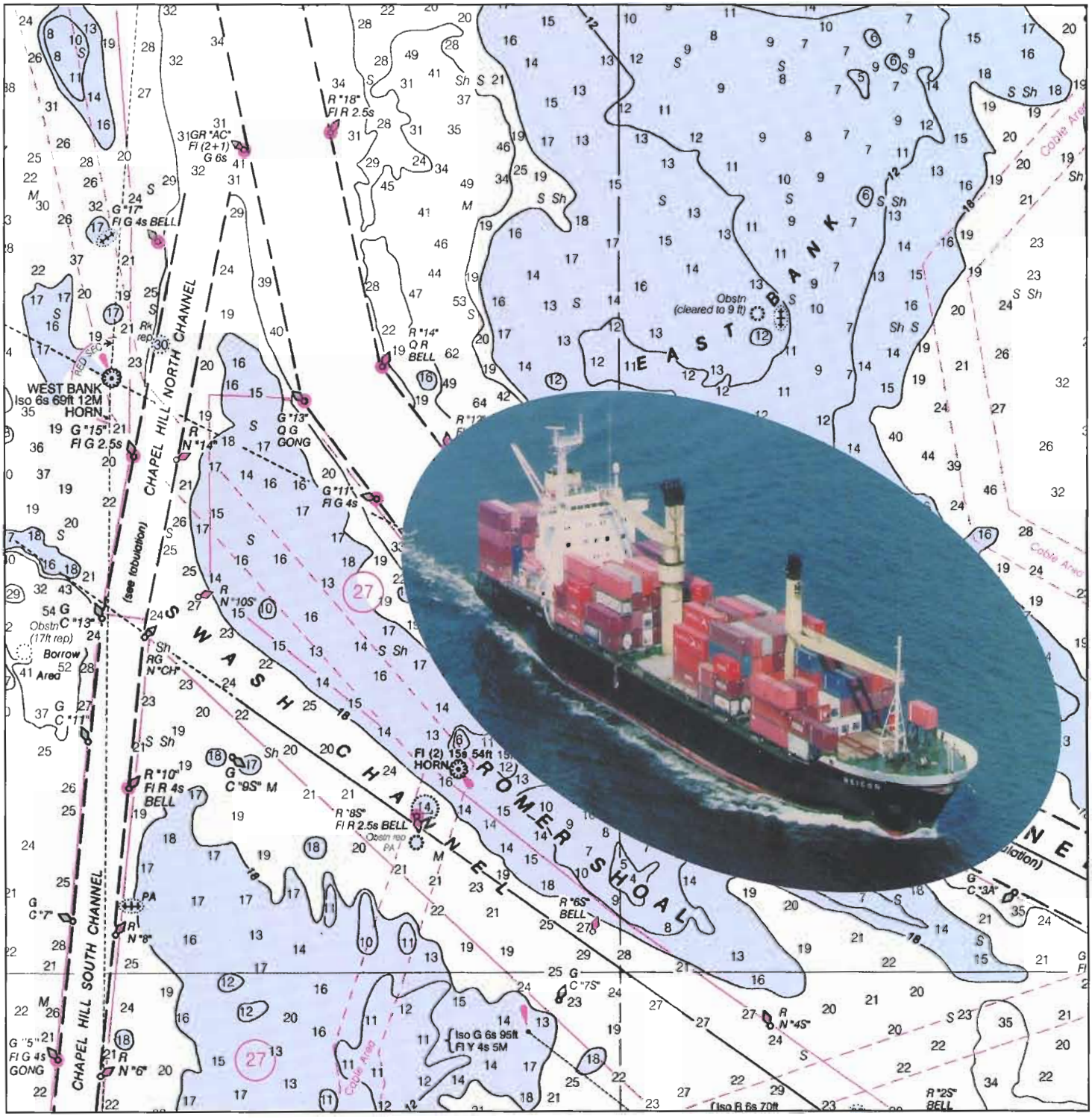
CHART NO. 1

UNITED STATES OF AMERICA

NAUTICAL CHART

Symbols Abbreviations and Terms



TENTH EDITION

NOVEMBER 1997

SETSAIL

CONTENTS

INTRODUCTION AND SCHEMATIC LAYOUT — Selection of Symbols:

GENERAL
- A Chart Number, Title, Marginal Notes — 44 (INT 1452) 1 : 10 000 104
- B Positions, Distances, Directions, Compass — +3° 4°30'W 1987 (9'W)

TOPOGRAPHY
- C Natural Features
- D Cultural Features
- E Landmarks
- F Ports
- G Topographic Terms

HYDROGRAPHY
- H Tides, Currents
- I Depths
- J Nature of the Seabed
- K Rocks, Wrecks Obstructions
- L Offshore Installations
- M Tracks, Routes
- N Areas, Limits
- O Hydrographic Terms

AIDS AND SERVICES
- P Lights
- Q Buoys, Beacons
- R Fog Signals
- S Radar, Radio, Electronic Position-Fixing Systems
- T Services
- U Small Craft Facilities

ALPHABETICAL INDEXES
- V Index of Abbreviations
- W International Abbreviations
- X List of Descriptors

NSN 7642014009433
NIMA STOCK NO. WOBZC1
ED. NO. 10

SETSAIL™

Chart No.1

United States of America

Nautical Chart Symbols Abbreviations and Terms

Tenth Edition
NOVEMBER 1997

Prepared Jointly by

DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Ocean Service

DEPARTMENT OF DEFENSE
National Imagery and Mapping Agency

Published at Washington, D.C.
DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Ocean Service

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Record of Corrections

Supplement No.	*Notice No.*	*Corrected on*	*Corrected by*

SYMBOLS ABBREVIATIONS TERMS USED ON CHARTS

CONTENTS

INTRODUCTION
and Schematic Layout

GENERAL

A Chart Number, Title, Marginal Notes
B Positions, Distances, Directions, Compass

TOPOGRAPHY

C Natural Features
D Cultural Features
E Landmarks
F Ports
G Topographic Terms

HYDROGRAPHY

H Tides, Currents
I Depths
J Nature of the Seabed
K Rocks, Wrecks, Obstructions
L Offshore Installations
M Tracks, Routes
N Areas, Limits
O Hydrographic Terms

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P Lights
Q Buoys, Beacons
R Fog Signals
S Radar, Radio Electronic Position-Fixing Systems
T Services
U Small Craft Facilities

ALPHABETICAL INDEXES

V Index of Abbreviations
W International Abbreviations
X List of Descriptors

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INTRODUCTION

General Remarks—The tenth edition of Chart No. 1, Nautical Chart Symbols Abbreviations and Terms incorporates the symbols contained in the International Hydrographic Organization (IHO) Chart 1 (INT 1).The various sections comprising the Table of Contents follow the sequence presented in INT 1; therefore the numbering system in this publication follows the standard format approved and adopted by the IHO.

Where appropriate, each page lists separately the current preferred U.S. symbols shown on charts of the National Ocean Service (NOS) and the National Imagery and Mapping Agency (NIMA). Also shown in separate columns are the IHO symbols and symbols used on foreign charts reproduced by NIMA.

This edition includes a schematic layout of a typical page showing what kind of information each column presents. In addition, a typical layout of an NOS chart is shown (Section A); a page outlining tidal levels and other charted tidal data has also been included (Section H).

For more information on the use of the chart, the practice of navigation, chart sounding datum, and visual and audible aids to navigation, the user should refer to NIMA Pub. No. 9, American Practical Navigator (Bowditch).

Tide and current data is contained in the Tide Tables and Tidal Current Tables.Detailed information on lights, buoys, and beacons is available in the Coast Guard Light List and NIMA List of Lights. In addition, color plates of the U.S. Aids to Navigation System and the Uniform State Waterway Marking System are contained in the Coast Guard Light Lists.

Other important information that cannot be shown conveniently on the nautical chart can be found in the U.S. Coast Pilots and NIMA Sailing Directions.

Metric Charts and Feet/Fathom Charts—In January, 1972 the United States began producing a limited number of nautical charts in meters. Since then, some charts have been issued with soundings and contours in meters; however, for some time to come there will still be many charts on issue depicting sounding units in feet or fathoms. Modified reproductions of foreign charts are being produced retaining the sounding unit value of the country of origin. The sounding unit is stated in bold type outside the border of every chart and in the chart title

Soundings— The sounding datum reference is stated in the chart title. In all cases the unit of depth used is shown in the chart title and in the border of the chart in bold type.

Drying Heights—On rocks and banks that cover and uncover, the elevations shown are above the sounding datum, as stated in the chart title.

Shoreline— Shoreline shown on charts represents the line of contact between the land and a selected water elevation. In areas affected by tidal fluctuation, this line of contact is usually the mean high-water line. In confined coastal waters of diminished tidal influence, a mean water level line may be used. The shoreline of interior waters (rivers, lakes) is usually a line representing a specified elevation above a selected datum. Shoreline is symbolized by a heavy line (Section C1).

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Apparent Shoreline is used on charts to show the outer edge of marine vegetation where that limit would reasonably appear as the shoreline to the mariner or where it prevents the shoreline from being clearly defined. Apparent shoreline is symbolized by a light line (Sections C32, C33 and C34).

Landmarks—A conspicuous feature on a building may be shown by a landmark symbol with a descriptive label (Sections E10 and E22). Prominent buildings that are of assistance to the mariner may be shown by actual shape as viewed from above (Sections D5, D6, and E34). Legends associated with landmarks, when shown in capital letters, indicate that they are conspicuous; the landmark may also be labeled "CONSPIC" or "CONSPICUOUS."

Buoys—The buoyage systems used by other countries often vary from that used by the United States. U.S. Charts show the colors, lights and other characteristics in use for the area of the individual chart. In the U.S. system, on entering a channel from seaward, buoys on the starboard side are red with even numbers, on the port side, green with odd numbers. Lights on buoys on the starboard side of the channel are red, on the port side, green. Mid-channel buoys have red and white vertical stripes and may be passed on either side. Junction or obstruction buoys have red and green horizontal bands, the top band color indicating the preferred side of passage. This system may not apply to foreign waters or in areas of the U.S. which are in IALA, Region A.

Light Visibility (Range)—(Other than on the Great Lakes and adjacent waterways.) A light's visibility (range) is given in nautical miles. Where the visibility (range) is shown as x/x M for a two (2) color light, the first number indicates the visibility (range) of the first color, while the second number indicates the visibility (range) of the second color. For example, Fl W G 12/8M indicates the visibility (range) of the white light to be 12 nautical miles and the green light to be 8 nautical miles. Where a light has three (3) colors, only the longest and shortest visibilities (ranges) may be given, in which case the middle visibility (range) is represented by a hyphen. For example, Fl W R G 12-8M indicates the visibility (range) of the white light to be 12 nautical miles, the green light to be 8 nautical miles, and the red light to be between 12 and 8 nautical miles.

IALA Buoyage System—The International Association of Lighthouse Authorities (IALA) Maritime Buoyage System (combined Cardinal-Lateral System) is being implemented by nearly every maritime buoyage jurisdiction worldwide as either REGION A buoyage (red to port) or REGION B buoyage (red to starboard). The terms "REGION A" and "REGION B" will be used to determine which type of buoyage is in effect or undergoing conversion in a particular area. The major difference in the two buoyage regions will be in the lateral marks. In REGION A they will be red to port; in REGION B they will be red to starboard. Shapes of lateral marks will be the same in both REGIONS, can to port; cone (nun) to starboard. Cardinal and other marks will continue to follow current guidelines and may be found in both REGIONS. A modified lateral mark, indicating the preferred channel where a channel divides, will be introduced for use in both REGIONS. Section Q and the color plates at the back of this publication illustrate the IALA buoyage system for both REGIONS A and B.

Aids to Navigation Positioning—The aids to navigation depicted on charts comprise a system consisting of fixed and floating aids with varying degrees of reliability. Therefore, prudent mariners will not rely solely on any single aid to navigation, particularly a floating aid.

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The buoy symbol is used to indicate the approximate position of the buoy body and the sinker which secures the buoy to the seabed. The approximate position is used because of practical limitations in positioning and maintaining buoys and their sinkers in precise geographical locations. These limitations include, but are not limited to, inherent imprecisions in position fixing methods, prevailing atmospheric and sea conditions, the slope of and the material making up the seabed, the fact that buoys are moored to sinkers by varying lengths of chain, and the fact that buoy body and/or sinker positions are not under continuous surveillance but are normally checked only during periodic maintenance visits which often occur more than a year apart. The position of the buoy body can be expected to shift inside and outside the charting symbol due to the forces of nature. The mariner is also cautioned that buoys are liable to be carried away, shifted, capsized, sunk, etc. Lighted buoys may be extinguished or sound signals may not function as the result of ice, running ice, other natural causes, collisions, other accidents, or vandalism.

For the foregoing reasons a prudent mariner must not rely completely upon the position or operation of floating aids to navigation, but will also utilize bearings from fixed objects and aids to navigation on shore. Further, a vessel attempting to pass close aboard always risks collision with a yawing buoy or with the obstruction the buoy marks.

Colors—Colors are optional for characterizing various features and areas on the charts. For instance the land tint in this publication is gold as used on charts of the NOS; however, most charts of the NIMA show land tint as gray.

Heights—Heights of lights, landmarks, structures, etc. are referred to the shoreline plane of reference. Heights of small islets or offshore rocks, which due to space limitations must be placed in the water area, are bracketed. The unit of height is shown in the chart title.

Conversion Scales — Depth conversion scales are provided on all charts to enable the user to work in meters, fathoms, or feet.

Traffic Separation Schemes — Traffic separation schemes show recommended lanes to increase safety of navigation, particularly in areas of high density shipping. These schemes are described in the International Maritime Organization publication "Ships Routing".

Traffic separation schemes are generally shown on nautical charts at scales of 1:600,000 and larger. When possible, traffic separation schemes are plotted to scale and shown as depicted in Section M.

Correction Date — The date of each edition is shown below the lower left border of the chart. This is the date of the latest Notice to Mariners applied to the chart.

U.S. Coast Pilots, Sailing Directions, Light Lists, Lists of Lights —These related publications furnish information required by the navigator that cannot be shown conveniently on the nautical charts.

U.S. Nautical Chart Catalogs and Indexes— These list nautical charts, auxiliary maps, and related publications and include general information relative to the use and ordering of charts.

Corrections and Comments—Notices of Corrections for this publication will appear in the weekly Notice to Mariners. USERS SHOULD REFER CORRECTIONS, ADDITIONS, AND COMMENTS TO THE NIMA CUSTOMER HELP DESK: 1-800-455-0899, COMMERCIAL 314-260-1236, DSN 490-1236, OR WRITE TO: DIRECTOR, NATIONAL IMAGERY AND MAPPING AGENCY, ATTN: CO, 8613 LEE HIGHWAY, FAIRFAX, VA 22031-2137.

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K Rocks, Wrecks, Obstructions

2	1	4
3 **Wrecks**		Supplementary national symbols: a
5 Plane of Reference for Depths → H		

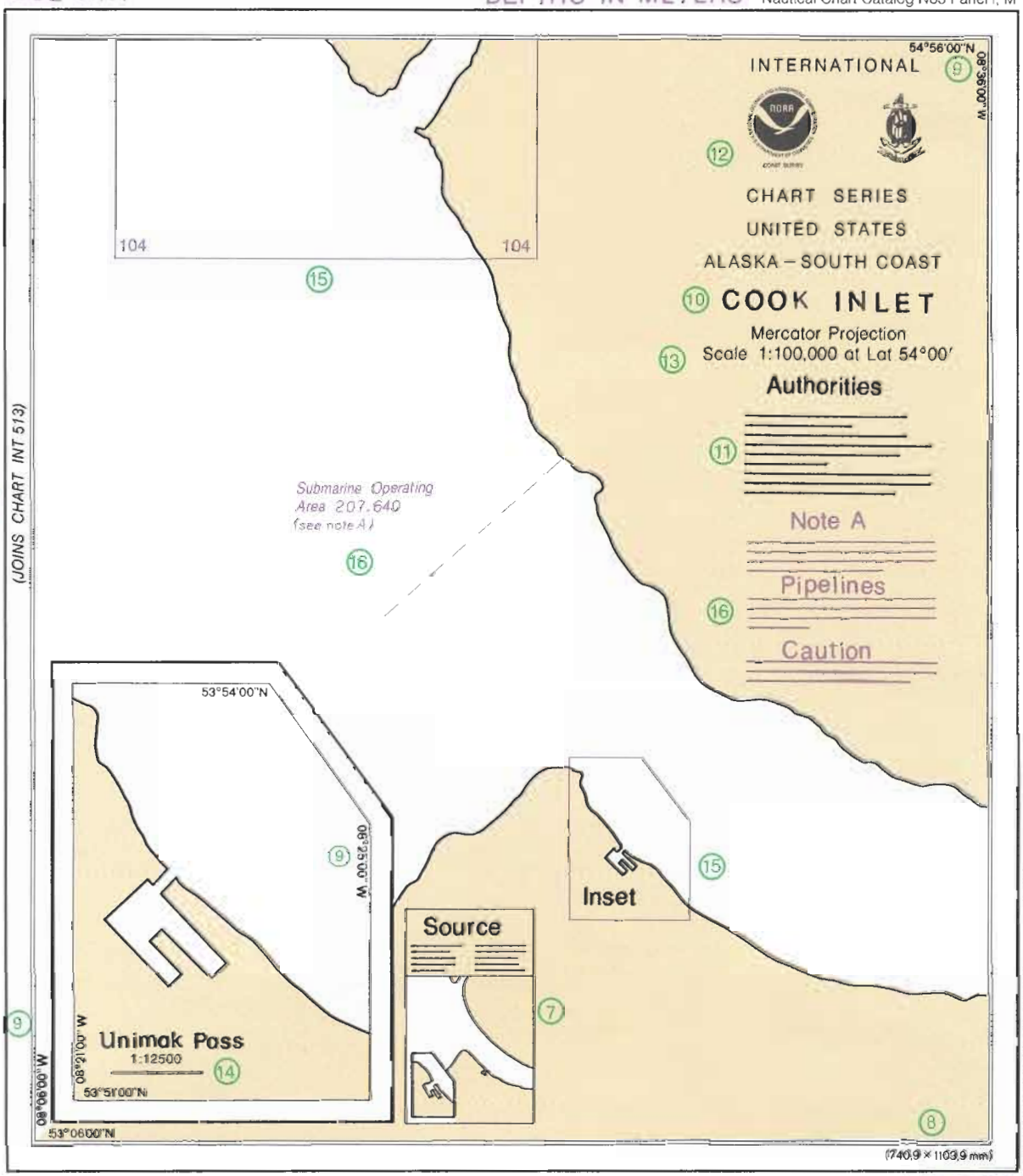
6	7a	7b	8	9	10
43.1	Subm piles Subm piling	Obstn	Stumps of posts or piles, fully submerged	Obstn	

1	Section.
2	Section designation
3	Subsection.
4	Reference to "Supplementary national symbols" at the end of each section.
5	Cross reference to terms in other sections.
6	Column 1: Numbering system following the "Chart Specification of the IHO". A letter in this column indicates a supplementary national symbol or abbreviation for which there is no international equivalent.
7a	Column 2: Representation used on charts produced by the National Ocean Service (NOS). In certain instances, the representation is clarified by a label on the chart.
7b	Column 3: Representation used on charts produced by the National Imagery and Mapping Agency (NIMA). Note: When the NOS and NIMA symbols are identical, Column 2 and Column 3 are combined to show only one set of symbols.
8	Column 4: Description of symbol, term, or abbreviation.
9	Column 5: Representation following the "Chart Specifications of the IHO".
10	Column 6: Representation of symbols that may appear on NIMA reproductions of foreign charts.

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A Chart Number, Title, Marginal Notes

Schematic layout of an NOS chart (reduced in size)



A Chart Number, Title, Marginal Notes

Magnetic Features → B	Tidal Data → H	Decca, Loran-C, Omega → S

①	Chart number in national chart series
②	Identification of a latticed chart (if any): D for Decca LC for Loran-C Om for Omega
③	Chart number in international chart series (if any)
④	Publication note (imprint)
⑤	Bar Code and Stock Numbers
⑥	Edition note. In the example: Seventh edition published in June, 1996
⑦	Source data diagram (if any). For attention to navigators: use caution where surveys are inadequate
⑧	Dimensions of inner borders
⑨	Corner co-ordinates
⑩	Chart title } May be quoted when ordering a chart, in addition to chart number
⑪	Explanatory notes on chart construction, etc. To be read before using chart
⑫	Seals: In the example, the national and International Hydrographic Organization seals show that this national chart is also an international one. Purely national charts have the national seal only. Reproductions of charts of other nations (facsimile) have the seals of the original producer (left), publisher (center) and the IHO (right)
⑬	Projection and scale of chart at stated latitude. The scale is precisely as stated only at the latitude quoted
⑭	Linear scale on large-scale charts
⑮	Reference to a larger-scale chart
⑯	Cautionary notes (if any). Information on particular features, to be read before using chart
⑰	Reference to an adjoining chart of similar scale

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B Positions, Distances, Directions, Compass

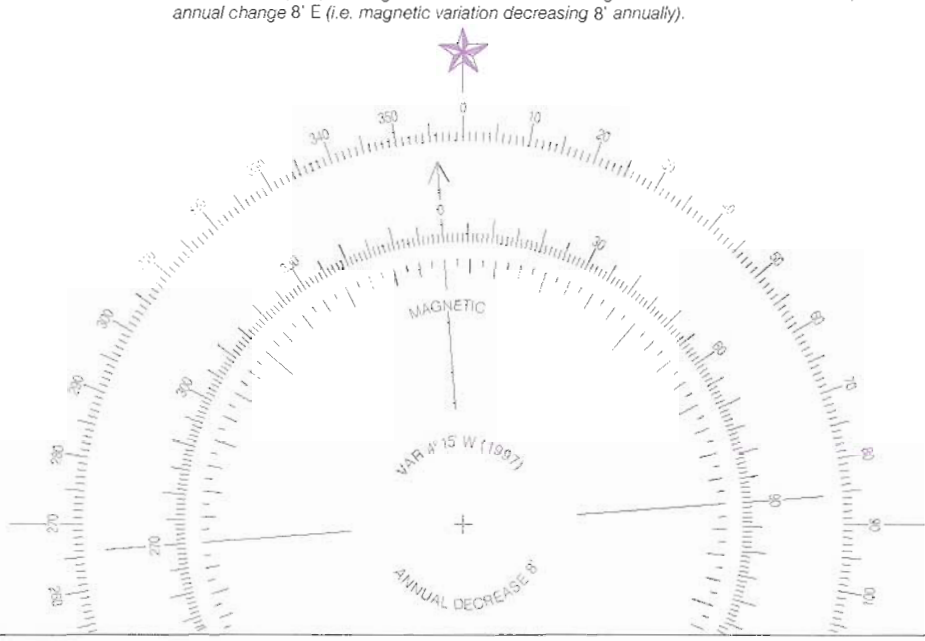
Geographical Positions			
1	Lat	*Latitude*	Lat
2	Long	*Longitude*	Long
3		*International meridian (Greenwich)*	
4	°	*Degree(s)*	°
5	′	*Minute(s) of arc*	′
6	″	*Second(s) of arc*	″
7	*PA*	*Position approximate*	*PA*
8	*PD*	*Position doubtful*	*PD*
9	N	*North, Northern*	N
10	E	*East, Eastern*	E
11	S	*South, Southern*	S
12	W	*West, Western*	W
13	NE	*Northeast*	NE
14	SE	*Southeast*	SE
15	NW	*Northwest*	NW
16	SW	*Southwest*	SW
Control Points			
20	△	*Triangulation point*	△
21	⊕ Obs Spot	*Observation spot*	⊕
22	⊙	*Fixed point*	⊙
23	○ BM	*Benchmark*	⊤
24	◈ Bdy Mon	*Boundary mark*	
Symbolized Positions (Examples)			
30	⌗ 18 Wk (PA)	*Symbols in plan: position is center of primary symbol*	⌗ ⌗ 18 Wk (PA)
31	▮ ⚐	*Symbols in profile: position is at bottom of symbol*	▲ ▮ ⚐ ⚐
32	⊙	*Point symbols (accurate positions)*	⊙ Mast ⊙ MAST ☆
33	○	*Approximate position*	○ Mast PA

B *Positions, Distances, Directions, Compass*

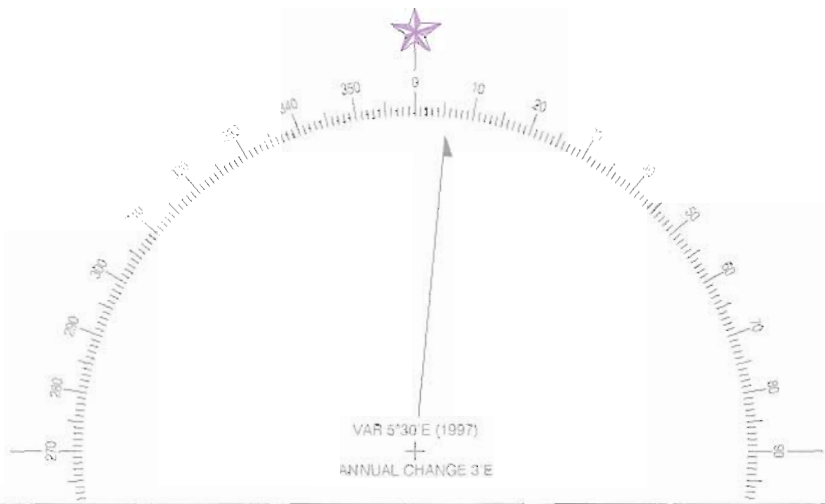
Units			*Supplementary national symbols:* a – m	
40	km	*Kilometer(s)*	km	
41	m	*Meter(s)*	m	
42	dm	*Decimeter(s)*	dm	
43	cm	*Centimeter(s)*	cm	
44	mm	*Millimeter(s)*	mm	
45	M, Mi, NMi, NM	*Nautical mile(s) (1852 m) or sea mile(s)*	M	
46	cbl	*Cable(s) length*		
47	ft	*Foot/feet*	ft	
48	fm, fms	*Fathom(s)*		
49	h, hr	*Hour*	h	
50	m, min	*Minute(s) of time*	m	min
51	s, sec	*Second(s) of time*	s	sec
52	kn	*Knot(s)*	kn	
53	t	*Ton(s) (metric ton equals 2,204.6 lbs)*	t	
54	cd	*Candela (new candle)*	cd	
Magnetic Compass			*Supplementary national symbols:* n	
60	var VAR	*Variation*		
61	mag	*magnetic*		
62	brg	*Bearing*		
63	T	*true*		
64		*decreasing*		
65		*increasing*		
66		*Annual change*		
67	dev	*Deviation*		
68.1		*Note of magnetic variation, in position*	Magnetic Variation 4°31'W 1995 (8'E)	
68.2		*Note of magnetic variation, out of position*	Magnetic variation at 55°N 8°W 4°31'W 1995 (8'E)	

70 *Compass rose, normal pattern (smaller patterns of compass rose may be used)*

Magnetic Variation (example): 4°15' W 1997 (8' E) *on magnetic north arrow means Magnetic Variation* 4°15' W *in* 1997, *annual change* 8' E *(i.e. magnetic variation decreasing* 8' *annually).*



True north compass rose



71 *Isogonic lines*

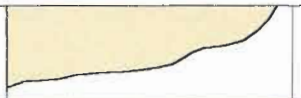
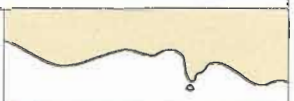
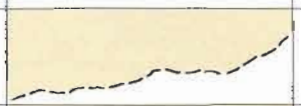
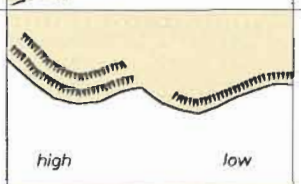
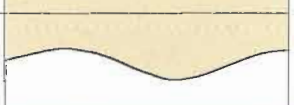
Magnetic Variation Curves are for 1997
The Magnetic Variation is shown in degrees, followed by the letter W or E, as appropriate, at certain positions on the curves. The annual change is expressed in minutes with the letter W or E and is given in brackets, immediately following the variation.



B *Positions, Distances, Directions, Compass*

82.1		*Local magnetic disturbance* *Within the enclosed area the magnetic variation may deviate from the normal by the value shown*	
82.2	Local Magnetic Disturbance (see Note)	*Where the area affected cannot be easily defined, a legend only is shown at the position*	Local Magnetic Anomaly (see Note)
Supplementary National Symbols			
a	m^2	*Square meter*	
b	m^3	*Cubic meter*	
c	in, ins	*Inch(es)*	
d	yd, yds	*Yard(s)*	
e	St M, St Mi	*Statute mile*	
f	*μsec, μs*	*Microsecond*	
g	Hz	*Hertz*	
h	kHz	*Kilohertz*	
i	MHz	*Megahertz*	
j	cps, c/s	*Cycles/second*	
k	kc	*Kilocycle*	
l	Mc	*Megacycle*	
m	T	*Ton (U.S. short ton equals 2,000 lbs)*	
n	deg	*Degree(s)*	

C Natural Features

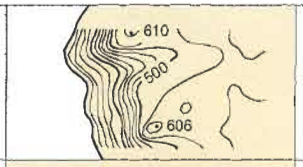
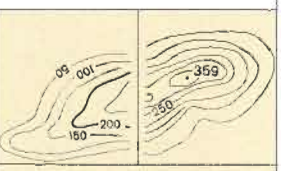
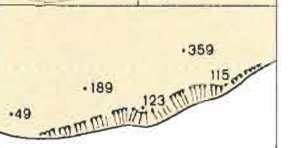
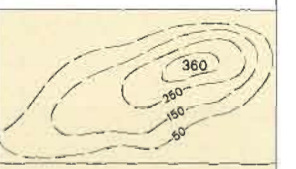
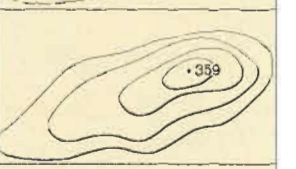
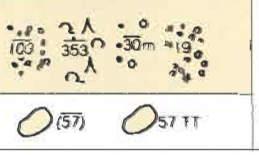
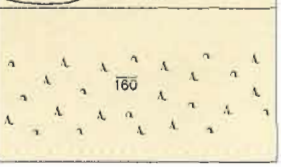
Coastline			Supplementary national symbols: a – e
Foreshore → I, J			
1		Coastline, surveyed	
2		Coastline, unsurveyed	
3		Steep coast. Steep coast with rock cliffs. Cliffs	
4		Coastal hillocks, elevation not determined	
5		Flat coast	
6		Sandy shore	
7		Stony shore, Shingly shore	
8		Sandhills, Dunes	
9		Apparent Shoreline	
9.1		Vegetation or topographic Feature Area Limit in general	

C Natural Features

Relief

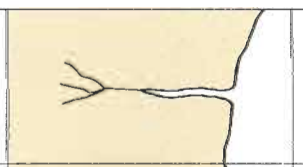
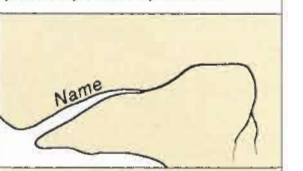
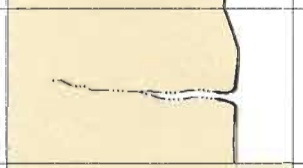
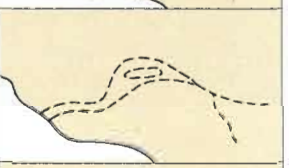
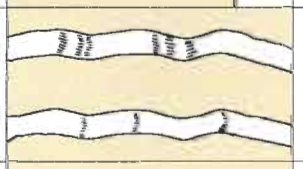
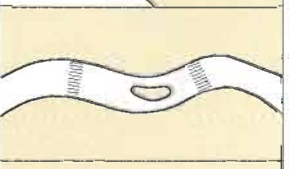
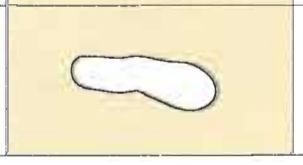
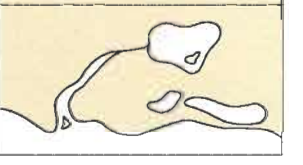
Supplementary national symbols: f, g

Plane of Reference for Heights → H

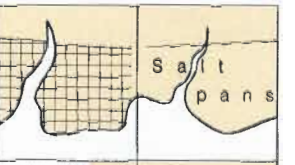
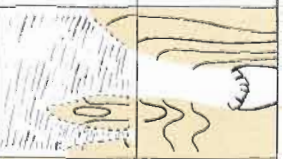
10		Contour lines with spot height	
11	· 256	Spot heights	
12		Approximate contour lines with approximate height	
13		Form lines with spot height	
14		Approximate height of top of trees (above height datum)	

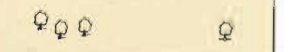
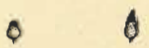
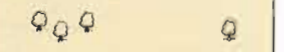
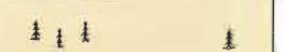
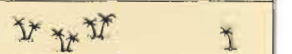
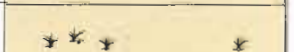
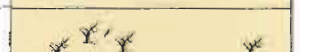
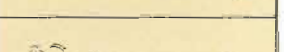
Water Features, Lava

Supplementary national symbols: h

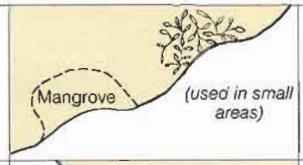
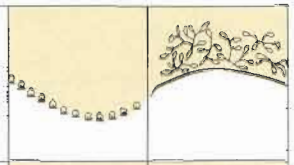
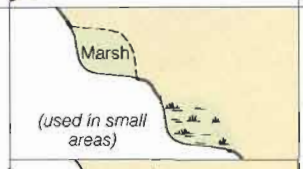
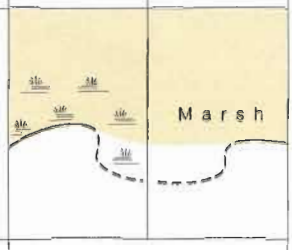
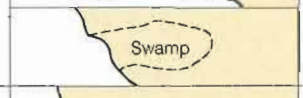
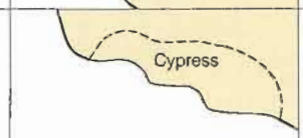
20		River, Stream	
21		Intermittent river	
22		Rapids, Waterfalls	
23		Lakes	

C *Natural Features*

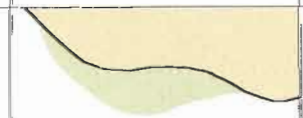
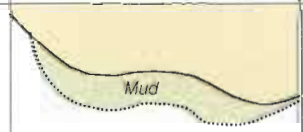
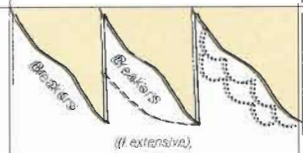
24		*Salt pans*	
25		*Glacier*	
26		*Lava flow*	

Vegetation			*Supplementary national symbols:* i - o
30	Wooded 	***Wood, in general***	 Wooded
31		*Prominent trees (in groups or isolated)*	
31.1		*Deciduous tree*	
31.2		***Evergreen (except conifer)***	
31.3		***Conifer***	
31.4		*Palm*	
31.5		*Nipa palm*	
31.6		*Casuarina*	
31.7		*Filao*	
31.8		*Eucalyptus*	

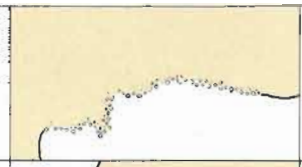
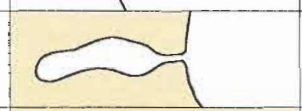
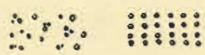
C *Natural Features*

32		*Mangrove*	
33		*Marsh*	
		*Swamp*	
34		*Cypress*	

Supplementary National Symbols

a		*Chart sounding datum line (surveyed)*	
b		*Approximate sounding datum line (inadequately surveyed)*	
c		*Foreshore; Strand (in general)* *Stones; Shingle; Gravel; Mud; Sand*	
d		*Breakers along a shore*	

C *Natural Features*

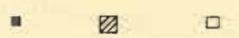
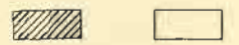
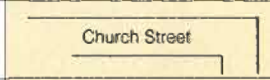
e		*Rubble*	
f		*Hachures*	
g		*Shading*	
h		*Lagoon*	
i	Wooded 	*Deciduous woodland*	
j	Wooded 	*Coniferous woodland*	
k		*Tree plantation*	
l	Cultivated 	*Cultivated fields*	
m	Grass 	*Grass fields*	
n	Rice 	*Paddy (rice) fields*	
o	Bushes 	*Bushes*	

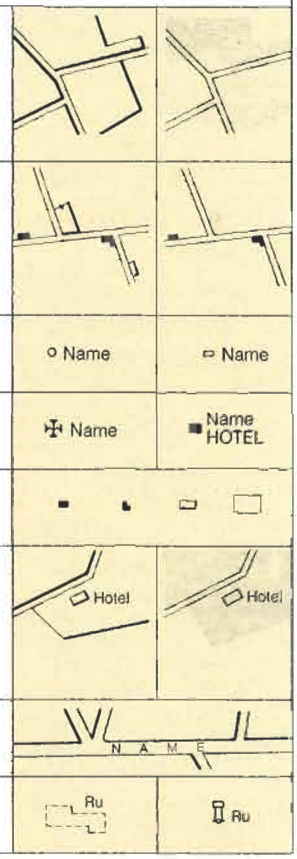
D Cultural Features

Settlements, Buildings

Height of objects → E

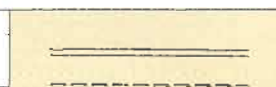
Landmarks → E

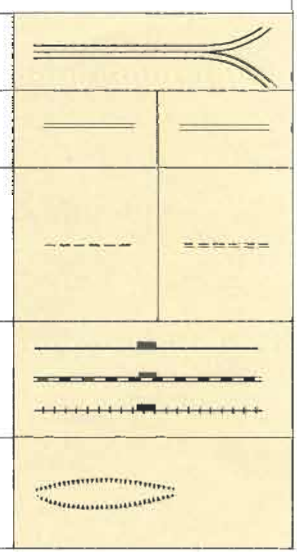
1		*Urban area*
2		*Settlement with scattered buildings*
3		*Settlement (on medium and small-scale charts)*
4		*Village*
5		*Buildings in general*
6		*Important building in built-up area*
7		*Street name, Road name* St Street; Ave Avenue; Blvd Boulevard
8		*Ruins, Ruined landmark*



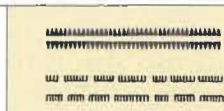
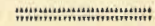
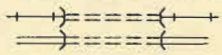
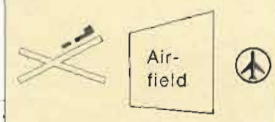
Roads, Railways, Airfields

Supplementary national symbols: a-c

10		*Motorway*
11		*Road (hard surfaced)*
12		*Track, Path (loose or unsurfaced)*
13		*Railway, with station*
14		*Cutting*

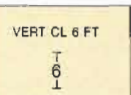
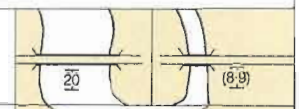
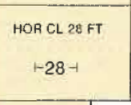
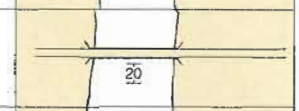
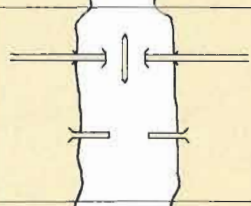
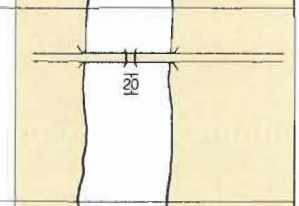
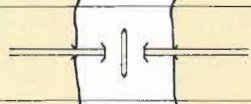
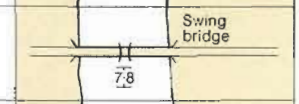
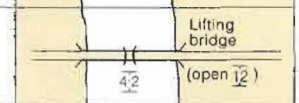
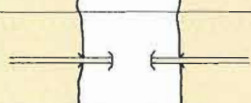
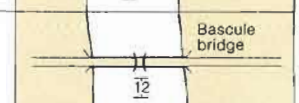
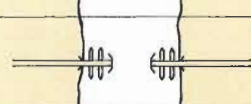
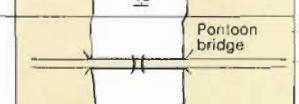
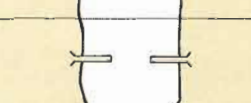
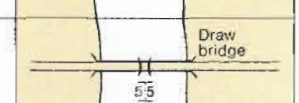
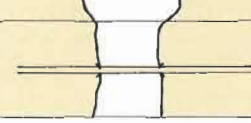
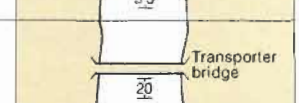
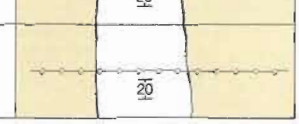


D *Cultural Features*

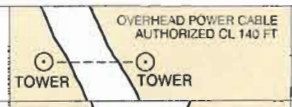
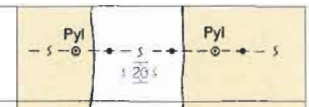
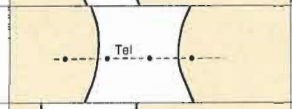
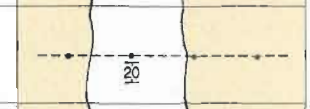
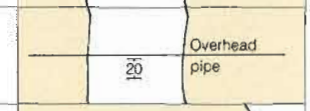
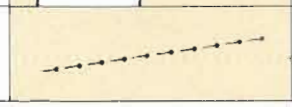
15		*Embankment*	
16		*Tunnel*	
17		*Airport, Airfield*	

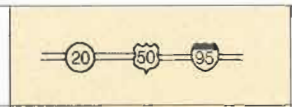
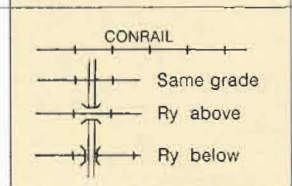
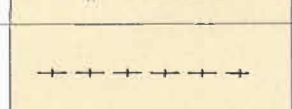
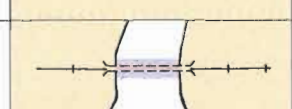
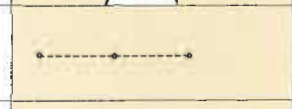
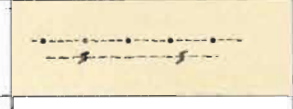
Other Cultural Features

Supplementary national symbols d-h

20		*Vertical clearance above High Water*	
21		*Horizontal clearance*	
22		*Fixed bridge*	
23.1		*Opening bridge (in general)*	
23.2		*Swing bridge*	
23.3		*Lifting bridge*	
23.4		*Bascule bridge*	
23.5		*Pontoon bridge*	
23.6		*Draw bridge*	
24		*Transporter bridge*	
25		*Overhead transporter, Telepheric with vertical clearance*	

D Cultural Features

26		*Power transmission line with pylons and safe overhead clearance*	
27		*Overhead cable, Telephone line, Telegraph line*	
28		*Overhead pipe with vertical clearance*	
29		*Pipeline on land*	

Supplementary National Symbols			
a		*Highway markers*	
b		*Railway* (Ry) *(single or double track)* *Railroad* (RR)	
c		*Abandoned railroad*	
d		*Bridge under construction*	
e		*Footbridge*	
f		*Viaduct*	
g		*Fence*	
h		*Power transmission line*	

E Landmarks

Plane of reference for Heights → H			*Lighthouses → P*		*Beacons → Q*
General					
1	⊙TANK ○ Tk ⊕ ⊘		*Examples of landmarks*	◆ Building ⊙ Hotel	
2	⊙ CAPITOL DOME ⊙ WORLD TRADE CENTER		*Examples of conspicuous landmarks*	◆ FACTORY WATER TR ⊙ HOTEL WATER TOWER	
3.1			*Pictorial symbols (in true position)*		
3.2			*Sketches. Views (out of position)*		
4		(30)	*Height of top of a structure above plane of reference for heights*	(30)	
5		(30)	*Height of structure above ground level*	(30)	
Landmarks					
10.1		✢ Ch	*Church*	✢ Ch	
10.2			*Church tower*	✢ Tr Tr	
10.3	⊙SPIRE ○ Spire		*Church spire*	✢ Sp Sp	
10.4	⊙CUPOLA ○ Cup		*Church cupola*	✢ Cup Cup	
11		✢ Ch	*Chapel*		
12			*Cross. Calvary*		
13			*Temple*		
14			*Pagoda*		
15			*Shinto shrine, Josshouse*		

SETSAIL™

E *Landmarks*

16			*Buddhist temple*		
17			*Mosque. Minaret*		
18			*Marabout*	⊙ Marabout	
19	Cem	Cem	*Cemetery (for all religious denominations)*		
20	⊙ TOWER ○ Tr		*Tower*	Tr	
21	⊙ STANDPIPE ○ S'pipe	⊙ WTR TR ○ Wtr Tr	*Standpipe Water tower. Water tank on a tower*		
22	⊙ CHIMNEY ○ Chy		*Chimney*	Chy	
23	⊙ FLARE ○ Flare		*Flare stack (on land)*		
24	⊙ MONUMENT ○ Mon		*Monument*	Mon	
25.1	⊙ WINDMILL ○ Windmill	⊙ WINDMILL	*Windmill*		
25.2			*Windmill (wingless)*	Ru	
26	⊙ WINDMOTOR ○ Windmotor		*Windmotor*		
27	⊙ F S ○ F S	⊙ F P ○ F P	*Flagstaff. Flagpole*	FS	
28	⊙ R MAST ○ R Mast	⊙ TV MAST ○ TV Mast	*Radio mast. Television mast*		
29	⊙ R TR ○ R Tr	⊙ TV TR ○ TV Tr	*Radio tower. Television tower*		
30.1	⊙ RADAR MAST ○ Radar Mast		*Radar mast*	⊙ Radar Mast	

E Landmarks

30.2	⊙ RADAR TR ○ Radar Tr	*Radar tower*	⊙ Radar Tr	
30.3		*Radar scanner*	⊙ Radar Sc	
30.4	⊙ DOME(RADAR) ○ Dome (Radar) ⊙ RADOME ○ Radome	*Radar dome*	⊙ Radome	
31	⊙ ANT (RADAR) ○ Ant (Radar)	*Dish aerial*		
32	⊙ TANK ○ Tk	*Tanks*	Tanks	
33	⊙ SILO ○ Silo ⊙ ELEVATOR ○ Elevator	*Silo, Elevator*	○ Silo ⊙ Silo	
34.1		*Fortified structure (on large-scale charts)*		
34.2	Cas	*Castle, Fort, Blockhouse (on smaller-scale charts)*		
34.3		*Battery, Small fort (on smaller-scale charts)*		
35.1		*Quarry (on large-scale charts)*		
35.2		*Quarry (on smaller-scale charts)*		
36		*Mine*		

Supplementary National Symbols

a		*Moslem Shrine*		
b		*Tomb*		

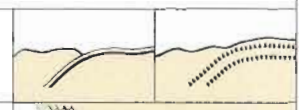
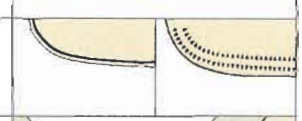
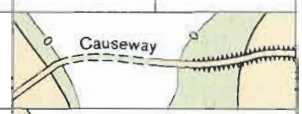
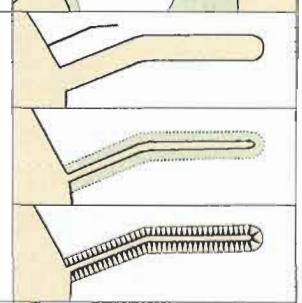
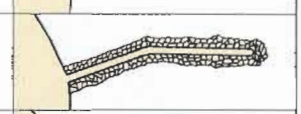
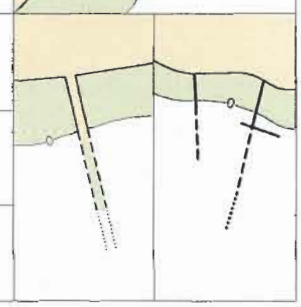
E *Landmarks*

c		*Watermill*		☼
d	 Facty	*Factory*		
e	○ Well	*Well*		
f	■ Sch	*School*		
g	■ Hosp	*Hospital*		
h	■ Univ	*University*		
i	⊙ GAB ○ Gab	*Gable*		
j		*Camping site*		
k	Tel Tel Off	*Telegraph* *Telegraph office*		
l	Magz	*Magazine*		
m	Govt Ho	*Government house*		
n	Inst	*Institute*		
o	Ct Ho	*Courthouse*		
p	Pav	*Pavilion*		
q	T	*Telephone*		
r	Ltd	*Limited*		
s	Apt	*Apartment*		
t	Cap	*Capitol*		
u	Co	*Company*		
v	Corp	*Corporation*		

F Ports

Hydraulic Structures in General

Supplementary national symbols: a – c

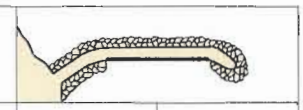
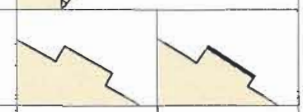
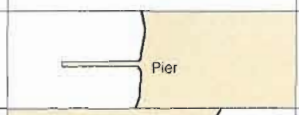
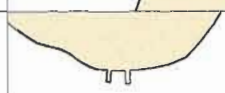
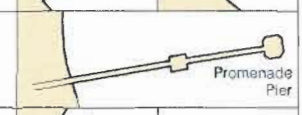
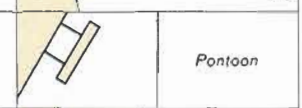
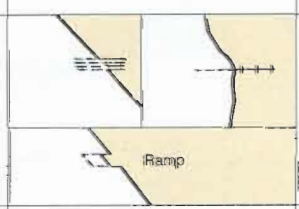
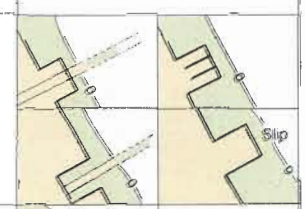
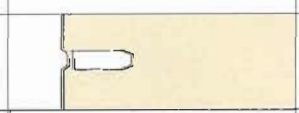
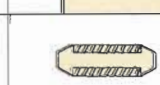
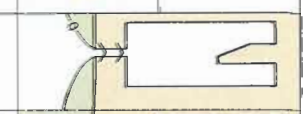
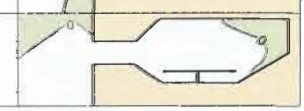
1	Dike, Levee	
2.1	Seawall (on large-scale charts)	
2.2	Seawall (on smaller-scale charts)	
3	Causeway	
4.1	Breakwater (in general)	
4.2	Breakwater (loose boulders, tetrapods, etc.)	
4.3	Breakwater (slope of concrete or masonry)	
5	Training wall (partly submerged at high water)	
6.1	Groin (always dry)	
6.2	Groin (intertidal)	
6.3	Groin (always under water)	

Harbor Installations

Depths → I Anchorages, Limits → N Beacons and other fixed marks → Q Marina → U

10	Fishing harbor	

F Ports

12		*Mole*	
13		*Quay, Wharf*	
14		*Pier, Jetty*	
15		*Promenade pier*	
16		*Pontoon*	
17	Ldg, Lndg	*Landing for boats*	
18		*Steps, Landing stairs*	
19	3 A 3 (A)	*Designation of berth*	(4) (B)
20	• Dol • Dol (Great Lakes)	*Dolphin*	Dn.
21		*Deviation dolphin*	
22	• Pile • Pile (Great Lakes)	*Minor post or pile*	
23		*Slipway, Patent slip, Ramp*	
24		*Gridiron, Scrubbing grid*	
25		*Dry dock, Graving dock*	
26		*Floating dock*	
27		*Non-tidal basin, Wet dock*	
28		*Tidal basin, Tidal harbor*	

F Ports

30		*Works on land, with year date*	Dock under construction (1996)
31	Under construction (1997)	*Works at sea, Area under reclamation, with year date*	Area under reclamation (1996)
32	Under constr (1997)	*Works under construction, with year date*	Under construction (1996) Works in progress (1996)
33.1	Ruins	*Ruins*	Ru
33.2	Pier	*Ruined pier, partly submerged at high water. Submerged ruins*	Pier (Ru)
34	Hk	*Hulk (actual shape on large scale charts)*	*Hulk*

Canals, Barrages

Clearances → D			*Signal Stations* → T
40	Canal Ditch	*Canal*	km 32 km 46
41.1	Lock 6 10 6 8 SPIRE	*Lock (on large-scale charts)*	Lock
41.2	Canal Lock Ditch Sluice (Tidegate, Floodgate)	*Lock (on smaller-scale charts)*	
42		*Caisson*	
43		*Flood barrage*	Flood barrage
44		*Dam*	Dam

F Ports

Transhipment Facilities				Supplementary national symbol d
	Roads → D		Railways → D	Tanks → E
50		RoRo	Roll-on, Roll-off Ferry (Ro Ro Terminal)	RoRo
51			Transit shed, Warehouse (with designation)	2 3 / 2 3
52			Timber yard	#
53.1		(4t)	Crane with lifting capacity, crane on railway	(31)
53.2		(14t)	Container crane with lifting capacity	(50 t)
53.3			Sheerlegs (conspicuous)	SHEERLEGS

Public Buildings			Supplementary national abbreviation e
60	Hbr Mr	Harbormaster's office	
61	■ Cus Ho	Customhouse	
62.1	Health Office	Health officer's office	
62.2	■ Hosp	Hospital	Hospital
63	■ PO	Post office	

Supplementary National Symbols			
a		Jetty (partly below MHW)	
b		Submerged Jetty	
c		Jetty (small scale)	
d	(P)	Pump-out facilities	
e	Quar	Quarantine	

G Topographic Terms

Coast

1	*Island*	8	*Head, Headland*
2	*Islet*	9	*Point*
3	*Cay*	10	*Spit*
4	*Peninsula*	11	*Rock*
5	*Archipelago*	12	*Salt marsh, Saltings*
6	*Atoll*	13	*Lagoon*
7	*Cape*		

Natural Inland-Features

20	*Promontory*	30	*Plateau*
21	*Range*	31	*Valley*
22	*Ridge*	32	*Ravine, Cut*
23	*Mountain, Mount*	33	*Gorge*
24	*Summit*	34	*Vegetation*
25	*Peak*	35	*Grassland*
26	*Volcano*	36	*Paddy field*
27	*Hill*	37	*Bushes*
28	*Boulder*	38	*Deciduous woodland*
29	*Table-land*	39	*Coniferous woodland*

Settlements

50	*City, Town*	53	*Farm*
51	*Village*	54	*Saint*
52	*Fishing village*		

Buildings

60	*Structure*	62	*Hut*
61	*House*		

G Topographic Terms

63	*Multi-story building*	82	*Cement works*
64	*Castle*	83	*Water mill*
65	*Pyramid*	84	*Greenhouse*
66	*Column*	85	*Warehouse, Storehouse*
67	*Mast*	86	*Cold store, Refrigerating storage house*
68	*Lattice tower*	87	*Refinery*
69	*Mooring mast*	88	*Power station*
70	*Floodlight*	89	*Electric works*
71	*Town hall*	90	*Gas works*
72	*Office*	91	*Water works*
73	*Observatory*	92	*Sewage works*
74	*Institute*	93	*Machine house, Pump house*
75	*Cathedral*	94	*Well*
76	*Monastery, Convent*	95	*Telegraph office*
77	*Lookout station, Watch tower*	96	*Hotel*
78	*Navigation school*	97	*Sailors' home*
79	*Naval college*	98	*Spa hotel*
80	*Factory*		
81	*Brick kiln, Brick works*		

Road, Rail and Air Traffic

110	*Street, Road*	116	*Runway*
111	*Avenue*	117	*Landing lights*
112	*Tramway*	118	*Helicopter landing site*
113	*Viaduct*		
114	*Suspension bridge*		
115	*Footbridge*		

Ports, Harbors

130	*Tidal barrier*	132	*Loading canal*
131	*Boat lift, Ship lift, Hoist*	133	*Sluice*

G Topographic Terms

134	*Basin*
135	*Reservoir*
136	*Reclamation area*
137	*Port*
138	*Harbor*
139	*Haven*
140	*Inner harbor*
141	*Outer harbor*
142	*Deep water harbor*
143	*Free port*
144	*Customs harbor*
145	*Naval port*
146	*Industrial harbor*
147	*Commercial port, Trade port*
148	*Building harbor*
149	*Oil harbor*
150	*Ore harbor*
151	*Grain harbor*
152	*Container harbor*
153	*Timber harbor*
154	*Coal harbor*
155	*Ferry harbor*
156	*Police*

Harbor Installations

170	*Terminal*
171	*Building slip*
172	*Building yard*
173	*Buoy yard, Buoy dump*
174	*Bunker station*
175	*Reception facilities for oily wastes*
176	*Tanker cleaning facilities*
177	*Cooling water intake/outfall*
178	*Floating barrier Boom*
179	*Piling*
180	*Row of piles*
181	*Bollard*
182	*Conveyor*
183	*Storage tanker*
184	*Lighter Aboard Ship - LASH*
185	*Liquified Natural Gas LNG*
186	*Liquified Petroleum Gas LPG*
187	*Very Large Crude Carrier VLCC*

H *Tides, Currents*

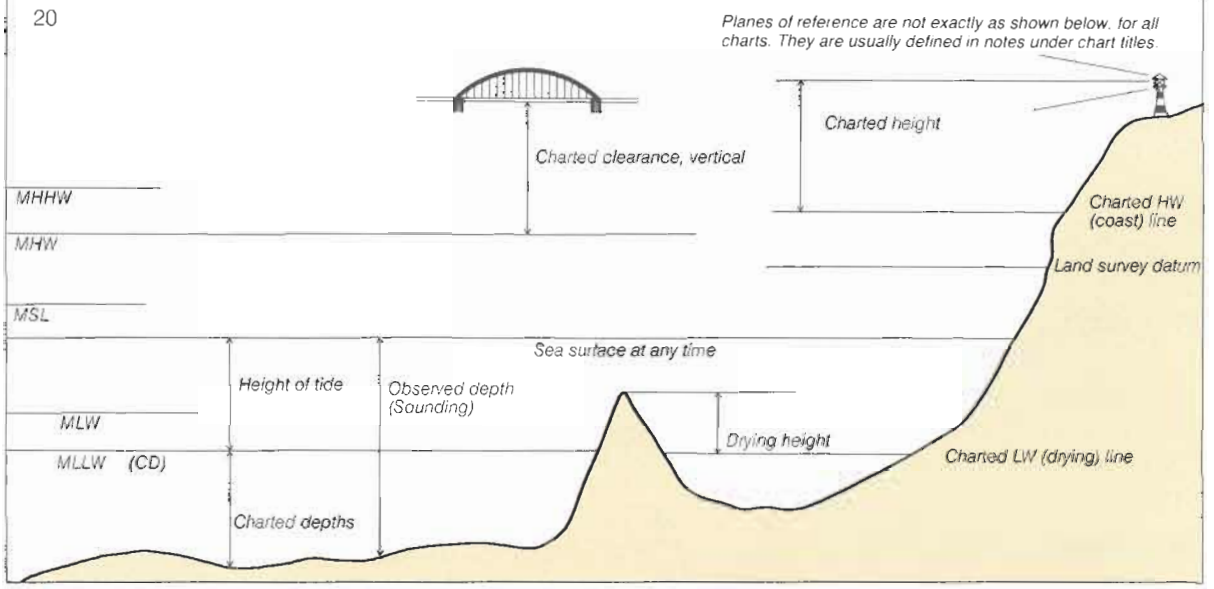
Terms Relating to Tidal Levels			*Supplementary national symbols:* a-k
1		*Chart Datum, Datum for sounding reduction*	CD
2		*Lowest Astronomical Tide*	LAT
3		*Highest Astronomical Tide*	HAT
4	MLW	*Mean Low Water*	MLW
5	MHW	*Mean High Water*	MHW
6	MSL	*Mean Sea Level*	MSL
7		*Land survey datum*	
8	MLWS	*Mean Low Water Springs*	MLWS
9	MHWS	*Mean High Water Springs*	MHWS
10	MLWN	*Mean Low Water Neaps*	MLWN
11	MHWN	*Mean High Water Neaps*	MHWN
12	MLLW	*Mean Lower Low Water*	MLLW
13	MHHW	*Mean Higher High Water*	MHHW
14		*Mean Higher Low Water*	MHLW
15		*Mean Lower High Water*	MLHW
16	Sp	*Spring tide*	Sp
17	Np	*Neap tide*	Np

H *Tides, Currents*

Tidal Levels and charted Data

Tide gauge → T

20



Tide Tables

30

Tidal Levels referred to Datum of Soundings

Place	Lat N/S	Long E/W	Heights in meters above datum			
			MHWS	MHWN	MLWN	MLWS
			MHHW	MLHW	MHLW	MLLW

Tabular statement of semi-diurnal or diurnal tides

Note:
The order of the columns of levels will be the same as that used in national tables of tidal predictions.

31

Tidal streams referred to . .

Hours	Geographical Position	
Before High Water 6 5 4 3 2 1	Directions of streams (degrees)	Rates at spring tides (knots) / Rates at neap tides (knots)
High Water		
After High Water 1 2 3 4 5 6		

Tidal stream table

Tidal streams referred to . .

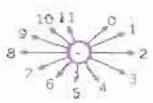
Hours	Geographical Position	
Before High Water 6 5 4 3 2 1	Directions of streams (degrees)	Rates at spring tides (knots) / Rates at neap tides (knots)
High Water		
After High Water 1 2 3 4 5 6		

H *Tides, Currents*

Tidal Streams and Currents			*Supplementary national symbols:* m-t
Breakers → K			*Tide Gauge* → T
40	2 kn	*Flood stream (current) with rate*	2.5 kn
41	2 kn	*Ebb stream (current) with rate*	2.5 kn
42		*Current in restricted waters*	
43		*Ocean current with rates and seasons*	2.5-4.5 kn Jan–Mar (see Note)
44	Tide rips Symbol used only in small areas	*Overfalls, tide rips, races*	
45	Eddies Symbol used only in small areas	*Eddies*	
46	A B	*Position of tabulated tidal data with designation*	A

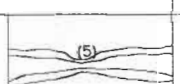
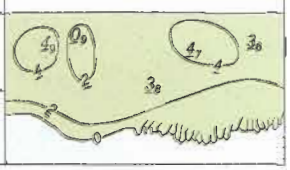
Supplementary National Symbols			
a	*HW*	*High water*	
b	*HHW*	*Higher high water*	
c	*LW*	*Low water*	
d	*LWD*	*Low-water datum*	
e	*LLW*	*Lower low water*	
f	*MTL*	*Mean tide level*	
g	*ISLW*	*Indian spring low water*	
h	*HWF&C*	*High-water full and change (vulgar establishment of the port)*	
ii	*LWF&C*	*Low-water full and change*	

H Tides, Currents

j	*CRD*	*Columbia River Datum*	
k	*GCLWD*	*Gulf Coast Low Water Datum*	
l	*Str*	*Stream*	
m		*Current, general, with rate*	
n	*vel*	*Velocity; Rate*	
o	*kn*	*Knots*	
p	*ht*	*Height*	
q	*fl*	*Flood*	
r		*New moon*	
s		*Full moon*	
t		*Current diagram*	

Depths

General			
1	ED	Existence doubtful	ED
2	SD	Sounding doubtful	SD
3.1	Rep	Reported, but not surveyed	Rep
3.2	(3) Rep (1983)	Reported with year of report, but not surveyed	Rep (1973)
4	(3) Rep	Reported but not confirmed sounding or danger	(184) (212)

Soundings			Supplementary national symbols: a - c
Plane of Reference for Depths → H			Plane of Reference for Heights → H
10	19 8_2 $6\frac{3}{4}$ 8_2 19	19 8_2 $6\frac{3}{4}$	Sounding in true position (NOS uses upright soundings on English unit charts and sloping soundings on Metric charts).	12 9_7
11	(23) 1036		Sounding out of position	+(12) 3375
12			Least depth in narrow channel	
13	$\overline{65}$		No bottom found at depth shown	$\overline{200}$
14	8_2 19 8_2 19	8_2 19	Soundings which are unreliable or taken from a smaller-scale source (NOS uses sloping soundings on English unit charts and upright soundings on Metric charts).	12 9_7
15			Drying heights above chart datum	

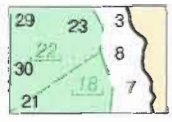
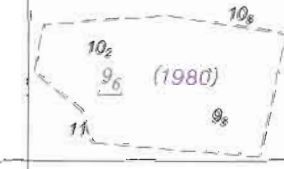
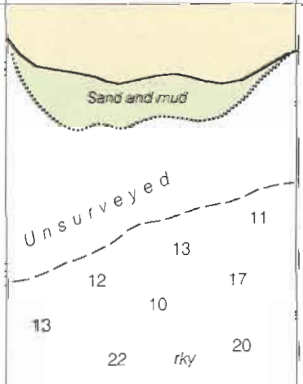
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Depths

Depths in Fairways and Areas

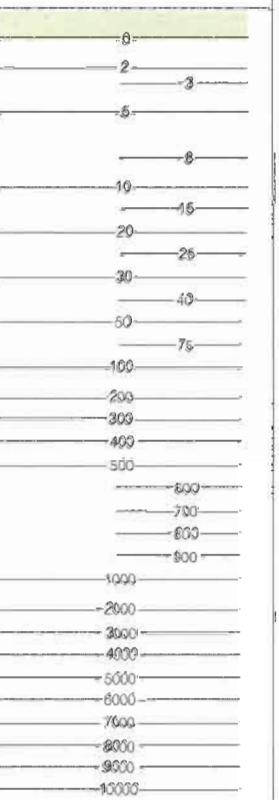
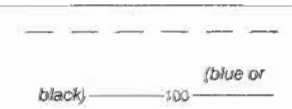
Supplementary national symbols: a, b

Plane of Reference for Depths → H

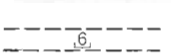
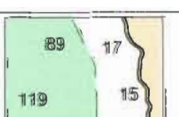
20		Limit of dredged area	
21	7.0 m	Dredged channel or area with depth of dredging in meters	7.0 m / 7.0 meters
22	24 FEET OCT 1983 / 30 FEET APR 1984	Dredged channel or area with depth and year of the latest control survey	Dredged to 7.2m (1978) / 7.2m (1978)
23	Maintained depth 7.2m	Dredged channel or area with maintained depth	Maintained depth 7.2m / 7.2m
24		Depth at chart datum, to which an area has been swept by wire drag. The latest date of sweeping may be shown in parentheses	
25		Unsurveyed or inadequately surveyed area; area with inadequate depth information	Inadequately Surveyed (see Note) / Inadequately Surveyed (see Note)

Depths

Depth Contours

	Feet	Fm/Meters			
30	0	0		Low water line One or two lighter blue tints may be used instead of the 'ribbons' of tint at 10 or 20 m	
	6	1			
	12	2			
	18	3			
	24	4			
	30	5			
	36	6			
	60	10			
	120	20			
	180	30			
	240	40			
	300	50			
	600	100			
	1,200	200			
	1,800	300			
	2,400	400			
	3,000	500			
	6,000	1,000			
31	Approximate depth contour Continuous lines, with values			Approximate depth contours	
	Note:	The extent of the blue tint varies with the scale and purpose of the chart, or its sources. On some charts, contours and figures are printed in blue.			

Supplementary National Symbols

a		Swept channel	
b		Swept area, not adequately sounded (shown by purple or green tint)	
c		Stream	

J Nature of the Seabed

Types of Seabed

Rocks → K

Supplementary national abbreviations: a–ag

1	S	Sand	S
2	M	Mud	M
3	Cy; Cl	Clay	Cy
4	Si	Silt	Si
5	St	Stones	St
6	G	Gravel	G
7	P	Pebbles	P
8	Cb	Cobbles	Cb
9	Rk; rky	Rock; Rocky	R
10	Co	Coral and Coralline algae	Co
11	Sh	Shells	Sh
12	S/M	Two layers, eg. Sand over mud	S/M
13.1	Wd	Weed (including Kelp)	Wd
13.2	Kelp	Kelp, Seaweed	
14	Sandwaves	Mobile bottom (sand waves)	
15	Spring	Freshwater springs in seabed	

Types of Seabed, Intertidal Areas

20	Gravel	Area with stones, gravel or shingle	G St
21	Rock	Rocky area, which covers and uncovers	
22	Coral	Coral reef, which covers and uncovers	

J Nature of the Seabed

Qualifying Terms				Supplementary national abbreviations: ah - bf
30	f; fne	fine		f
31	m	medium	only used in relation to sand	m
32	c; crs	coarse		c
33	bk; brk	broken		bk
34	sy; stk	sticky		sy
35	so; sft	soft		so
36	stf	stiff		sf
37	Vol	volcanic		v
38	Ca	calcareous		ca
39	h; hrd	hard		h

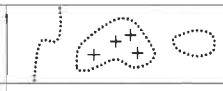
Supplementary National Abbreviations				
a	Grd		Ground	
b	Oz		Ooze	
c	Ml		Marl	
d	Sn		Shingle	
e	Blds		Boulders	
f	Ck		Chalk	
g	Qz		Quartz	
h	Sch		Schist	
i	Co Hd		Coral head	
j	Mds		Madrepores	
k	Vol Ash		Volcanic ash	
l	La		Lava	
m	Pm		Pumice	
n	T		Tufa	
o	Sc		Scoriae	
p	Cn		Cinders	
q	Mn		Manganese	
r	Oys		Oysters	
s	Ms		Mussels	
t	Spg		Sponge	
u	K		Kelp	
v	Grs		Grass	
W	Stg		Sea-tangle	
x	Spl		Spicules	
y	Fr		Foraminifera	
z	Gl		Globigerina	
aa	Di		Diatoms	

J Nature of the Seabed

ab	Rd		Radiolaria	
ac	Pt		Pteropods	
ad	Po		Polyzoa	
ae	Cir		Cirripedia	
af	Fu		Fucus	
ag	Ma		Mattes	
ah	sml		Small	
ai	lrg		Large	
aj	rt		Rotten	
ak	str		Streaky	
al	spk		Speckled	
am	gty		Gritty	
an	dec		Decayed	
ao	fly		Flinty	
ap	glac		Glacial	
aq	ten		Tenacious	
ar	wh		White	
as	bl; bk		Black	
at	vi		Violet	
au	bu		Blue	
av	gn		Green	
aw	yl		Yellow	
ax	or		Orange	
ay	rd		Red	
az	br		Brown	
ba	ch		Chocolate	
bb	gy		Gray	
bc	lt		Light	
bd	dk		Dark	
be	vard		Varied	
bf	unev		Uneven	

K Rocks, Wrecks, Obstructions

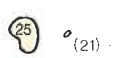
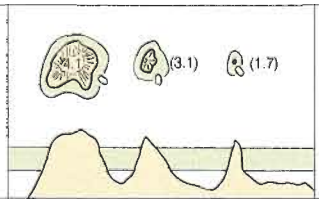
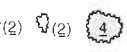
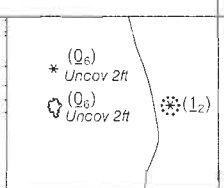
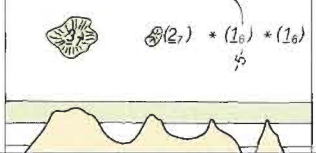
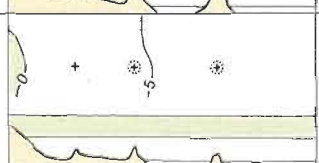
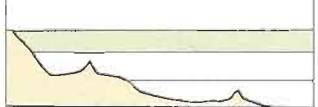
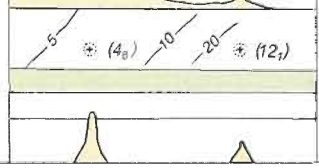
General

1			Danger line, in general	
2			Swept by wire drag or diver	

Rocks

Plane of Reference for Heights → H

Plane of Reference for Depths → H

10			Rock (islet) which does not cover, height above height datum		
11			Rock which covers and uncovers, height above chart datum		
12			Rock awash at the level of chart datum		
13			Dangerous underwater rock of uncertain depth		
14		27 Rk	Dangerous underwater rock of known depth		
14.1	12 Rk	27 R	in the corresponding depth area		
14.2	5 Rk	4₂ Rk 4₂ R	outside the corresponding depth area		

SETSAIL™

K Rocks, Wrecks, Obstructions

15	+ 35 Rk	35 Rk 35 R	Non-dangerous rock, depth known	21 R	35 R 35 R + (35)
16	+ Co + 3 + + Reef line		Coral reef which covers	+ Co + + Co + +	
17	Breakers	Br	Breakers	19 5 Br 18	

Wrecks

Plane of Reference for Depths → H

20	Hk		Wreck, hull always dry, on large-scale charts	Wk	
21	Hk		Wreck, covers and uncovers, on large-scale charts	Wk	Wk Wk Wk Wk
22			Submerged wreck, depth known, on large-scale charts	5 Wk	9 Wk
23		Hk	Submerged wreck, depth unknown, on large-scale charts	Wk	Wk Wk Wk
24			Wreck showing any portion of hull or superstructure at level of chart datum		Wk Wk Wk
25	Masts Mast (10 ft) Funnel	Masts	Wreck showing mast or masts above chart datum only	Mast	
26	5 Wk	5 Wk	Wreck, least depth known by sounding only	4 Wk 25 Wk	(9)
27	21 Wk 5 Wk	4 Wk	Wreck, least depth known, swept by wire drag or diver	4 Wk 25 Wk	21 Rk
28			Dangerous wreck, depth unknown		
29			Sunken wreck, not dangerous to surface navigation		
30	8 Wk	25 Wk	Wreck, least depth unknown, but considered to have a safe clearance to the depth shown	25 Wk	15

SETSAIL™

K *Rocks, Wrecks, Obstructions*

31		Foul # Foul	Foul ground, non-dangerous to navigation but to be avoided by vessels anchoring, trawling etc.	# Foul # / PB
32	Foul Wks Wreckage		Foul area, Foul with rocks or wreckage, dangerous to navigation.	

Obstructions

Plane of Reference for Depths → H — *Kelp, Sea-Weed* → J

40	Obstn	Obstn	Obstruction, depth unknown	Obstn Obstn	#
41	$5\frac{1}{2}$ Obstn	5_2 Obstn	Obstruction, least depth known	4_6 Obstn 16_8 Obstn	
42	21 Obstn 5 Obstn	4_6 Obstn	Obstruction, least depth known, swept by wire drag or diver	4_6 Obstn 16_8 Obstn	
43.1	Subm piles; Stakes, Perches	Obstn	Stumps of posts or piles, all or part of the time submerged	Obstn	Subm piles
43.2	Snags; Stumps; Deadhead		Submerged pile, stake, snag, well, deadhead or stump (with exact position)		
44.1	Fsh stks		Fishing stakes		
44.2			Fish trap, fish weirs, tunny nets		
45		Fish traps; Tunny nets	Fish trap area, tunny nets area	Fish traps; Tunny nets	
46.1	Obstruction (fish haven) (actual shape)	Obstn (fish haven)	Fish haven (artificial fishing reef)		
46.2	Obstn Fish haven (Au'tn min 42ft)		Fish haven with minimum depth	(2₄) 2₄	
47	Oys		Shellfish cultivation (stakes visible)	Shellfish Beds (see Note)	

K Rocks, Wrecks, Obstructions

Supplementary National Symbols					
a	*		Rock awash (height unknown)		
b	5 Rk	5 Rks	Shoal sounding on isolated rock or rocks		9 R 2 r 2 P (8)
c			Sunken wreck covered 20 to 30 meters		
d	Sub vol		Submarine volcano		
e	Discol water		Discolored water		
f	21 Rk	3 3	Sunken danger with depth cleared (swept) by wire drag		Obstn 21 5
g	Reef		Reef of unknown extent		
h	Co	Coral Co Co Co	Coral reef, detached (uncovers at sounding datum)		
i	Subm Crib	Crib	Submerged Crib		
j	Crib	Duck Blind	Crib, Duck Blind (above water)		
k	Duck Blind		Submerged Duck Blind		
l	Platform		Submerged Platform		

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L Offshore Installations

Offshore Installations

General

Areas, Limits → N

1		DURRAH OILFIELD	*Name of oilfield or gasfield*	*Oil field*	
2	■ "Hazel"	"Hazel"	*Platform with designation/name*	Z-44	
3			*Limit of safety zone around offshore installation*		
4			*Limit of development area*		

Platforms and Moorings

Mooring Buoys → Q

10	■ "Exxon MP–236"		*Production platform, Platform, Oil derrick*		
11			*Flare stack (at sea)*	Fla	
12		SPM	*Mooring tower, Articulated Loading Platform (ALP), Single Anchor Leg Mooring (SALM)*	SPM	
13	■ "Hazel"	"Tuna"	*Observation/research platform (with name)*		
14			*Disused platform*		
15	Artificial Island (Mukluk)		*Artificial island*		
16			*Oil or Gas installation buoy, Catenary Anchor Leg Mooring (CALM), Single Buoy Mooring (SBM)*		
17		 *Tanker*	*Moored storage tanker*		

L Offshore Installations

Underwater Installations

Supplementary national symbols: a

Plane of Reference for Depths → H

Obstructions → K

20	Well (cov 21ft) Well (cov 83ft)	Well	Submerged production well	Prod. Well	
21.1	Pipe	Well	Suspended well, depth over wellhead unknown	Well	
21.2	Pipe (cov 24ft) Pipe (cov 92ft)	15 Well	Suspended well, with depth over wellhead	15 Well	
21.3			Wellhead with height above the bottom	Well (5.7)	
22			Site of cleared platform		
23	Pipe		Above water wellheads	Pipe	

Submarine Cables

30.1		Submarine cable		
30.2	Cable Area	Submarine cable area		
31.1		Submarine power cable		
31.2		Submarine power cable area		
32		Disused submarine cable		

L Offshore Installations

Submarine Pipelines

40.1		Oil, Gas pipeline	Oil (see note) Gas (see note)	
40.2	Pipeline Area	Oil, Gas pipeline areas	Oil (see note) Gas (see note)	
41.1	Water Sewer Outfall Intake	Waterpipe, sewer, outfall pipe, intake pipe	Water Sewer Outfall Intake	
41.2	Pipeline Area	Discharge pipeline areas	Water Sewer Outfall Intake	
42		Buried pipeline pipe (with nominal depth to which buried)	Buried 1.4m	
43	PWI Depth over Crib 17ft	Potable Water intake, diffuser, or crib	3 Obstn	
44		Disused pipeline/pipe		

Supplementary National Symbol

a	Well Well	Well	Submerged well (buoyed)		

M Tracks, Routes

Tracks

Tracks Marked by Lights → P Leading Beacons → Q Supplementary national symbols: a – c

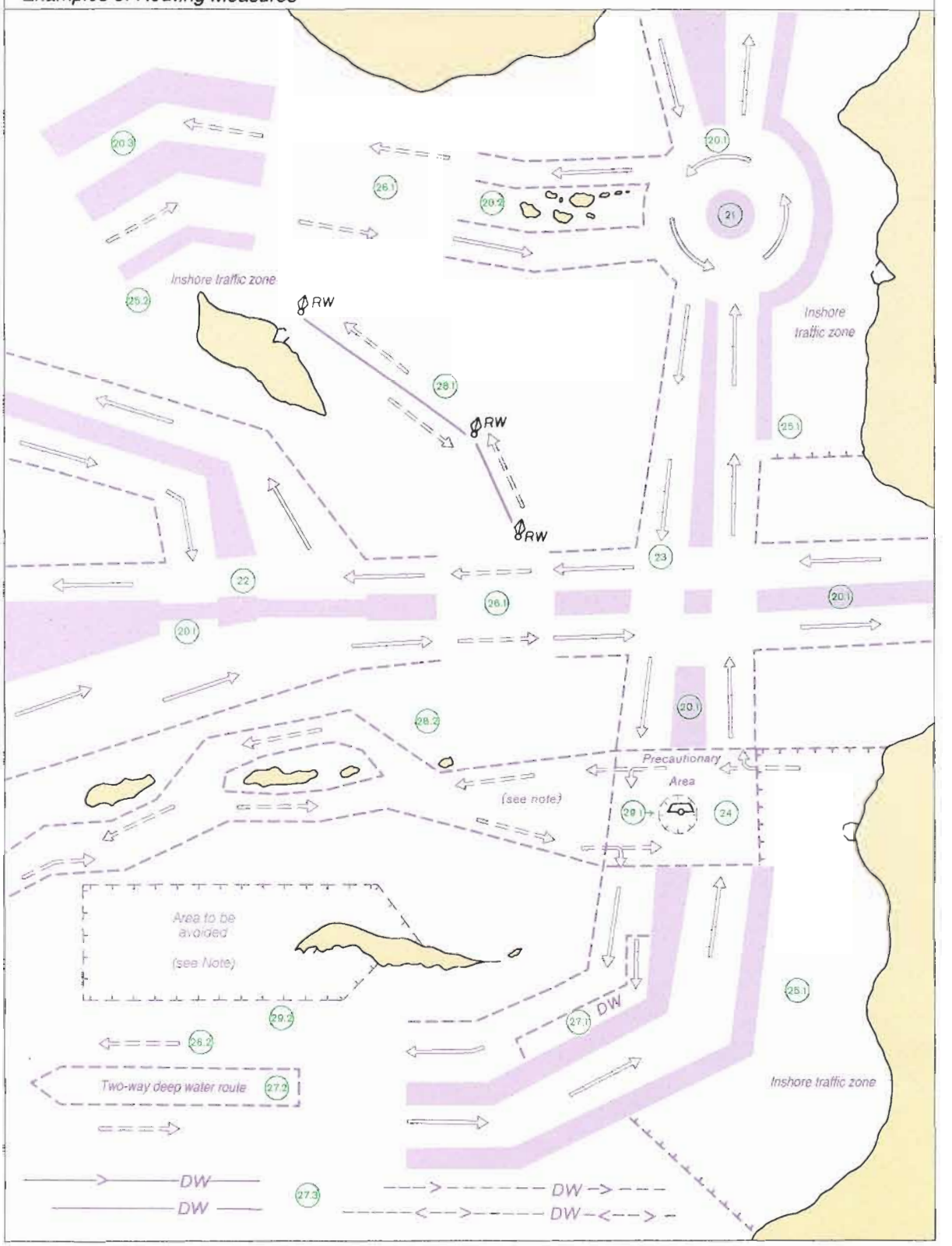
1		Lights in line 090°	Leading line (solid line is fairway)	2 Bns ≠ 270.5° 2 Bns ≠ 270°30'	
2		Beacons in line 090°	Transit, clearing line	2 Bns ≠ 270°30' 2 Bns ≠ 270.5°	
3		Lights in line 090°	Recommended track based on a system of fixed marks	2 Bns ≠ 090.5° – 270.5°	
4			Recommended tracks not based on a system of fixed marks	090.5° – 270.5°	
5.1			One-way track		
5.2			Two-way track (including a regulation described in a note)	SEE NOTE SEE NOTE	
6		7m 7₃ m	Track, recommended track with maximum authorized draft stated	7.0m 7.3m	

Routing Measures

Basic Symbols Supplementary national symbols: d – e

10		Established (mandatory) direction of traffic flow	
11		Recommended direction of traffic flow	
12		Separation line	
13		Separation zone	
14	RESTRICTED AREA	Limit of restricted area	
15		Maritime limit in general	
16	PRECAUTIONARY AREA	Precautionary area	Precautionary Area

Examples of Routing Measures



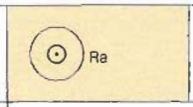
M Tracks, Routes

Examples of Routing Measures

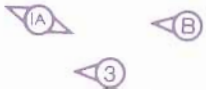
20.1	Traffic separation scheme, traffic separated by separation zone
20.2	Traffic separation scheme, traffic separated by natural obstructions
20.3	Traffic separation scheme, with outer separation zone, separating traffic using scheme from traffic not using it
21	Traffic separation scheme, roundabout
22	Traffic separation scheme, with "crossing gates"
23	Traffic separation schemes crossing, without designated precautionary area
24	Precautionary area
25.1	Inshore traffic zone, with defined end-limits
25.2	Inshore traffic zone without defined end-limits
26.1	Recommended direction of traffic flow, between Traffic separation schemes
26.2	Recommended direction of traffic flow, for ships not needing a deep water route
27.1	Deep water route, as part of one-way traffic lane
27.2	Two-way deep water route, with minimum depth stated
27.3	Deep water route centerline as recommended One-way or Two-way track
28.1	Recommended route (often marked by centerline buoys)
28.2	Two-way route with one-way sections
29.1	Area to be avoided, around navigational aid
29.2	Area to be avoided, because of danger of stranding

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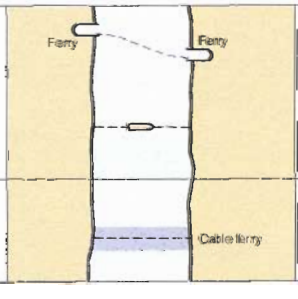
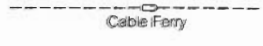
Radar Surveillance Systems

30			*Radar Surveillance Station*	Radar Surveillance Station
31			*Radar range*	
32.1			*Radar reference line*	Ra 
32.2			*Radar reference line coinciding with a leading line*	Ra 270°-090°

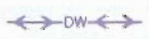
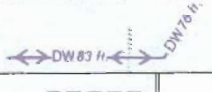
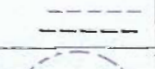
Radio Reporting Points

40		*Radio reporting (calling-in or way) points showing direction(s) of vessel movement with designation (if any)*	

Ferries

50		*Ferry*	
51		*Cable Ferry*	

Supplementary National Symbols

a		*Recommended track for deep draft vessels (track not defined by fixed marks)*	
b		*Depth is shown where it has been obtained by the cognizant authority*	
c		*Alternate course*	
d		*Established traffic separation scheme: Roundabout*	
e		*If no separation zone exists, the center of the roundabout is shown by a circle*	

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N Areas, Limits

Dredged and Swept Areas → I	*Submarine Cables, Submarine Pipelines* → L	*Tracks, Routes* → M

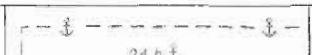
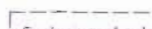
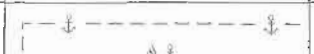
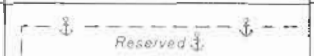
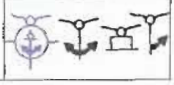
General

1.1		*Maritime limit in general usually implying: Permanent obstructions*	
1.2		*Maritime limit in general usually implying: No permanent obstructions*	
2.1	Restricted Area	*Limit of restricted area*	
2.2	PROHIBITED AREA PROHIB AREA	*(Screen optional)* *Limit of prohibited area (no unauthorized entry)*	Entry Prohibited

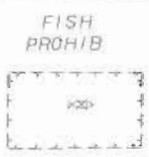
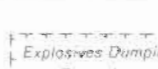
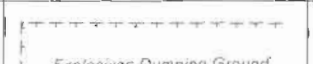
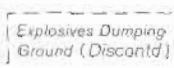
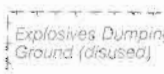
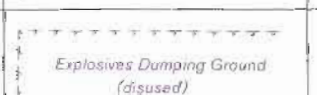
Anchorages, Anchorage Areas

10			*Anchorage (large vessels)*		
			Anchorage (small vessels)		
11.1	14		*Anchor berths*	A N 53 14	6 Not
11.2	3	D17	*Anchor berths, swinging circle may be shown*	A N 53 14	
12.1		Anchorage	*Anchorage area in general*		
12.2		Anchorage No 1	*Numbered anchorage area*	No 1	
12.3		Neufeld Anchorage	*Named anchorage area*	Neufeld	
12.4		DW Anchprage	*Deep Water Anchorage area, Anchorage area for Deep Draft Vessels*	DW	
12.5		Tanker Anchorage	*Tanker anchorage area*	Tanker	

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12.6		Anchorage for periods up to 24 hours		
12.7		Explosives anchorage area		
12.8		Quarantine anchorage area		
12.9		Reserved anchorage		
Note: Anchors as part of the limit symbol are not shown for small areas. Other types of anchorage areas may be shown.				
13		Sea-plane landing area		
14		Anchorage for sea-planes		

Restricted Areas

20			Anchoring prohibited	 
21			Fishing prohibited	
22			Limit of nature reserve: Nature reserve, Bird sanctuary, Game preserve, Seal sanctuary	
23.1			Explosives dumping ground	
23.2			Explosives dumping ground (disused) Foul (explosives)	

N Areas, Limits

24	Dump Site	Dumping Ground	Dumping ground for chemical waste	Dumping Ground for Chemical waste	
25	Degaussing Range	Degaussing Range	Degaussing range	Degaussing range	
26		Historic Wreck (see note)	Historic wreck and restricted area	Historic Wk	

Military Practice Areas

30			Firing danger area		
31	PROHIBITED AREA	Prohibited Area	Military area, entry prohibited	Entry Prohibited	
32			Mine-laying practice area		
33			Submarine transit lane and exercise area		
34			Mine field	Minefield (see Caution)	

International Boundaries and National Limits

Supplementary national symbols: a, b

40			International boundary on land	DENMARK / FEDERAL REPUBLIC OF GERMANY	
41	CANADA / UNITED STATES		International maritime boundary	DENMARK / FEDERAL REPUBLIC OF GERMANY	
42			Straight territorial sea baseline		
43			Seaward limit of territorial sea		
44			Seaward limit of contiguous zone		

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N Areas, Limits

45		Limits of fishery zones		
46		Limit of continental shelf		
47		Limit of Exclusive Economic Zone	EEZ	
48		Customs limit		
49	Harbor Limit	Harbor limit	Harbour limit	

Various Limits				Supplementary national symbols: c-g
60.1		Limit of fast ice, Ice front		
60.2		Limit of sea ice (pack ice)-seasonal		
61	Log boom	Log pond	Log Pond	
62.1	Spoil Area	Spoil ground	Spoil Ground	
62.2	Spoil Area Discontinued	Spoil ground (disused)	Spoil Ground (disused)	
63		Dredging area	Dredging Area (see Note)	
64		Cargo transhipment area	Cargo Transhipment Area	
65		Incineration area	Incineration Area	

Supplementary National Symbols				
a			COLREGS demarcation line	
b			Limit of fishing areas (fish trap areas)	
c	Dumping Ground		Dumping ground	

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d	Disposal Area 92 depths from survey of JUNE 1972 85	Disposal area (Dump Site)	
e	----------	Limit of airport	
f	——— · ——— ——— – ———	Reservation line (Options)	
g	Dump Site	Dump site	

O Hydrographic Terms

1		Ocean
2		Sea
3	G	Gulf
4	B	Bay , Bayou
5	Fd	Fjord
6	L	Loch, Lough , Lake
7	Cr	Creek
8	Lag	Lagoon
9	C	Cove
10	In	Inlet
11	Str	Strait
12	Sd	Sound
13	Pass	Passage, Pass
14	Chan	Channel
15		Narrows
16	Entr	Entrance
17	Est	Estuary
18		Delta
19	Mth	Mouth
20	Rd	Roads, Roadstead
21	Anch	Anchorage
22	Apprs	Approach , Approaches
23	Bk	Bank
24		
25	Shl	Shoal
26	Rf Co rf	Reef, Coral reef
27		Sunken rock
28	Le	Ledge
29		Pinnacle
30		Ridge
31		Rise
32	Mt	Mountain, Mount
33		Seamount
34		Seamount chain
35	Pk	Peak
36		Knoll
37		Abyssal hill
38		Tablemount
39		Plateau
40		Terrace
41		Spur
42		Continental shelf
43		Shelf-edge
44		Slope
45		Continental slope
46		Continental rise
47		Continental borderland
48		Basin
49		Abyssal plain
50		Hole
51		Trench
52		Trough
53		Valley
54		Median Valley
55		Canyon
56		Seachannel
57		Moat, Sea moat
58		Fan
59		Apron
60		Fracture zone
61		Scarp, Escarpment
62		Sill
63		Gap
64		Saddle
65		Levee
66		Province
67		Tideway, Tidal gully
68		Sidearm
Other Terms		
80		projected
81		lighted
82		buoyed
83		marked
84	anc	ancient
85	dist	distant
86		lesser
87		closed
88		partly
89	approx	approximate
90	Subm, subm	submerged
91		shoaled
92	exper	experimental
93	D, Destr	destroyed

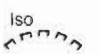
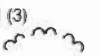
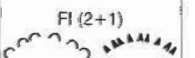
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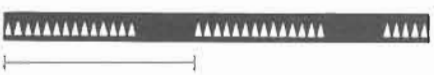
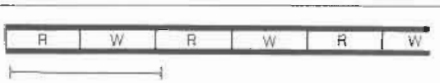
Light Structures, Major Floating Lights

1		*Major light, minor light light, lighthouse*	Lt Lt Ho	
2	■ PLATFORM (lighted)	*Lighted offshore platform*		
3	○ Marker (lighted)	*Lighted beacon tower*	Bn Tr	
4		*Lighted beacon*	Bn	
5	○ Art	*Articulated light Buoyant beacon, resilient beacon*	Bn	
6		*Light vessel; Lightship Normally manned light-vessel*		
7		*Unmanned light-vessel; light float*		FLOAT
8		*LANBY, superbuoy as navigational aid*		

Light Characters

Light Characters on Light Buoys → Q

	Abbreviation		Class of light	Illustration — Period shown	
	International	National			
10.1	F	F	Fixed		
10.2	*Occulting (total duration of light longer than total duration of darkness)*				
	Oc	Oc	Single-occulting		
	Oc(2) Example	Oc (2)	Group-occulting		
	Oc(2+3) Example	Oc(2+3)	Composite group-occulting		
10.3	*Isophase (duration of light and darkness equal)*				
	Iso	Iso	Isophase		
10.4	*Flashing (total duration of light shorter than total duration of darkness)*				
	Fl	Fl	Single-flashing		
	Fl(3) Example	Fl (3)	Group-flashing		
	Fl(2+1) Example	Fl (2+1)	Composite group-flashing		
10.5	LFl	L Fl	Long-flashing (flash 2 s or longer)		
10.6	*Quick (repetition rate of 50 to 79 – usually either 50 or 60 – flashes per minute)*				
	Q	Q	Continuous quick		
	Q(3) Example	Q(3)	Group quick		
	IQ	IQ	Interrupted quick		

	Abbreviation International	Abbreviation National	Class of light	Illustration — Period shown	
	Very quick (repetition rate of 80 to 159 – usually either 100 or 120 – flashes per min)				
10.7	VQ	VQ	*Continuous very quick*		
	VQ(3) Example	VQ (3)	*Group very quick*		
	IVQ	IVQ	*Interrupted very quick*		
	Ultra quick (repetition rate of 160 or more – usually 240 to 300 – flashes per min)				
10.8	UQ	UQ	*Continuous ultra quick*		
	IUQ	IUQ	*Interrupted ultra quick*		
10.9	Mo (A) Example	Mo (A)	*Morse Code*		
10.10	FFl	F Fl	*Fixed and flashing*		
10.11	Al.WR	AlWR	*Alternating*		

Colors of Lights

11.1	W	W	*White (only on sector- and alternating lights)*
11.2	R	R	*Red*
11.3	G	G	*Green*
11.4	Bu	Bu	*Blue*
11.5	Vi	Vi	*Violet*
11.6	Y	Y	*Yellow*
11.7	Y Or	Y Or	*Orange*
11.8	Y Am	Y Am	*Amber*

Colors of lights shown on standard charts



on multicolored charts



on multicolored charts at sector lights



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Period				
12	90s		*Period in seconds*	90s
Elevation				
Plane of Reference for Heights → H				*Tidal Levels* → H
13	12m 36ft		*Elevation of light given in meters or feet*	12m
Range				
Note: Charted ranges are nominal ranges given in Nautical miles				
14	15M	15M	*Light with single range*	15M
	10M	15/10M	*Light with two different ranges* *NOS: only lesser of two ranges is charted*	15/10M
	7M	15-7M	*Light with three or more ranges* *NOS: only least of three ranges is charted*	15-7M
Disposition				
15		(hor)	*horizontally disposed*	(hor)
		(vert)	*vertically disposed*	(vert)

Example of a full Light Description

16

Name
Fl (3) WRG 15s 21ft 11M
Fl (3) WRG 15s 21m 15-11M-NIMA

Fl(3)	*Class of light: group flashing repeating a group of three flashes*
WRG	*Colors: white, red, green, exhibiting the different colors in defined sectors*
15S	*Period: the time taken to exhibit one full sequence of 3 flashes and eclipses: 15 seconds*
21ft / 21m	*Elevation of focal plane above datum: 21 feet or 21 meters*
11M / 15-11M	*Nominal range NIMA: white 15M, green 11M, red between 15 and 11M.*

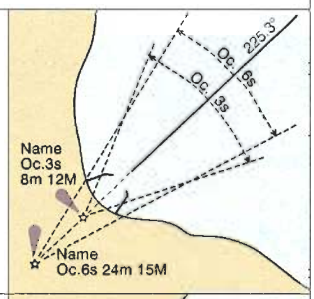
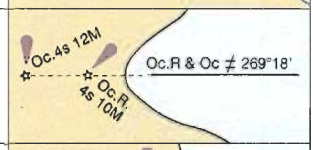
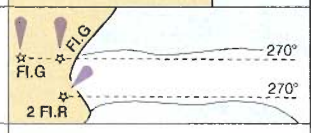
Name
Fl(3)WRG.15s 21m 15-11M

Fl(3)	*Class of light: group flashing repeating a group of three flashes*
WRG	*Colors: white, red, green, exhibiting the different colors in defined sectors*
15s	*Period: the time taken to exhibit one full sequence of 3 flashes and eclipses: 15 seconds*
21m	*Elevation of focal plane above datum: 21 meters*
15-11M	*Nominal range: white 15 M, green 11 M, red between 15 and 11 M*

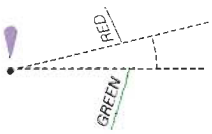
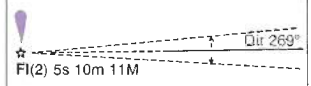
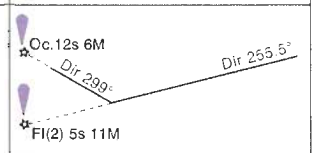
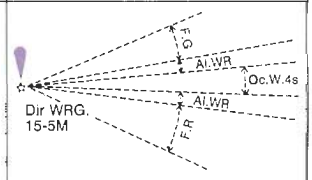
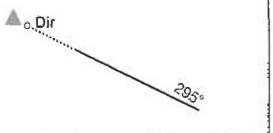
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Lights Marking Fairways

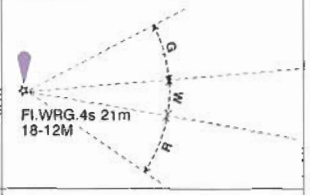
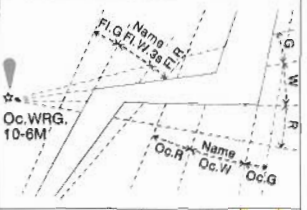
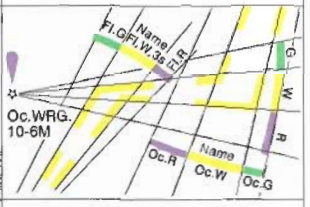
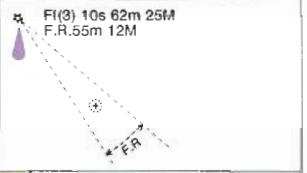
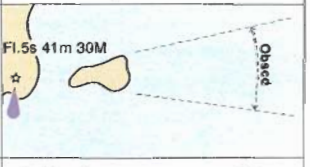
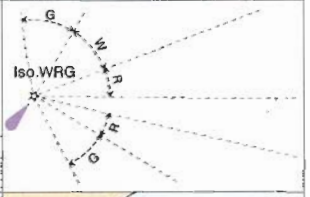
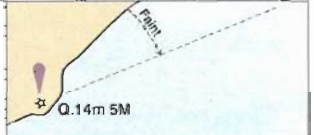
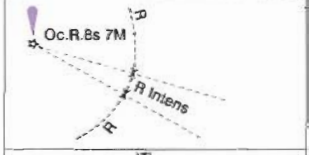
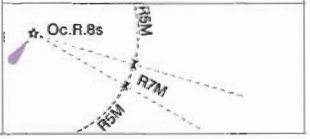
Leading Lights and Lights in Line

20.1	Lts in line 270°	*Leading lights with leading line (firm line is fairway) and arcs of visibility* *Bearing given in degrees and tenths of a degree*	
20.2		*Leading lights ‡: any two objects in line* *Bearing given in degrees and minutes*	
20.3	F Bu, Iso 2s	*Leading lights on small-scale charts*	
21		*Lights in line, marking the sides of a channel*	
22		*Rear or upper light*	Rear Lt or Upper Lt
23		*Front or lower light*	Front Lt or Lower Lt

Direction Lights

30.1		*Direction light with narrow sector and course to be followed, flanked by darkness or unintensified light*	
30.2		*Direction light with course to be followed, uncharted sector is flanked by darkness or unintensified light*	
30.3		*Direction light with narrow fairway sector flanked by sectors of different character*	
31		*Moiré effect light (day and night)* *Arrows show when course alteration needed*	

Note: Quoted bearings are always from seaward.

Sector Lights			
40		*Sector light on standard charts*	
41.1		*Sector lights on standard charts, the white sector limits marking the sides of the fairway*	
41.2		*Sector lights on multicoloured charts, the white sector limits marking the sides of the fairway*	
42		*Main light visible all-round with red subsidiary light seen over danger*	
43		*All-round light with obscured sector*	
44		*Light with arc of visibility deliberately restricted*	
45		*Light with faint sector*	
46		*Light with intensified sector*	 

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P Lights

Lights with limited Times of Exhibition

50	Occas	F R (occas)	*Lights exhibited only when specially needed (for fishing vessels, ferries) and some private lights*	☆ F.R. (occas)	
51		F Bu 9m 6M (F by day)	*Daytime light (charted only where the character shown by day differs from that shown at night)*	Fl.10s 40m 27M ☆ (F.37m 11M Day)	
52			*Fog light (exhibited only in fog, or character changes in fog)*	Name ☆ Q.WRG.5m 10-3M Fl.5S (in fog)	
53			*Unwatched (unmanned) light with no standby or emergency arrangements*	☆ Fl.5s (U)	
54			*Temporary*	(temp)	
55			*Extinguished*	(exting)	

Special Lights

Flare Stack (at Sea) → L *Flare Stack (on Land)* → E *Signal Stations* → T

60	AERO	AERO Al WG 7½s 108m 13M	*Aero light*	☆ Aero Al.Fl.WG.7.5s 11M	★ AERO
61.1		AERO F R 77m 11M	*Air obstruction light of high intensity*	☆ Aero F.R.313m 11M RADIO MAST (353)	
61.2		⊙ TR (R Lts)	*Air obstruction lights of low intensity*	(89) (R Lts)	
62		Fog Det Lt	*Fog detector light*	Fog Det Lt	
63			*Floodlight, floodlighting of a structure*	(illuminated)	
64			*Strip light*		
65	Priv	F R (priv)	*Private light other than one exhibited occasionally*	☆ F.R.(priv)	★ Priv maintd

Supplementary National Symbols

a			*Riprap surrounding light*		
b			*Short-Long Flashing*		S-L Fl
c			*Group-Short Flashing*		
d			*Fixed and Group Flashing*		F Gp Fl

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Q Buoys, Beacons

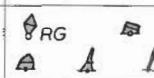
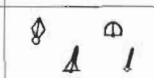
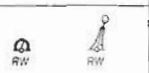
Buoys and Beacons

IALA Maritime Buoyage System, which includes Beacons → Q 130

1			*Position of buoy*	

Colors of Buoys and Beacon Topmarks

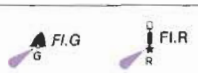
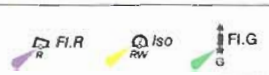
Abbreviations for Colors → P

2			*Green and black*	
3			*Single colors other than green and black*	
4			*Multiple colors in horizontal bands, the color sequence is from top to bottom*	
5			*Multiple colors in vertical or diagonal stripes, the darker color is given first*	
6			*Retroreflecting material*	

Note: Retroreflecting material may be fitted to some unlit marks. Charts do not usually show it. Under IALA Recommendations, black bands will appear blue under a spotlight.

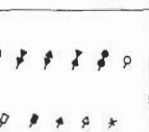
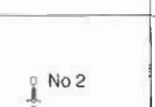
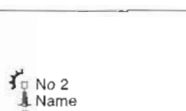
Lighted Marks

Marks with Fog Signals → R

7			*Lighted marks on standard charts*	
8			*Lighted marks on multicolored charts*	

Topmarks and Radar Reflectors

For Application of Topmarks within the IALA-System → Q 130 *Topmarks on Special Purpose Buoys and Beacons* → Q

9			*IALA System buoy topmarks (beacon topmarks shown upright)*	
10			*Beacon with topmark, color, radar reflector and designation*	
11			*Buoy with topmark, color, radar reflector and designation*	

Note: Radar reflectors on floating marks are usually not charted.

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Q Buoys, Beacons

Buoys

Features Common to Buoys and Beacons → Q 1–11

Shapes of Buoys

20	N		Conical buoy, nun buoy		
21	C		Can or cylindrical buoy		
22	SP		Spherical buoy		
23	P		Pillar buoy		
24	S		Spar buoy, spindle buoy		
25			Barrel buoy		
26			Super buoy		

Light Floats

30		Fl G 3s Name	Light float as part of IALA System	Fl.G.3s No 3 Name	
31		Fl(2) 10s 11M	Light float (unmanned light-vessel) not part of IALA System	Fl.10s 12m 26M	

Mooring Buoys

Oil or Gas Installation Buoy → L

Small Craft Mooring → U

40			Mooring buoys		
41		Fl Y 2s	Lighted mooring buoy (example)	Fl.Y.2.5s	
42			Trot, mooring buoys with ground tackle and berth numbers		
43	See Supplementary national symbols m,n		Mooring buoy with telegraphic or telephonic communication		
44		(5 buoys) Moorings	Numerous moorings (example)	Small Craft Moorings	

Q Buoys, Beacons

Special Purpose Buoys			
Note: Shapes of buoys are variable. Lateral or Cardinal buoys may be used in some situations.			
50		Firing danger area (Danger Zone) buoy	DZ
51		Target	Target
52		Marker Ship	Marker Ship
53		Barge	Barge
54		Degaussing Range buoy	
55	Tel	Cable buoy	
56		Spoil ground buoy	
57		Buoy marking outfall	
58	ODAS	ODAS-buoy (Ocean-Data-Acquisition System) Data-Collecting buoy of superbuoy size	ODAS
	W Or W Or	Special-purpose buoys	
59		Wave recorder, current meter	
60	AERO	Seaplane anchorage buoy	
61		Buoy marking traffic separation scheme	
62		Buoy marking recreation zone	
Seasonal Buoys			
70	Priv (maintained by private interests, use with caution)	Buoy privately maintained (example)	(priv)
71		Seasonal buoy (example)	(Apr-Oct)

Beacons

Lighted Beacons → P — *Features Common to Beacons and Buoys* → Q 1–11

80	☐ Bn		Bn	*Beacon in general, characteristics unknown or chart scale too small to show*	Bn
81	☐ RW △ ▣		BW	*Beacon with color, no distinctive topmark*	BW
82		R	BY	*Beacons with colors and topmarks (examples)*	R BY BRB
83				*Beacon on submerged rock (topmark as appropriate)*	BRB BRB

Minor impermanent Marks usually in drying Areas (Lateral Mark of Minor Channel)

Minor Pile → F

90	∘ Pole • Pole			*Stake, pole*	
91	∘ Stake • Stake			*Perch, stake*	PORT HAND STARBOARD HAND
92				*Withy*	

Minor Marks, usually on Land

Landmarks → E

100	⊙CAIRN °Cairn	⊙CAIRN °Cairn	*Cairn*	
101			*Colored or white mark*	☐ Mk

Beacon Towers

110	☐ RW	R G R G	*Beacon towers without and with topmarks and colors (examples)*	R G R G BY BRB
111			*Lattice beacon*	

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Special Purpose Beacons

Leading Lines, Clearing Lines → M

Note: Topmarks and colours shown where scale permits.

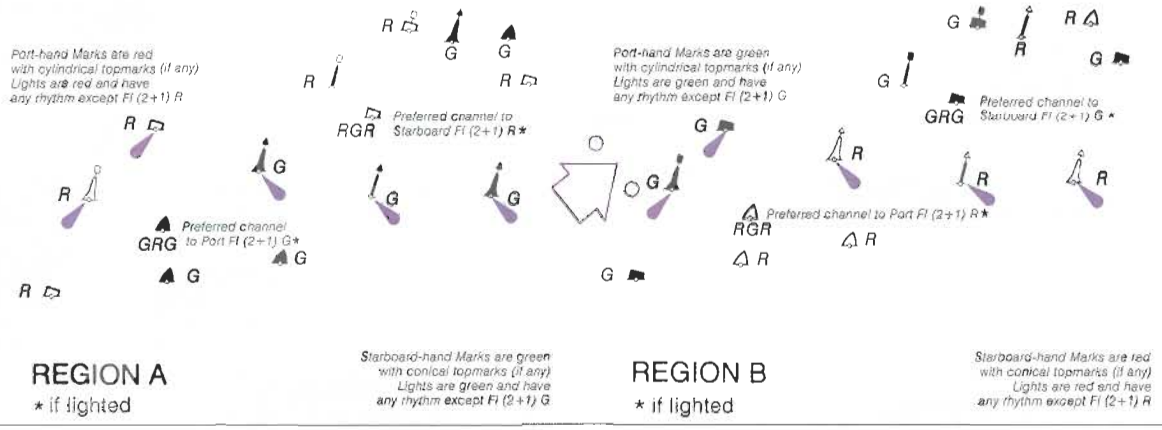
120		Bns in line 270°	Leading beacons	
121		Bns in line 270°	Beacons marking a clearing line	
122	COURSE 270°00' TRUE MARKERS MARKERS		Beacons marking measured distance with quoted bearings	Measured Distance 1852m 090°- 270
123			Cable landing beacon (example)	
124			Refuge beacon	Ref. Ref.
125			Firing danger area beacons	
126			Notice board	

130 *IALA Maritime Buoyage System*

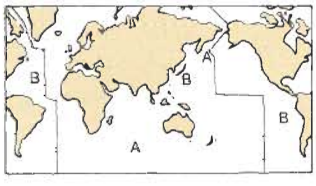
IALA International Association of Lighthouse Authorities

Where in force, the IALA System applies to all fixed and floating marks except lighthouses, sector lights, leading lights and leading marks, light-vessels and lanbys. The standard buoy shapes are cylindrical (can), conical, spherical, pillar, and spar, but variations may occur, for example: light-floats. In the illustrations below, only the standard buoy shapes are used. In the case of fixed beacons (lit or unlit) only the shape of the topmark is of navigational significance.

130.1 *Lateral marks* *are generally for well-defined channels. There are two International Buoyage Regions – A and B – where Lateral marks differ.*



A preferred channel buoy may also be a pillar or a spar. All preferred channel marks have horizontal bands of color. Where for exceptional reasons an Authority considers that a green color for buoys is not satisfactory, black may be used.



IALA Buoyage Regions A and B

130.2 *Direction of Buoyage*

The direction of buoyage is that taken when approaching a harbor from seaward or along coasts, the direction determined by buoyage authorities, normally clockwise around land masses.



Symbol showing direction of buoyage where not obvious.



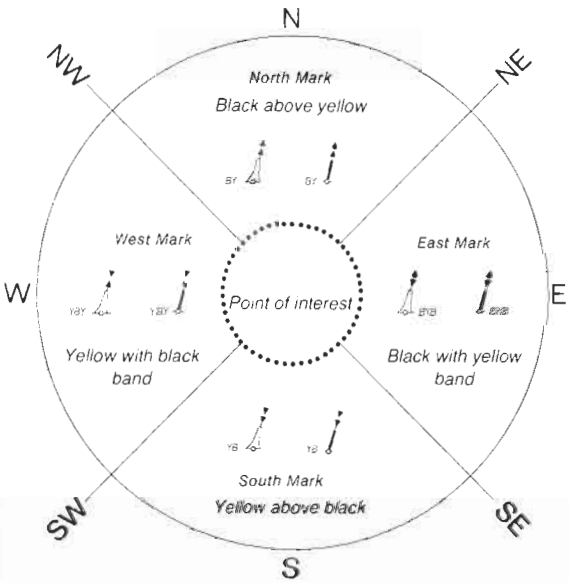
Symbol showing direction of buoyage on multicolored charts.

In the illustrations below all marks are the same in Regions A and B.

130.3 *Cardinal Marks* indicating navigable water to the named side of the marks.

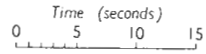
UNLIT MARKS

Topmark: 2 black cones



LIGHTED MARKS

White Light



North Mark	N	*VQ or Q*	
East Mark	E	*VQ(3)5s or Q(3)10s*	Period / Period
South Mark	S	*VQ(6)+LFl 10s or Q(6)+LFl 15s*	Period / Period
West Mark	W	*VQ(9)10s or Q(9)15s*	Period / Period

The same abbreviations are used for lights on spar buoys and beacons. The periods 5s, 10s and 15s, may not always be charted.

130.4 *Isolated Danger Marks* stationed over dangers with navigable water around them.

Body: black with red horizontal band(s)
Topmark: 2 black spheres





Fl(2) — *white light*

130.5 *Safe Water Marks* such as mid-channel and landfall marks.

Body: red and white vertical stripes
Topmark (if any): red sphere





Oc, or Iso, or L Fl 10s, or Mo (A) — *white light*

130.6 *Special Marks* not primarily to assist navigation but to indicate special features

Body (shape optional): yellow ‡
Topmark (if any): yellow X





Fl,Y etc. — *yellow light (rhythm optional)*

‡ *In special cases yellow can be in conjunction with another color.*

BEACONS with IALA System topmarks are charted by upright symbols, eg  (minor beacon) or, on smaller-scale charts: 

Beacon towers are charted:  etc. (occasionally lighted)

RADAR REFLECTORS on buoys and beacons are not generally charted.

COLOR ABBREVIATIONS under symbols, especially those of spar buoys, may be omitted, or may be at variance with symbols shown above.

LIGHT FLOATS: The IALA System is not usually applied to large lightfloats (replacing manned lightships) but may be applied to smaller lightfloats.

Q Buoys, Beacons

Supplementary National Symbols			
a	BELL BELL	Bell buoy	
b	GONG GONG	Gong buoy	
c	WHIS WHIS	Whistle buoy	
d	RW	Fairway buoy (RWVS)	
e	RW	Midchannel buoy (RWVS)	
f	R "2"	Starboard - hand buoy (entering from seaward - US waters)	
g	"1" "1"	Port - hand buoy (entering from seaward - US waters)	
h	BR RG GR G	Bifurcation, Junction, Isolated danger, Wreck and Obstruction buoys	
i	Y	Fish trap (area) buoy	
j	Y	Anchorage buoy (marks limits)	
k	B	Black	
l	△ R Bn △ RG Bn	Triangular shaped beacons	
	■ G Bn □ GR Bn □ W Bn □ B Bn	Square shaped beacons	
	□ Bn	Beacon, color unknown	
m	Tel Tel	Mooring buoy with telegraphic communications	
n	T T	Mooring buoy with telephonic communications	
o		Lighted beacon	Bn

R *Fog Signals*

General

Fog Detector Light → P — *Fog Light* → P

1	Fog Sig		*Position of fog signal. Type of fog signal not stated*	

Types of Fog Signals, with Abbreviations

Supplementary national symbols: a

10	*GUN*	*Explosive*	Explos
11	*DIA*	*Diaphone*	Dia
12	*SIREN*	*Siren*	Siren
13	*HORN*	*Horn (nautophone, reed, tyfon)*	Horn
14	*BELL*	*Bell*	Bell
15	*WHIS*	*Whistle*	Whis
16	*GONG*	*Gong*	Gong

Examples of Fog Signal Descriptions

20	Fl 3s 70m 29M SIREN Mo(N) 60s	Fl 3s 70m 29M SIREN	*Siren at a lighthouse, giving a long blast followed by a short one (N), repeated every 60 seconds*	Fl.3s 70m 29M Siren Mo(N)60S ‡
21	*BELL*	*BELL*	*Wave-actuated bell buoy*	*Bell* ‡
22	*Q(6)+LFl 15s HORN(1) 15s WHIS*	*Q(6)+LFl 15s HORN WHIS*	*Light buoy, with horn giving a single blast every 15 seconds, in conjunction with a wave-actuated whistle*	*Q(6)+LFl.15s Horn(1) 15s Whis* ‡

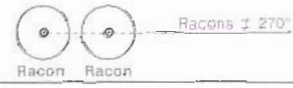
‡ *The fog signal symbol may be omitted when a description of the signal is given.*

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Supplementary National Symbols				
a	Mo		Morse Code fog signal	

S Radar, Radio, Electronic Position-Fixing Systems

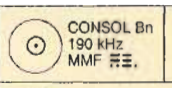
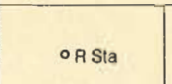
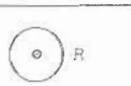
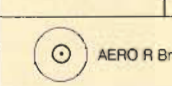
Radar

	Radar Structures Forming Landmarks → E			Radar Surveillance Systems → M
1			Coast radar station, providing range and bearing service on request	
2			Ramark. radar beacon transmitting continuously	
3.1			Radar transponder beacon, with morse identification, responding within the 3-cm(X-)band	
3.2			Radar transponder beacon, with morse identification, responding within the 10-cm(S-)band	
3.3			Radar transponder beacon, responding within the 3-cm(X-) and the 10-cm(S-)band	
3.4			Radar transponder beacon, responding on a fixed frequency outside the marine band	
3.5			Radar transponder beacons with bearing line	
3.6			Floating marks with radar transponder beacons	
4			Radar reflector	
5			Radar-conspicuous feature	

Radio

	Radio Structures Forming Landmarks → E		Radio Reporting (Calling-in or Way) Points → M
10		Circular (non-directional) marine or aeromarine radiobeacon	
11		Directional radiobeacon with bearing line	
12		Rotating-pattern radiobeacon	

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13		*Consol beacon*	
14		*Radio direction-finding station*	
15		*Coast radio station providing QTG service*	
16		*Aeronautical radiobeacon*	

Electronic Position-Fixing Systems

Decca

20	AB AC AD	*Identification of Lattice Patterns*	AB AC AD
21	———	*Line of Position (LOP)*	———
22		*Line of Position representing Zone Limit (or, on larger scales) other intermediate LOPs*	———
23		*Half-lane LOP*	— — — —
24		*LOP from adjoining Chain (on Interchain Fixing Charts)*	— — — —
25	A 12	*Lane value, with Chain designator (Interchain charts only) and Zone designator*	(6) A 12

Note *A Decca Chain Coverage Diagram is given when patterns from more than one Chain appear on a chart. LOPs are normally theoretical ones; if Fixed Error is included, an explanatory note is given.*

Loran-C

30	~~9960-Y~~ 9960-Z	*Identification of Loran-C-Rates*	7970-X
31	———	*Line of Position (LOP)*	———
32		*LOP representing time difference value of an integral thousand µs (microseconds)*	———
33		*LOP beyond reliable groundwave service area*	— — —

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34		LOP from adjoining Chain	
35		LOP from adjoining Chain beyond reliable groundwave service area	
36	9960-Z-58000	LOP labelled with rate and full us value	7970-X 33000
37	050	LOP labelled with final three digits only	050

Note — A Loran-C Chain Diagram may be given if rates from more than one Chain appear on a chart
An explanatory note is given if LOPs include propagation delays.

Omega

40	DF CF AC	Charted station pairs	AB BC
41		Line of Position (LOP)	
42	DF - 702	Lane values	897 AB-900

Note. — A cautionary note draws attention to the need to consult Propagation Prediction Correction (PPC) tables.
An explanatory note draws attention to the unreliability of LOPs within 450 n miles of a transmitter.

Satellite Navigation Systems

50	WGS WGS 72 WGS 84	World Geodetic System, 1972 or 1984	WGS WGS 72 WGS 84

Note — A note may be shown to indicate the shifts of latitude and longitude, in hundredths of a minute, which should be made to satellite-derived positions (which are referred to WGS) to relate them to the chart.

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T Services

Pilotage

1.1	Pilots		Boarding place, position of a Pilot-Cruising Vessel	
1.2		Name	Boarding place, position of a Pilot-Cruising Vessel, with name (e.g. District, Port)	Name
1.3		(see note)	Boarding place, position of a Pilot-Cruising Vessel, with note (e.g. for Tanker, Disembarkation)	Note
1.4			Pilots transferred by helicopter	H
2			Pilot office with Pilot look-out, Pilot look-out	Pilot look-out
3	PIL STA	Pilots	Pilot office	Pilots
4			Port with Pilotage-Service	Port name (Pilots)

Coast Guard, Rescue Stations

10	C G R TR C G WALLIS SANDS	Coast Guard station	CG CG CG
11		Coast Guard station with Rescue station	CG CG CG
12	LS S	Rescue station, Lifeboat station, Rocket station	
13		Lifeboat lying at a mooring	
14		Refuge for shipwrecked mariners	Ref

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T Services

Signal Stations

20	⊙ S S	*Signal station in general*	⊙ SS	Sig Sta
21		*Signal station, showing International Port Traffic Signals*	⊙ SS (INT)	
22		*Traffic signal station. Port entry and Departure signals*	⊙ SS (Traffic)	
23	⊙ HECP	*Port control signal station*	⊙ SS (Port control)	
24		*Lock signal station*	⊙ SS (Lock)	
25.1		*Bridge passage signal station*	⊙ SS (Bridge)	
25.2		*Bridge lights including traffic signals*	F Traffic-Sig	
26		*Distress signal station*	⊙ SS	
27		*Telegraph station*	⊙ SS	
28	S Sig Sta	*Storm signal station*	⊙ SS (Storm)	
29	⊙ NWS SIG STA	*National Weather Service signal station, Wind signal station*	⊙ SS (Weather)	
30		*Ice signal station*	⊙ SS (Ice)	
31		*Time signal station*	⊙ SS (Time)	
32.1	⊙ Tide gauge	*Tide scale or gauge*		
32.2		*Automatically recording tide gauge*	⊙ Tide gauge	
33		*Tidal signal station*	⊙ SS (Tide)	
34		*Tidal stream signal*	⊙ SS (Stream)	
35		*Danger signal station*	⊙ SS (Danger)	
36		*Firing practice signal station*	⊙ SS (Firing)	

Supplementary National Symbols

a	⊙ BELL	*Bell (on land)*	
b			
c	⊙ MARINE POLICE	*Marine police station*	
d	⊙ FIREBOAT STATION	*Fireboat station*	
e		*Notice board*	
f	⊙ LOOK TR	*Lookout station; Watch tower*	
g	Sem	*Semaphore*	
h		*Park Ranger station*	

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U Small Craft Facilities

Small Craft Facilities			
Traffic Features, Bridges → D		Public Buildings, Cranes → F	Pilots, Coastguard, Rescue, Signal Stations → T
1.1		Boat harbor, Marina	
1.2		Yacht berths without facilities	
2		Visitors' berth	
3		Visitors' mooring	
4		Yacht club, Sailing club	
5		Slipway	
6		Boat hoist	
7		Public landing, Steps, Ladder	
8		Sailmaker	
9		Boatyard	
10		Public inn	
11		Restaurant	
12		Chandler	
13		Provisions	
14		Bank, Exchange office	
15		Physician, Doctor	
16		Pharmacy, Chemist	
17		Water tap	
18		Fuel station (Petrol, Diesel)	
19		Electricity	

20		*Bottle gas*	
21		*Showers*	
22		*Laundrette*	
23		*Public toilets*	
24		*Post box*	
25		*Public telephone*	
26		*Refuse bin*	
27		*Car park*	
28		*Parking for boats and trailers*	
29		*Caravan site*	
30		*Camping site*	
31		*Water Police*	

32 *Marina facilities*

No	LOCATION	TIDES: APPROACH DEPTH (REPORTED)	DEPTH: ALONGSIDE DEPTH (REPORTED)	SERVICES: ELECTRICITY (VOLTS/AMPS)	SERVICES: PIERS, SURFACED	SERVICES: REPAIRS, HULL	SERVICES: MARINE RAILWAY	SERVICES: LIFT CAPACITY	SERVICES: BOAT RENTAL	SERVICES: CANOE, ROW, MOTOR	SERVICES: CHARTER, HOUSE, BAL	SERVICES: FOOD, LODGING, CAMPING	SERVICES: PUMP OUT STATION	SERVICES: TOILETS, SHOWERS	SERVICES: WINTER STORAGE	SUPPLIES: HAULOUT	SUPPLIES: WATER	SUPPLIES: GROCERIES	SUPPLIES: BAIT, TACKLE	SUPPLIES: DIESEL FUEL	SUPPLIES: GASOLINE
1	LAS VEGAS BOAT		80	20		S	HM				M			F C	T P	WD	C	W I	GH	BT	G
2	LAKE MEAD MAR		80	15	T E	S	HM				M			FL	T P	WD	C	W I			DG
3	HEMENWAY HARBOR		80			S															
4	TEMPLE BAR HAR		80	15		SM					M	M		FLC	TSL P	WD	C	W I	GH	BT	G
5	ECHO BAY RESORT		35	35	BM	S	M				M	H		FLC	TSL P	WD	C	W I	GH	BT	G
6	OVERTON BEACH		100			S					M			F C	TSL	WD		W I	G	BT	G
7	CALIVILLE BAY M		100	40		S					M	H		F C	TS P	WD		W I	G	B	G

(+) DENOTES HOURS LATER (-) DENOTES HOURS EARLIER
THE LOCATIONS OF THE ABOVE PUBLIC MARINE FACILITIES ARE SHOWN ON THE CHART BY LARGE PURPLE NUMBERS.
THE TABULATED "APPROACH DEPTH (REPORTED)" IS THE DEPTH AVAILABLE FROM THE NEAREST NATURAL OR DREDGED CHANNEL TO THE FACILITY.
THE TABULATED "PUMPING STATION" IS DEFINED AS FACILITIES AVAILABLE FOR PUMPING OUT BOAT HOLDING TANKS.
(H) APPROACH DEPTH FLUCTUATES WITH LAKE LEVELS.

V Index of Abbreviations

AERO, Aero	*Aero light*	P 60
AERO RBn	*Aeronautical radiobeacon*	S 16
Aero RC	*Aeronautical radiobeacon*	S 16
Al	*Alternating*	P 10.11
ALP	*Articulated Loading Platform*	L 12
Alt	*Alternating*	P 10.11
Am	*Amber*	P 11.8
anc	*Ancient*	O 84
ANCH, Anch	*Anchorage*	N 20, O 21
approx	*Approximate*	O 90
Apprs	*Approaches*	O 22
B	*Bay, bayou*	O 4
Bdy Mon	*Boundary monument*	B 24
bk	*Broken*	J 33
Bkw	*Breakwater*	F 4.1
Bl	*Blue*	P 11.4
BM	*Bench mark*	B 23
Bn	*Beacon*	O 4
Bn Tr	*Beacon tower*	O 3
Br	*Breakers*	K 17
brg	*Bearing*	B 62
brk	*Broken*	J 33
Bu	*Blue*	P 11.4
c	*Course*	J 32
C	*Can, cylindrical*	Q 21
C	*Cove*	O 9
CALM	*Centenary Anchor Leg Mooring*	L 16
Cas	*Castle*	E 34.2
Cb	*Cobbles*	J 8
cbl	*Coble*	B 46
cd	*Candela*	B 54
CD	*Chart datum*	H 1
Cem	*Cemetery*	E 19
CG	*Coast Guard station*	T 10
Chan	*Channel*	O 14
Ch.	*Church*	E 10.1
Chy	*Chimney*	E 22
Cl	*Clay*	J 3
CL	*Clearance*	D 20, D 21
cm	*Centimeter(s)*	B 43
Co	*Coral*	J 10
Co rf	*Coral reef*	O 26
Cr	*Creek*	O 7
crs	*Course*	J 32
Cup, Cup.	*Cupola*	E 10.4
Cus Ho	*Customs house*	F 61
Cy	*Clay*	J 3
D	*Destroyed*	O 94
Destr	*Destroyed*	O 94
dev	*Deviation*	B 67
DIA, Dia	*Diaphone*	R 11
Dir	*Direction*	P 30. P 31
dist	*Distant*	O 85
dm	*Decimeter(s)*	B 42
Dn.	*Dolphin*	F 20
Dol	*Dolphin*	F 20
DW	*Deep Water route*	M 27.1, N 12.4
DZ	*Danger Zone*	Q 50
E	*East, eastern*	B 10
ED	*Existence doubtful*	I 1
EEZ	*Exclusive Economic Zone*	N 47
E Int	*Equal interval, isophose*	P 10.3
Entr	*Entrance*	O 16
Est	*Estuary*	O 17
exper	*Experimental*	O 93
Explos	*Explosive*	R 10
Exting, exting	*Extinguished*	P 55
f	*Fine*	J 30
F	*Fixed*	P 10.1
Fd	*Fjord*	O 5
F Fl	*Fixed and flashing*	P 10.10
FISH	*Fishing*	N 21
Fl	*Flashing*	P 10.4
Fla	*Flare stack*	L 11
fm	*Fathom*	B 48
fms	*Fathoms*	B 48
fne	*Fine*	J 30
Fog Det Lt	*Fog detector light*	P 62
Fog Sig	*Fog signal*	R 1
FP	*Flagpole*	E 27
FS, FS.	*Flagstaff*	E 27
ft	*Foot, feet*	B 47
G	*Gravel*	J 6
G	*Green*	P 11.3
G	*Gulf*	O 3

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V Index of Abbreviations

Gp Fl	*Group flashing*	P 10.4
Gp Occ	*Group occulting*	P 10.2
h	*Hard*	J 39
h	*Hour*	B 49
H	*Pilot transferred by helicopter*	T 1.4
HAT	*Highest astronamical tide*	H 3
Hbr Mr	*Harbormaster*	F 60
Historic Wk	*Historic wreck*	N 26
Hk	*Hulk*	F 34
Hor	*Horizontally disposed*	P 15
Hor Cl	*Horizontal clearance*	D 21
Hosp	*Hospital*	F 62.2
hr	*Hour*	B 49
hrd	*Hord*	J 39
IALA	*International Association of Lighthause Authorities*	Q 130
In	*Inlet*	O 10
Intens	*Intensified*	P 45
Int Qk Fl	*Interrupted quick flashing*	P 10.6
IQ	*Interrupted quick flashing*	P 10.6
I Qk Fl	*Interrupted quick flashing*	P 10.6
Iso	*Isophase*	P 10.3
IUQ	*Interrupted ultra quick*	P 10.8
km	*Kilometer(s)*	B 40
kn	*Knot(s)*	B 52
L	*Loch, lough, loke*	O 6
Lag	*Lagoon*	O 8
LANBY	*Large Automatic Navigational Buoy*	P 8
Lat, lat	*Latitude*	B 1
LASH	*Lighter aboard ship*	G 184
LAT	*Lowest astronomical tide*	H 2
Ldg	*Landing*	F 17
Ldg	*Leading*	P 21
Le	*Ledge*	O 28
L Fl	*Long flashing*	P 10.5
Lndg	*Landing*	F 17
LNG	*Liquified natural gas*	G 185
Long, long	*Longitude*	B 2
LOP	*Line of positian*	S 21, S 31, S 41
LPG	*Liquified petroleum gas*	G 186
LSS	*Life saving station*	T 12
Lt	*Light*	P 1
Lt Ho	*Lighthouse*	P 1
Lt V	*Light vessel*	O 6
m	*Meter(s)*	B 41
m	*Minute(s) of time*	B 50
m	*Medium (in relation to sond)*	J 31
M	*Mud, muddy*	J 2
M	*Nautical mile(s)*	B 45
mag	*Magnetic*	B 61
MHHW	*Mean higher high water*	H 13
MHLW	*Mean higher low water*	H 14
MHW	*Mean high water*	H 5
MHWN	*Mean high water neaps*	H 11
MHWS	*Mean high water springs*	H 9
Mi	*Nautical mile(s)*	B 45
min	*Minute of time*	B 50
Mk	*Mark*	Q 101
MLHW	*Mean lower high water*	H 15
MLLW	*Mean lower low water*	H 12
MLW	*Mean low water*	H 4
MLWN	*Mean low water neaps*	H 10
MLWS	*Mean low water springs*	H 8
mm	*Millimeter(s)*	B 44
Mo	*Morse*	P 10.9
MON, Mon	*Monument*	B24, E 24
MSL	*Mean sea level*	H 6
Mt	*Mountain*	O 32
Mth	*Mouth*	O 19
N	*North, northern*	B 9
N	*Nun*	Q 20
NE	*Northeast*	B 13
NM	*Nautical mile(s)*	B 45
N Mi	*Nautical mile(s)*	B 45
No	*Number*	N 12.2
Np	*Neap tide*	H 17
NW	*Northwest*	B 15
NWS SIG STA	*Weather signal station*	T 29
Obsc	*Obscured*	P 43
Obscd	*Obscured*	P 43
Obs spot	*Observation spot*	B 21
Obstn	*Obstruction*	K 40, K 41, K 42
Obstr	*Obstruction*	K 41
Oc	*Occulting*	P 10.2
Occ	*Occulting*	P 10.2

SETSAIL™

V Index of Abbreviations

Occas	*Occasional*	P 50
ODAS	*Ocean Data Acquisition System*	Q 58
Or	*Orange*	P 11.7
P	*Pebbles*	J 7
P	*Pillar*	Q 23
PA	*Position approximate*	B 7
Pass	*Passage, pass*	O 13
PD	*Position doubtful*	B 8
PLT STA	*Pilot station*	T 3
Pk	*Peak*	O 35
Post Off	*Post office*	F 63
Priv, priv	*Private*	P 65, Q 70
Prod. well	*Production well*	L 20
PROHIB	*Prohibited*	N 2.2, N 20, N 21
Pyl	*Pylon*	D 26
Q	*Quick flashing*	P 10.6
Qk Fl	*Quick flashing*	P 10.6
R	*Coast radio station providing QTG services*	S 15
R	*Red*	P 11.2
R	*Rocky*	J 9
Ra	*Radar reference line*	M 32
Ra (conspic)	*Radar conspicuous object*	S 5
Ra Antenna	*Dish aerial*	E 31
Racon	*Radar transponder beacon*	S 3
Radar Sc.	*Radar scanner*	E 30.3
Radar Tr.	*Radar tower*	E 30.2
Radome, Ra Dome	*Radar dome*	E 30.4
Ra Ref	*Radar reflector*	S 4
RBn	*Circular radiobeacon*	S 10
RC	*Circular radiobeacon*	S 10
Rd	*Roads, roadstead*	O 22
RD	*Directional radiobeacon*	S 11
RDF	*Radio direction finding station*	S 14
Ref.	*Refuge*	Q 124
Rep	*Reported*	I 3
Rf	*Reef*	O 26
RG	*Radio direction finding station*	S 14
Rk	*Rock*	J 9
Rky	*Rocky*	J 9
R Mast	*Radio mast*	E 28
Ro Ro	*Roll on Roll off*	F 50
R Sta	*Coast radio station providing QTG services*	S 15
R Tower	*Radio tower*	E 29
Ru	*Ruins*	D 8, F 33.1
RW	*Rotating radiobeacon*	S 12
S	*Sand*	J 1
S	*South, southern*	B 11
S	*Spar, spindle*	Q 24
s	*Second of time*	B 51
SALM	*Single Anchor Leg Mooring*	L 12
SBM	*Single Buoy Mooring*	L 16
Sc	*Scanner*	E 30.3
Sd	*Sound*	O 12
SD	*Sounding doubtful*	I 2
SE	*Southeast*	B 14
sec	*Second of time*	B 51
sf	*Stiff*	J 36
sft	*Soft*	J 35
Sh	*Shells*	J 12
Shl	*Shoal*	O 25
Si	*Silt*	J 4
so	*Soft*	J 35
Sp	*Spring tide*	H 16
SP	*Spherical*	Q 22
Sp.	*Spire*	E 10.3
Spipe	*Standpipe*	E 21
SPM	*Single point mooring*	L 12
SS	*Signal station*	T 20
st	*Stones*	J 5
stf	*Stiff*	J 36
stk	*Sticky*	J 34
Str	*Strait*	O 11
Subm	*Submerged*	O 93
Subm piles	*Submerged piles*	K 43.1
Subm ruins	*Submerged ruins*	F 33.2
sy	*Sticky*	J 34
SW	*Southwest*	B 16
T	*True*	B 63
t	*Metric ton(s)*	B 53
Tel	*Telephone, telegraph*	D 27
Temp, temp	*Temporary*	P 54
Tk	*Tank*	E 32
Tr, Tr., TR	*Tower*	E 10.2, E 20
TT	*Tree tops*	C 14
TV Mast	*Television mast*	E 28
TV Tower	*Television tower*	E 29

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Uncov	*Uncovers*	K 11
UQ	*Ultra quick*	P 10.8
v	*Volcanic*	J 37
var	*Variation*	B 60
Vert	*Vertically disposed*	P 15
Vert Cl	*Vertical clearance*	D 20
Vi	*Violet*	P 11.5
Vil	*Village*	D 4
VLCC	*Very large crude carrier*	G 187
vol	*Volcanic*	J 37
VQ	*Very quick*	P 10.7
V Qk Fl	*Very quick flash*	P 10.7
W	*West, western*	B 12
W	*White*	P 11.1
Wd	*Weed*	J 13.1
WGS	*World Geodetic System*	S 50
Wht	*Wharf*	F 13
WHIS, Whis	*Whistle*	R 15
Wk	*Wreck*	K 20–23, K 26–27, K 30
Y	*Yellow*	P 11.6

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V Index of Abbreviations

Supplementary National Abbreviations:

Apt	*Apartment*	Es
B	*Black*	Qq
bk	*Black*	Jas
bl	*Black*	Jas
Blds	*Boulders*	Je
br	*Brown*	Jaz
bu	*Blue*	Jau
Cap	*Capitol*	Et
ch	*Chocolate*	Jba
Chec	*Checkered*	Qo
Ck	*Chalk*	Jf
Cn	*Cinders*	Jp
Co	*Company*	Eu
Co Hd	*Coral head*	Ji
COLREGS	*Collision regulations*	Na
Corp	*Corporation*	Ev
cps	*Cycles per second*	Bj
CRD	*Columbia River Datum*	Hj
c/s	*Cycles per second*	Bj
Ct Ho	*Court house*	Eo
dec	*Decayed*	Jan
deg	*Degree(s)*	Bn
Di	*Diatoms*	Joa
Diag	*Diagonal bands*	Qp
Discol water	*Discolored water*	Ke
dk	*Dark*	Jbd
Explos Anch	*Explosives anchorage*	Qk
Facty	*Factory*	Ed
F Gp Fl	*Fixed and group flashing*	Pd
fl	*Flood*	Hq
fly	*Flinty*	Jao
Fr	*Foraminifero*	Jy
Fu	*Fucus*	Jaf
GAB, Gab	*Gable*	Ei
GCLWD	*Gulf Coast Low Water Datum*	Hk
Gl	*Globigerina*	Jz
glac	*Glacial*	Jap
gn	*Green*	Jav
Govt Ho	*Government house*	Em

Grd	*Ground*	Ja
Grs	*Grass*	Jv
gty	*Gritty*	Jam
GUN	*Fog gun*	Rd
gy	*Gray*	Jbb
HECP	*Harbor entrance control point*	Tb
HHW	*Higher high water*	Hb
HS	*High school*	Eg
ht	*Height*	Hp
HW	*High water*	Hq
HWF & C	*High water full and change*	Hh
Hz	*Hertz*	Bg
in	*Inch*	Bc
ins	*Inches*	Bc
Inst	*Institute*	En
ISLW	*Indian springs low water*	Hg
K	*Kelp*	Ju
kc	*Kilocycle*	Bk
kHz	*Kilohertz*	Bh
kn	*Knot(s)*	Ho
La	*Lava*	Jl
LLW	*Lower low water*	He
LOOK TR	*Lookout tower*	Tf
lrg	*Large*	Jai
lt	*Light*	Jbc
Ltd	*Limited*	Er
LW	*Low water*	Hc
LWD	*Low water datum*	Hd
LWF & C	*Low water full and change*	Hi
m^2	*Square meter(s)*	Ba
m^3	*Cubic meter(s)*	Bb
Ma	*Mattes*	Jag
Magz	*Magazine*	El
Mc	*Megocycle(s)*	Bl
Mds	*Madrepores*	Jj
MHz	*Megahertz*	Bi
Ml	*Marl*	Jc
Mn	*Manganese*	Jq
Mo	*Morse code*	Rf
Ms	*Mussels*	Js
MTL	*Mean Tide Level*	Hf

V Index of Abbreviations

Supplementary National Abbreviations:

NAUTO	*Nautophone*	Rc
or	*Oronge*	Jax
Oys	*Oysters*	Jr
Oz	*Ooze*	Jb
Pav	*Pavilion*	Ep
Pm	*Pumice*	Jm
Po	*Polyzoa*	Jad
Pt	*Pteropods*	Jac
Quar	*Quarantine*	Fd
Qz	*Quartz*	Jg
Rd	*Radiolaria*	Jab
rd	*Red*	Jay
rt	*Ratten*	Jaj
Ry	*Railway, railroad*	Db
Sc	*Scoriae*	Jo
Sch	*Schist*	Jh
Sch	*Schaal*	Ef
Sem	*Semaphore*	Tg
Sh	*Shingle*	Jd
S-LFl	*Short-long flashing*	Pb
sml	*Small*	Jah
Spg	*Spange*	Jt
Spi	*Spicules*	Jx
spk	*Speckled*	Jal
Stg	*Seatangle*	Jw
St M	*Statute mile(s)*	Be
St Mi	*Statute mile(s)*	Be
Str	*Stream*	Hl
str	*Streaky*	Jak
SUB-BELL	*Submarine fog bell*	Ra
Subm crib	*Submerged crib*	Ki
SUB-OSC	*Submarine oscillator*	Rb
Sub vol	*Submarine volcano*	Kd
T	*Telephone*	Eq,Qt
T	*Short ton(s)*	Bm
T	*Tufo*	Jn
Tel	*Telegraph*	Qs
Tel off	*Telegraph office*	Ek
ten	*Tenacious*	Jaq
unev	*Uneven*	Jbf
Univ	*University*	Eh
us	*Microsecond(s)*	Bf
usec	*Microsecond(s)*	Bf
vard	*Varied*	Jbe
vel	*Velocity*	Hn
vi	*Violet*	Jat
Vol Ash	*Volcanic ash*	Jk
wh	*White*	Jar
WHIS	*Whistle*	Oc
yd	*Yard*	Bd
yds	*Yards*	Bd
yl	*Yellow*	Jaw

W International Abbreviations

B Positions, Distances, Directions, Compass

PA	Position approximate	B 7
PD	Position doubtful	B 8
N	North	B 9
E	East	B 10
S	South	B 11
W	West	B 12
NE	Northeast	B 13
SE	Southeast	B 14
NW	Northwest	B 15
SW	Southwest	B 16
km	Kilometer(s)	B 40
m	Meter(s)	B 41
dm	Decimeter(s)	B 42
cm	Centimeter(s)	B 43
mm	Millimeter(s)	B 44
M	Nautical mile(s), Sea mile(s)	B 45
ft	Foot/feet	B 47
h	Hour	B 49
m, min	Minute(s) of time	B 50
s, sec	Second(s) of time	B 51
kn	Knot(s)	B 52
t	Ton(s)	B 53
cd	Candela (new candela)	B 54

D Cultural Features

Ru	Ruin	D 8

F Ports

Lndg	Landing for boats	F 17
RoRo	Roll-on, Roll-off Ferry	F 50

I Depths

ED	Existence doubtful	I 1
SD	Sounding doubtful	I 2

K Rocks, Wrecks, Obstructions

Br	Breakers	K 17
Wk	Wreck	K 20
Obstn	Obstruction	K 40

L Offshore Installations, Submarine Cables, Submarine Pipelines

Fla	Flare stack	L 11
Prod Well	Submerged Production Well	L 20

M Tracks, Routes

Ra	Radar	M 31
DW	Deep Water	M 27.2

N Areas, Limits

No	Number	N 12.2
DW	Deep Water	N 12.4

O Hydrographic Terms

SMt	Seamount	O 33

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W International Abbreviations

P Lights

Lt	Light	P 1
F	Fixed	P 10.1
Oc	Occulting	P 10.2
Iso	Isophase	P 10.3
Fl	Flashing	P 10.4
LFl	Long-flashing	P 10.5
Q	Quick	P 10.6
IQ	Interrupted quick	P 10.6
VQ	Very quick	P 10.7
IVQ	Interrupted very quick	P 10.7
UQ	Ultra quick	P 10.8
IUQ	Interrupted ultra quick	P 10.8
Mo	Morse Code	P 10.9
W	white	P 11.1
R	red	P 11.2
G	green	P 11.3
Bu	blue	P 11.4
Vi	violet	P 11.5
Y	yellow/orange/Amber	P 11.6
Or	orange	P 11.7
Am	Amber	P 11.8
Ldg	Leading light	P 20.3
Dir	Direction light	P 30
occas	occasional	P 50
R Lts	Air obstruction lights	P 61.2
Fog Det Lt	Fog detector light	P 62
Aero	Aeronautical	P 60/ 61.1

Q Buoys, Beacons

B	Black	Q 81
Mk	Mark	Q 101
IALA	International Association of Lighthouse Authorities	Q 130

R Fog Signals

Explos	Explosive	R 10
Dia	Diaphone	R 11
Whis	Whistle	R 15

S Radar, Radio, Electronic Position-Fixing Systems

Ra	Coast Radar Station	S 1
Racon	Radar transponder beacon	S 3
RC	Circular (non-directional) marine radiobeacon	S 10
RD	Directional radiobeacon	S 11
RW	Rotating-pattern radiobeacon	S 12
RG	Radio direction-finding stations	S 14
R	QTG service, Coast radio stations	S 15
Aero RC	Aeronautical radiobeacon	S 16
WGS	World Geodetic System	S 50

T Services

H	Pilots transferred by helicopter	T 1.4
SS	Signal station	T 20
INT	international	T 21

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X List of Descriptors

Abbreviations
- international W
- national V
Aerial E 30-31
Aera light P 60
Airfields D 17
- Topographic terms G 116-118
Air obstruction lights P 51
Anchorage areas N 12-13
Anchoroges N 10-12, 14
Areas N
- General N 1-2

Beacons
- Colors Q 2-5
- General Q 80-83
- Position Q 1
- Topmarks Q 9-11
Beacon towers Q 110-111
Boat harbor U 1
Breakwater F 4
Bridges D 20-24, Dd-f
Buildings D 5-6, 8, Eo-b, Ed, Ef-v
- Topographic terms G 60-98
Buoyage System, IALA Q 130
Buoys Q
- Colors Q 2-5, Qo-q
- Seasonal Q 70-71
- Shapes Q 20-26
- Special purpose Q50-62 Qa-n,
- Topmarks Q 9-11

Cairn Q 100
Camping site U 30
Canals F 40-41
Caravan site U 29
Cargo transshipment area N 64
Car park U 27
Causeway F 3
Cemetery E 19
Chart number A 1-3
Chart title A 10
Chimney E 22
Churches E 10-12
Clearing line M 2
Coast
- Nature C 1-3, 5-9
- Topographic terms G 1-13
Coastguard T 10-11
Coastline C 1-9, Ca-e
Coast radar station S 1
Coast radio station S 15
Control Points B 20-24
Cranes F 53
Cultural Features D
Currents H 40-46, Hl-t
Cutting D 14

Dams F 44
Dates B49-51
Daytime light P 51
Decca lanes S 20-25
Deep water route M 27
Degaussing range N 25
Depths I
- General I 1-3
- in fairways and areas I 20-25, Ia-c
Depth contours I 30-31
Diffuser L 43

Direction lights P 30-31
Directions B 4-6, B 9-16
Dish aerial E 31
Docks F 25-27
Dolphin F 20-21
Dredging area N 63
Dumping grounds N 23-24, Nc-d
Dike F 1

Electronic Position Fixing Systems S 20-42
- Decca S 20-25
- Loran C S 30-37
- Omega S 40-42
Elevation (height) of light H20, P13
Embankment D 15
Explosives dumping ground N 23

Ferries M 50-51
Fish haven K 46
Flare stack
- on land E 23
- on sea L 11
Flood barrage F 43
Floodlight P 63
Fog detector light P 62
Fog light P 52
Fog signals R
- Descriptions R 20-22
- Types R 10-16, Ra
Forts E 34
Foul K 31-32
- explosives N 23
Fuel station U 18

Geographical positions B 1-16
Glacier C 25
Groin F 6

Harbor installations F 10-34, Fa-d
- Topographic terms G 170-187
Height of light H20, P13
Heights C 10-14, E 4-5
Historic wreck N 26
Hulk F 34
Hydraulic structures F 1-6
- Hydrographic terms O 67
- Topographic terms G 130-136
Hydrographic terms O
- Hydraulic structures O 67

SETSAIL

- Natural features O 1-9, 12, 15, 17-19, 23-66
- Nautical O 10-11, 13-14, 16, 20-22
- Notes O 80-94

IALA Buoyage System Q 130
Incineration area N 65
Inshore traffic zone M 25
International Abbreviations W
International boundaries N 40-41

Landmarks D 8, E
- General E 1-5
Lava Flow C 26
Layout of a chart, schematic A
Leading beacons Q 120
Leading lights P 20
Leading lines M 1
Levee F 1
Light characteristics P 10
Lighted marks Q 7-8
Lights floats Q 30-31
Lights
- Characteristics P 10
- Colors P 11
- Elevation P 13
- Disposition P 15
- Range P 14
- Structure P 1-8
- with limited times of exhibition P 50-55

Limits
- General N 1-2
- international N 40-41
- national N 42-47
- of ice N 60
- various N 48-49, 60-65, Na-b, Ne-f
Locks F 41-42
Log boom N 61
Loran C lanes S 30-37

Magnetic compass B 60-82
Marabaut E 18
Marginal notes A
Marine farm K48
Marina U1
Mark Q 101
Masts E 27-28, E 30
Military area N 31
Military practice area N 30-34
Mills E 25, Ec
Mines E 35-36
Monument E 24
Mooring buoys Q 40-44, Qs-t
Mosque E 17

National limits N 48-49
Natural features C
- Hydrographic terms O 1-9, 12, 15, 17-18, 23-66
- Topographic terms G 20-39
Nature of the coast C 1-3, C 5-9
Nature of the seabed J

Nature reserve N 22
Notes
- Hydrographic terms O 80-94
Notice board Q 126

Obstructions K 40-47, K f-i
- General K 1-2
Oil barrier F 29
Offshore installations L
- General L 1-2
- Limits L 3-4
Omega lanes S 40-42
Overhead cable D 26-27 Dh
Overhead pipe D 28

Perch Q 91
Period P12, P50-55
Pile F 22, K 43
Pilotage T 1-4
Pipelines L 40-44
- areas L 40-41
- on land D 29
Platforms L 2, 10-14, 22
Pole Q 90
Ports F
- Topographic terms G 137-156
Positions B, B30-33
- geographical B 1-16
Private light P 65
Prohibited area N 2
- Military N 31
Production platform L 10
Public buildings F 60-63

Quality of the bottom J, Jag-bf

Racon S 3-5
Radar S 1-5
- Surveillance System M 30-32
Radar beacon S 2
Radar reflector Q 10-11, S 4-5
Radar scanner E 30
Radar transponder beacon S 3
Radio S 10-16
Radiobeacon S 10-14, S 16
Radio Reporting Points M 40
Railways D 13, D 16, Db-c
- Topographic terms G 112
Ra mark S 2
Range P 14
Recommended route M 28
Recommended tracks M 3-6
Refuge beacon Q 124
Relief C 10-14, E 4-5, K 10, Cf-g
Rescue T 11-13
Restricted areas M14, N2, 20-26
Roads D 7, D 10-12, Da
- Topographic terms G 110-111, G 113-115
Rocks K 10-15 Ka

X List of Descriptors

- General K 1-2
Routing measures M 10-29
Routes M
Ruins
- Harbor installations F 33
- Landmarks D 8

Salt pans C 24
Satellite Navigation Systems S 50
Schematic layout of a chart A
Seawalls F 2
Sector lights P 40-46
Services T
Settlements D 1-4
- Topographic terms G 50-54
Signal stations T 20-31, T 33-36
Silo E 33
Slip installations F 23
Small craft facilities U
Soundings B 47-48, I 10-15
Special lights P 60-65
Special purpose beacons Q 120-126
Special purpose buoys Q 50-62, Oa-n
Spoil ground N 62
Strip light P 64
Stake K 44, Q 90-91
Submarine cables L 30-32
- areas L 30-31
Submarine pipelines L 40-44
- areas L 40-41
Symbolized positions B 30-33

Tanks E 32
Telepheric D 25
Temple E 13-16
Terms
- Hydrographic O
- Topographic G
Tidal levels, schematic data H 20
Tidal current table H 31
Tides H
- Abbreviations H 1-17, Ha-k
Tide tables H 30-31
Times B49-51
Topmarks O 9-11
Topographic terms
- Airfields G 116-118
- Coast G 1-13
- Harbor installations G 170-187
- Hydraulic structures G 130-136
- Natural features G 20-29
- Ports G 137-156
- Railways G 112
- Roads G 110-111, G 113-115
- Settlements G 50-54
Tower beacons Q 110-111
Towers E 20-21, E 10, E 29-30
Training walls F 5
Transhipment facilities F 50-53
- Offshore installations L 16
Transit M 2
Tracks M 1-6
Types of seabed J 1-15, Ja-a
- intertidal areas J 20-22

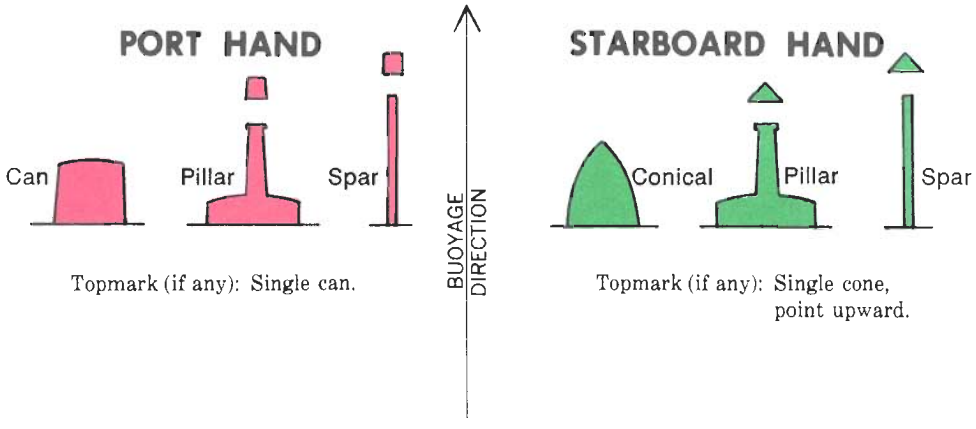
Underwater rock K 13-17, Kb
- General K 1-2
Units B 40-54, Ba-n
Unwatched light P 53

Vegetation C 30-34, Ci-o

Water features C 20-23
Water police U 31
Wellheads L 21, 23, La
Withy Q 92
Works F 30-32
Wrecks K 20-31, Kc
- General K 1-2

Yacht berths U 1

IALA MARITIME BUOYAGE SYSTEM
LATERAL MARKS REGION A



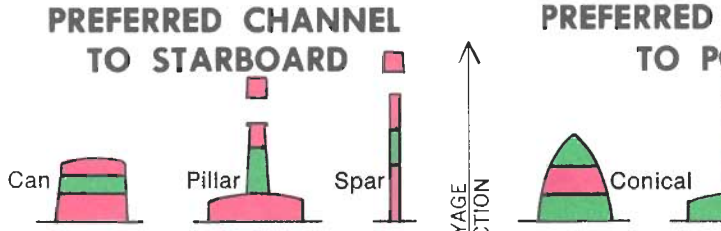
Topmark (if any): Single can.

Topmark (if any): Single cone, point upward.

Lights, when fitted, may have any phase characteristic other than that used for preferred channels.

Examples

Quick Flashing
Flashing
Long Flashing
Group Flashing



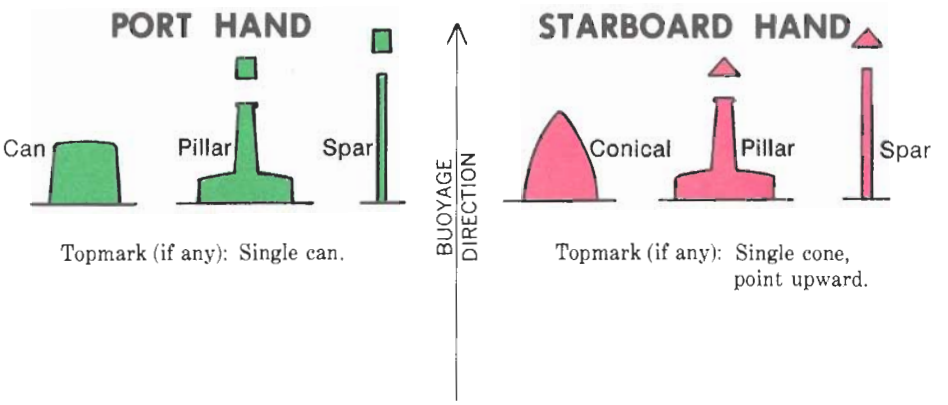
Topmark (if any): Single can.

Topmark (if any): Single cone, point upward.

Lights, when fitted, are composite group flashing Fl (2 + 1).



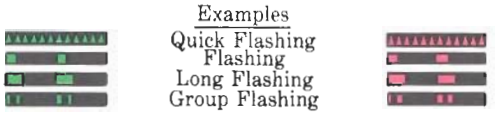
IALA MARITIME BUOYAGE SYSTEM
LATERAL MARKS REGION B

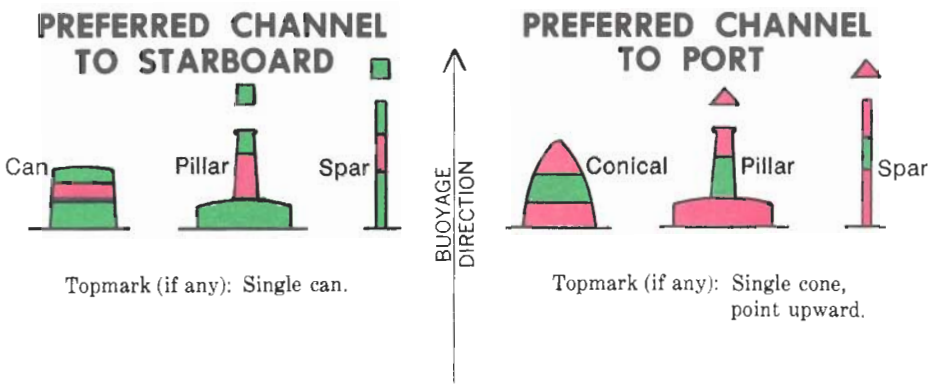


Topmark (if any): Single can.

Topmark (if any): Single cone, point upward.

Lights, when fitted, may have any phase characteristic other than that used for preferred channels.





Topmark (if any): Single can.

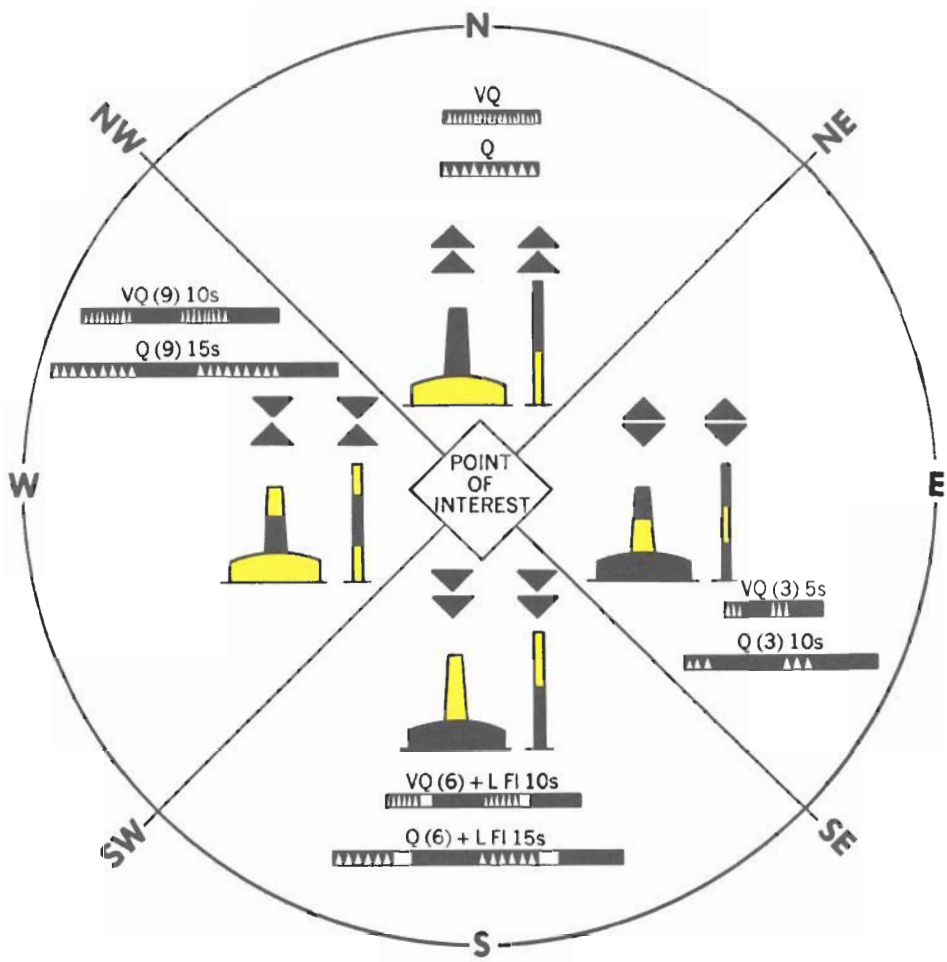
Topmark (if any): Single cone, point upward.

Lights, when fitted, are composite group flashing Fl (2+1).



IALA MARITIME BUOYAGE SYSTEM
CARDINAL MARKS REGIONS A AND B

Topmarks are always fitted (when practicable).
Buoy shapes are pillar or spar.



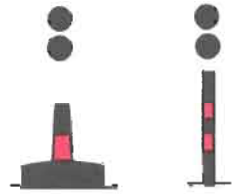
Lights, when fitted, are **white**. Very Quick Flashing or Quick Flashing; a South mark also has a Long Flash immediately following the quick flashes.

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IALA MARITIME BUOYAGE SYSTEM
REGIONS A AND B

ISOLATED DANGER MARKS

Topmarks are always fitted (when practicable).



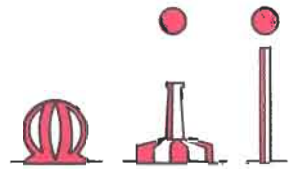
Light, when fitted, is **white**
Group Flashing (2)

Fl (2)

Shape: Optional, but not conflicting with lateral marks; pillar or spar preferred.

SAFE WATER MARKS

Topmark (if any): Single sphere.



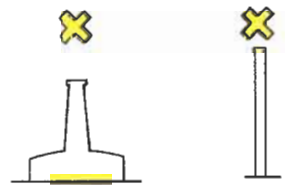
Light, when fitted, is **white**
Isophase or Occulting, or one Long Flash every 10 seconds or Morse "A"

Iso
Occ
L Fl 10s
Morse "A"

Shape: Spherical or pillar or spar.

SPECIAL MARKS

Topmark (if any): Single X shape.



Light (when fitted) is **yellow** and may have any phase characteristic not used for white lights.

Examples
Fl **Y**
Fl(4) **Y**

Shape: Optional, but not conflicting with navigational marks.

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