Freezing drizzle or freezing rain			
		25	Shower(s) of rain			
		26	Shower(s) of snow, or of rain and snow			
		27	Shower(s) of hail, or of hail and rain			
		28	Fog, visibility less than 1,100 yards			
		29	Thunderstorm (with or without precipitation)			
		30-39	Dust-storm, sand-storm or drifting snow			
		30	Slight or moderate dust-storm or sand-storm	Has decreased during preceding hour		
		31		No appreciable change during preceding hour		
		32		Has increased during the preceding hour		
		33	Heavy dust-storm or sand-storm	Has decreased during preceding hour		
		34		No appreciable change during preceding hour		

Columns	Item	Code	Code Definition	Remarks	Reporting and Coding Practices
24-25	Present weather (continued)	35	Heavy dust-storm or sand-storm	Has increased during preceding hour	
		36	Slight or moderate drifting snow	Generally low	
		37	Heavy drifting snow		
		38	Slight or moderate drifting snow	Generally high	
		39	Heavy drifting snow		
		40-49	Fog at time of observation	41-49 visibility less than 1,100 yards	
		40	Fog at a distance but not at the ship during the past hour	Fog extending to a level above that of the observer	
		41	Fog in patches		
		42	Fog, sky discernible	Has become thinner during the preceding hour	
		43	Fog, sky not discernible		
		44	Fog, sky discernible	No appreciable change during the preceding hour	
		45	Fog, sky not discernible		
		46	Fog, sky discernible	Has begun, or has become thicker during the preceding hour	
		47	Fog, sky not discernible		
		48	Fog, depositing rime	Sky discernible	
		49		Sky not discernible	
		50-99	PRECIPITATION AT THE SHIP AT THE TIME OF OBSERVATION		
		50-59	Drizzle		

umns	Item	Code	Code Definition	Remarks	Reporting and Coding Practices
15	Present weather (continued)	50	Drizzle, not freezing, intermittent	Slight at time of observation	
		51	Drizzle, not freezing, continuous		
		52	Drizzle, not freezing, intermittent	Moderate at time of observation	
		53	Drizzle, not freezing, continuous		
		54	Drizzle, not freezing, intermittent	Heavy at time of observation	
		55	Drizzle, not freezing, continuous		
		56	Drizzle, freezing	Slight	
		57		Moderate or thick	
		58	Drizzle and rain	Slight	
		59		Moderate or heavy	
		60-69	Rain		
		60	Rain, not freezing, intermittent	Slight at time of observation	
		61	Rain, not freezing, continuous		
		62	Rain, not freezing, intermittent	Moderate at time of observation	
		63	Rain, not freezing, continuous		
		64	Rain, not freezing, intermittent	Heavy at time of observation	
		65	Rain, not freezing, continuous		
		66	Rain, freezing	Slight	
		67		Moderate or heavy	

Columns	Item	Code	Code Definition	Remarks	Reporting and Coding Practices
24-25	Present weather (continued)	68	Rain (or drizzle) and snow	Slight	
		69		Moderate or heavy	
		70-79	Solid precipitation not falling as showers		
		70	Intermittent fall of snow flakes	Slight at time of observation	
		71	Continuous fall of snow flakes		
		72	Intermittent fall of snow flakes	Moderate at time of observation	
		73	Continuous fall of snow flakes		
		74	Intermittent fall of snow flakes	Heavy at time of observation	
		75	Continuous fall of snow flakes		
		76	Ice needles	With or without fog	
		77	Granular snow		
		78	Isolated star-like snow crystals		
		79	Ice pellets		
		80-90	Showery precipitation	No thunder at time of observation or in the preceding hour	
		80	Rain shower(s)	Slight	
		81		Moderate or heavy	
		82		Violent	
		83	Shower(s) of rain and snow	Slight	
		84		Moderate or heavy	

Columns	Item	Code	Code Definition	Remarks	Reporting and Coding Practices
24-25	Present weather	85	Snow shower(s)	Slight	
		86		Moderate or heavy	
		87	Showers of soft or small hail with or without rain or rain and snow mixed	Slight	
		88		Moderate or heavy	
		89	Showers of hail, with or without rain or rain and snow mixed, not associated with thunder	Slight	
		90		Moderate or heavy	
		91-99	Thunderstorms	At time of observation or in preceding hour	
		91	Slight rain at time of observation	Thunderstorm during the preceding hour, but not at time of observation	
		92	Moderate or heavy rain at time of observation		
		93	Slight snow, or rain and snow mixed, or hail at time of observation		
		94	Moderate or heavy snow, or rain and snow mixed, or hail at time of observation		
		95	Thunderstorm, slight or moderate, without hail, but with rain and/or snow at time of observation	Thunderstorm at time of observation	
		96	Thunderstorm, slight or moderate, with hail at time of observation		
		97	Thunderstorm, heavy, without hail, but with rain and/or snow at time of observation		

Columns	Item	Code	Code Definition	Remarks	Reporting and Coding Practices
24-25	Present weather (continued)	98	Thunderstorm combined with dust-storm or sand-storm at time of observation. No precipitation (rain, snow, hail)		
		99	Thunderstorm, heavy, with hail at time of observation		
		Y	No observation	Punched in column 24, column 25 blank	
26	Past weather	0	Cloud cover 1/8 or less of the sky throughout the period		
		1	Cloud cover 1/8 sky or less for part of the period and more than 1/8 sky for part of that period		
		2	Cloud cover more than 1/8 of the sky throughout the period		
		3	Dust-storm, sand-storm or drifting snow		
		4	Fog or thick haze		
		5	Drizzle		
		6	Rain		
		7	Snow or rain and snow mixed		
		8	Showers		
		9	Thunderstorm, with or without precipitation		
		Y	No observation		

Columns	Item	Code	Code Definition	Remarks	Reporting and Coding Practices
27-31	Barometer	09000-10999	900·0 to 1099·9 mbs.		Corrected for temperature and gravity and reduced to mean sea level
		Y	No observation	Punched in column 27, columns 28-31 blank.	
32-34	Air temperature	000-999	0·0°F to 99·9°F		If temperature was reported in whole degrees then it was punched in columns 32-33 and 34 left blank
		001-999	–0·1°F to –99·9°F	With "X" overpunch in column 32.	
		000-999	100·0°F to 199·9°F	With "X" overpunch in column 33.	
		Y	No observation	Punched in column 32, columns 33-34 blank	
35-37	Wet bulb temperature	000-999	0·0°F to 99·9°F		Column 37 left blank if only reported in whole degrees
		001-999	–0·1°F to –99·9°F	With "X" overpunch in column 35.	
		Y	No observation	Punched in column 35, columns 36-37 blank	
38	Amount of low cloud	0-9	as Total cloud (column 17)		
		Y	No observation		
39	Type of low cloud	0	No cumulus, cumulonimbus, stratocumulus or stratus		
		1	Ragged cumulus other than bad weather, or cumulus with little vertical development and seemingly flattened, or both.		

Columns	Item	Code	Code Definition	Remarks	Reporting and Coding Practices
39	Type of low cloud (continued)	2	Cumulus of moderate or strong vertical development generally with protuberances in the form of domes or towers, either accompanied or not by other cumulus or by stratocumulus: all having their base at the same level.		
		3	Cumulonimbus the summits of which, at least partially, lack sharp outlines, but are neither clearly fibrous, cirriform nor in the form of an anvil:- cumulus, stratocumulus or stratus may be present.		
		4	Stratocumulus formed by the spreading out of cumulus: cumulus may also be present.		
		5	Stratocumulus not proceeding from the spreading out of cumulus.		
		6	Stratus in a more or less continuous sheet or layer, or in ragged shreds, or both, but no stratus fractus of bad weather.		
		7	Stratus fractus of bad weather or cumulus fractus of bad weather (pannus), or both; usually below altostratus or nimbostratus.		
		8	Cumulus and stratocumulus, other than those formed from the spreading out of cumulus; the base of the cumulus at a different level from that of the stratocumulus.		

Columns	Item	Code	Code Definition	Remarks	Reporting and Coding Practices
39	Type of low cloud (continued)	9	Cumulonimbus, the upper part of which is clearly fibrous (cirriform), often in the form of an anvil; either accompanied or not by cumulus, stratocumulus, stratus or pannus.		
		X	Sky not discernible due to fog or other phenomenon.		
		Y	No observation		
40	Height of low cloud	0	0 to 150 feet		A height exactly equal to one of the heights in the table is reported by the higher code figure e.g. a height of 2,000 feet would be reported as code figure 5. If sky is not discernible due to fog or other phenomenon then code figure 0 is reported.
		1	150 to 300 feet		
		2	300 to 600 feet		
		3	600 to 1,000 feet		
		4	1,000 to 2,000 feet		
		5	2,000 to 3,000 feet		
		6	3,000 to 5,000 feet		
		7	5,000 to 6,500 feet		
		8	6,500 to 8,000 feet		
		9	No cloud below 8,000 feet		
		Y	No observation		
41	Type of medium cloud	0	No altocumulus, altostratus or nimbostratus.		

Columns	Item	Code	Code Definition	Remarks	Reporting and Coding Practices
41	Type of medium cloud (continued)	1	Altostratus, the greatest part of which is semi-transparent: through this part the sun or moon may be weakly visible as through ground glass.		
		2	Altostratus, the greatest part of which is sufficiently dense to hide the sun or moon, or nimbostratus.		
		3	Altocumulus, the greatest part of which is semi-transparent, other than crenelated or in cumuliform tufts: the various elements of the cloud change but slowly and are all at a single level.		
		4	Patches of semi-transparent altocumulus (often in the form of almonds or fishes) which are at one or more levels: the elements of this cloud are continuously changing in aspect.		
		5	Semi-transparent altocumulus in bands, or altocumulus in one more or less continuous layer progressively invading the sky: these altocumulus clouds generally thicken as a whole. The layer may be opaque or double with a second sheet.		
		6	Altocumulus proceeding from the spreading out of cumulus.		

Colums	Item	Code	Code Definition	Remarks	Reporting and Coding Practices
41	Type of medium cloud (continued)	7	Any of the following:- (*a*) Altocumulus in two or more layers, usually opaque in places and not progressively invading the sky. (*b*) Opaque layer of altocumulus not progressively invading the sky. (*c*) Altocumulus co-existing with altostratus or nimbostratus or with both.		
		8	Altocumulus with sprouts in the form of small towers or battlements, or altocumulus having the aspect of cumuliform tufts.		
		9	Altocumulus, generally at several layers in a chaotic sky: dense cirrus is usually present.		
		X	Sky not discernible due to fog or other phenomenon.		
		Y	No observation		
42	Type of high cloud	0	No cirrus, cirrostratus or cirrocumulus.		
		1	Cirrus in the form of filaments, strands or hooks, not progressively invading the sky (often called "mares" tails).		

Columns	Item	Code	Code Definition	Remarks	Reporting and Coding Practices
42	Type of high cloud (continued)	2	Dense cirrus in patches or entangled sheaves which usually do not increase and sometimes seem to be the remains of the upper part of cumulonimbus: or cirrus with sproutings in the form of towers or battlements or having the aspect of cumuliform tufts.		
		3	Cirrus, often in the form of an anvil, either the remains of the upper parts of cumulonimbus or parts of distinct cumulonimbus, the cumuliform portions of which cannot be seen.		
		4	Cirrus in the form of hooks or of filaments, or both, progressively invading the sky: they generally become denser as a whole.		
		5	Cirrus, often in bands converging towards one or two points of the horizon and cirrostratus, or cirrostratus only: in either case they are progressively invading the sky, and generally growing denser as a whole, but the continuous veil does not reach 45 degrees above the horizon.		
		6	Cirrus, often in bands converging towards one or two points of the horizon and cirrostratus, or cirrostratus only: in either case they are progressively invading the sky, and generally growing denser as a whole, but the continuous veil exceeds 45 degrees above the horizon without the sky being totally covered.		

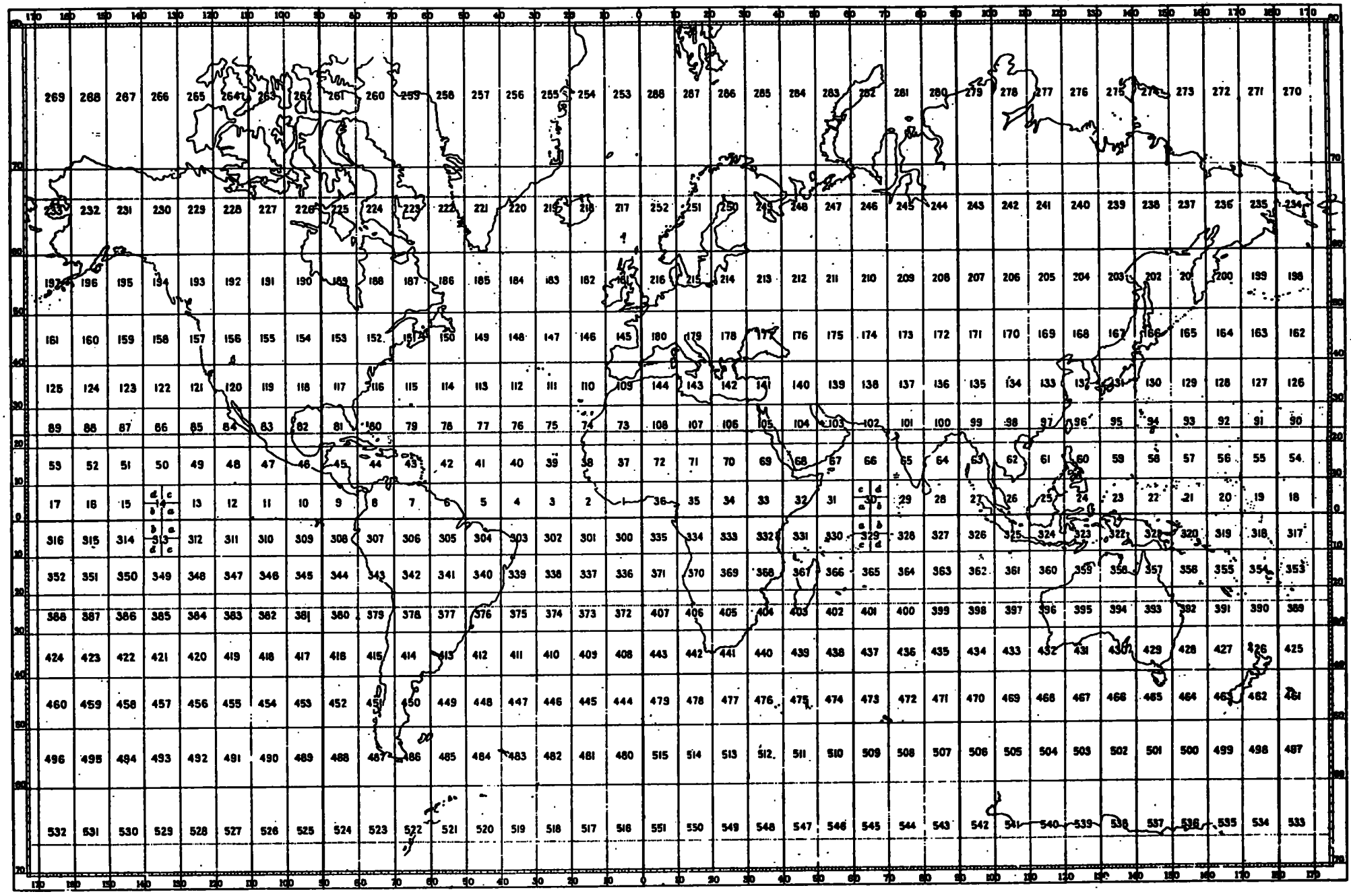
Columns	Item	Code	Code Definition	Remarks	Reporting and Coding Practices
42	Type of high cloud (continued)	7	Veil of cirrostratus completely covering the celestial dome.		
		8	Cirrostratus not progressively invading the sky and not completely covering the celestial dome.		
		9	Cirrocumulus alone or cirrocumulus accompanied by cirrus or cirrostratus, or both, but cirrocumulus is the predominant cirriform cloud.		
		X	Sky not discernible due to fog or other phenomenon.		
		Y	No observation		
43-45	Sea temperature	000-999	0·0°F to 99·9°F		Column 45 left blank if only reported in whole degrees.
		Y	No observation	Punched in column 43, columns 44-45 blank.	
46-48	Air minus sea temperature difference	000-999	0·0°F to 99·9°F	Air temperature greater than or the same as sea temperature.	If air and/or sea temperature was reported in whole degrees then air minus sea difference was punched in whole degrees leaving column 48 blank.
		001-999	0·1°F to 99·9°F	With "X" overpunch in column 46. Sea temperature greater than air temperature.	
		Y	No observation	Punched in column 46, columns 47-48 blank.	
49-50	Wave direction	00	Calm		In the case of half way values, the higher ten-degree value was coded, e.g. 125° was coded as 13.
		01-36	010° to 360°	Direction from which waves are coming.	
		49	Confused	Wave height 15 feet or less.	

Columns	Item	Code	Code Definition	Remarks	Reporting and Coding Practices
49-50	Wave direction (continued)	51-86	010° to 360°	50 added. See code for Wave height column 52.	
		99	Confused	Wave height over 15 feet.	
		Y	No observation	Punched in column 49, column 50 blank.	
51	Wave period	0	20 to 21 seconds		
		1	Over 21 seconds		
		2	5 seconds or less		
		3	6 to 7 seconds		
		4	8 to 9 seconds		
		5	10 to 11 seconds		
		6	12 to 13 seconds		
		7	14 to 15 seconds		
		8	16 to 17 seconds		
		9	18 to 19 seconds		
		X	Calm or not determined		
		Y	No observation		
52	Wave height	0	Less than 1 foot		If a wave height came exactly between two of the heights shown in table then code figure for lower height was reported, e.g. wave height of 12 feet would have been reported as code figure 7.
		1	1½ feet		
		2	3 feet		
		3	5 feet		

Columns	Item	Code	Code Definition	Remarks	Reporting and Coding Practices
52	Wave height (continued)	4	6½ feet		
		5	8 feet		
		6	9½ feet		
		7	11 feet		
		8	13 feet		
		9	14 feet		
		0	16 feet	With 50 added to wave direction columns 49-50.	
		1	17½ feet		
		2	19 feet		
		3	21 feet		
		4	22½ feet		
		5	24 feet		
		6	25½ feet		
		7	27 feet		
		8	29 feet		
		9	30½ feet		
		0	33 feet	With "X" overpunch on column 52 and 50 added to wave direction columns 49-50.	
		1	36 feet		
		2	39 feet		
		3	43 feet		

Columns	Item	Code	Code Definition	Remarks	Reporting and Coding Practices
52	Wave height (continued)	4	46 feet		
		5	49 feet		
		6	52 feet		
		7	56 feet		
		8	59 feet		
		9	62 feet		
		X	Height unable to be determined		
		Y	No observation		
53-59	Not used	Blank			
60-63	Wave direction, period and height		Same as columns 49-52		
64-66	Not used	Blank			
67-68	Series number	11	MARID reports and Scottish Fishery Cruisers from 1.7.56 to 31.12.61.		
		12	Light Vessel reports from 1.7.56 to 31.12.61.		
		13	Observations from British, H.M. Ships, Commonwealth and certain foreign ships from 1.7.56 to 31.12.61.		
		14	British, French and Dutch Weather Ships on stations "A", "I" and "J" from 1.7.56 to 31.12.61.		

Columns	Item	Code	Code Definition	Remarks	Reporting and Coding Practices
69-73	Logbook number	00000-99999	The number of the log in which the observation is recorded.		For series 12 only, columns 72-73 were used for recording the number assigned to Light Vessels and columns 69-71 were left blank. In the early part of Series 13 columns 69-73 were left blank for observations from H.M. ships and code letters for the ships were written on the back of the cards. Later however logbook numbers were allocated to these ships.
74-75	Not used	Blank			
76-78	10° Marsden square number	001-288	10° Square		The globe is divided into ten degree squares according to the Marsden chart and the position of the ship at time of observation is given by the Marsden square number from the chart. See chart at Appendix I. These numbers were calculated from the octant latitude and longitude and gang-punched into the cards.
		300-623			
		800-835			
79-80	Dew point	00-99	0°F to 99°F		
		00-99	-1°F to -99°F	With "X" overpunch in column 79.	
		Y	No observation	Punched in column 79, column 80 blank.	



Marsden Square numbers outside the area of this chart: These continue in sequence from 552 (70°–80°S., 0°–10°W.) to 623 (80°–90°S., 0°–10°E.) in the south, and from 800 (80°–90°N., 0°–10°W.) to 835 (80°–90°N., 0°–10°E.) in the north.