

**INTERNATIONAL HYDROGRAPHIC  
ORGANIZATION**



**ORGANISATION HYDROGRAPHIQUE  
INTERNATIONALE**

**IHB File No. S3/7050**

**CIRCULAR LETTER 76/2012  
1<sup>st</sup> August 2012**

**HYDROGRAPHIC DICTIONARY (S-32) – NEW OR REVISED DEFINITIONS**

Reference: IHB CL 11/2012 dated 31 January

Dear Hydrographer,

1 The IHB would like to thank the following 51 Member States who replied to the Reference: Algeria; Argentina; Australia; Bahrain; Bangladesh; Belgium; Brazil; Canada; Chile; Colombia; Croatia; Denmark; Ecuador; Finland; France; Germany; Greece; Guatemala; Iceland; India; IR of Iran; Ireland; Italy; Japan; Latvia; Malaysia; Mexico; Monaco; Morocco; Netherlands; New Zealand; Norway; Papua New Guinea; Peru; Poland; Portugal; Qatar; Republic of Korea; Romania; Saudi Arabia; Singapore; Slovenia; South Africa; Spain; Suriname; Sweden; Thailand; Turkey; Ukraine; UK and USA. All 51 Member States supported the new and/or amended definitions in general with 16 States providing comments, mostly editorial in nature, on specific definitions. These comments, together with explanatory remarks from the Chair of HDWG and the IHB, are provided in Annex A. Those that are editorial - rather than substantive in nature - have been taken into account in the final versions shown in Annex B. Fifty Member States supported the Business Rules shown in Annex C with one Member State providing comments.

2 There are currently 81 Member States of the IHO with two States suspended. Therefore in accordance with paragraph 6 of Article VI of the Convention on the IHO, the majority required for adoption of the definitions is 40. Consequently the definitions and Business Rules shown in Annexes B and C respectively have been adopted and will be incorporated in the on-line "Wiki" version of S-32 in the near future.

On behalf of the Directing Committee  
Yours sincerely,

A handwritten signature in blue ink, appearing to read 'Robert Ward', is written over a light blue circular stamp. The signature is fluid and cursive.

Robert WARD  
Director

Annex A: Comments by Member States  
Annex B: Definitions to be included in S-32  
Annex C: Business Rules for IHO Publication S-32

## COMMENTS BY MEMBER STATES

**ALGERIA**

Approves all the definitions proposed by the HDWG; however some errors of syntax remain.

*Remarks by the IHB: The IHB has corrected various errors of syntax as part of the editorial process.*

**ARGENTINA**

Proposed amendments to the definitions in Spanish which are reported in the Spanish edition of this CL.

**AUSTRALIA**

**Compilation** - replace "thereof" at end of first sentence with "(or portion thereof)". At present, preparation of a block correction falls outside the proposed definition of compilation.

*Remarks by Chairman of HDWG and the IHB: Comments supported in principle. The phrase "or part thereof" has been included in the version of the definition shown in Annex B.*

**Electronic Chart** - most people do not include electronic system within the context of an "electronic chart"; in very simple terms, most users using this broad definition consider the electronic charts to be the data on CD (or other medium), while the system is the combination of hardware and software which displays these charts - hence the term "Electronic Chart Systems (ECS)". The only level at which chart and system are specifically intertwined in their definitions is in ECDIS. Even this may need to be redefined to match the common usage understanding once the display rules shift from the ECDIS box back into the product specification under S-101.

*Remarks by Chairman of HDWG and the IHB: The point raised by Australia is supported. The word "sometimes" has been added in the version of the definition shown in Annex B.*

**Nautical chart** - ENC and RNC both fit within this definition as written here. However, through an oversight many years ago ENC and RNC are termed "navigational charts", not "nautical charts". As it currently stands, the definition "nautical chart" therefore only refers to paper charts - a poor position in which to find ourselves, but that's the current situation. Notably, SOLAS refers to "nautical chart or database"; there is no mention of "navigational chart". Recommend an addition to this definition which specifically includes paper, ENC and RNC as specific types of "nautical chart" to ensure they remain strongly linked to SOLAS.

*Remarks by Chairman of HDWG and the IHB: An appropriate sentence has been added in the version of the definition shown in Annex B.*

**CANADA**

Recognizes the significant efforts of the Hydrographic Dictionary Working Group to provide an improved version of S-32 to the hydrographic community.

While accepting the definitions as proposed, our technical experts offer some additional words "external to a ship" to the term "aid to navigation" as shown in bold below:

**aid to navigation:** A visual, acoustical, or RADIO device, **external to a ship, ....**

*Remarks by Chairman of HDWG and the IHB: Comments supported. This text has been added in the version of the definition shown in Annex B.*

**CHILE**

**International Electrotechnical Commission:** (IEC) non-governmental organization that brings together all national Electrotechnical committees (IEC national committees). Its mission is to promote among its members international cooperation in all areas of Electrotechnical Standardization and the use of international standards and the IEC conformity assessment schemes as a tool for international trade.

*Remarks by Chairman of HDWG and the IHB: Taking the approved Business Rules (see Annex B) into consideration it is now considered that only the acronym should be included in S-32.*

**Electronic nautical chart, also known as electronic cell (ENC).** Database standard in terms of content, structure and format, published so that it supports in a navigation system and with the permission of the services authorized by each of Governments who produced them and are subscribed in international bodies, such as their own. The ENC provides the information necessary and essential for the safety of navigation. Contains in certain cases, additional information of publications, such as paths, navigational aids, among others.

*Remarks by Chairman of HDWG and the IHB: The definition was not part of the HDWG work programme and was therefore neither reviewed nor revised. S-32 currently includes a definition for Electronic Navigational Chart. Member States can propose a review, if considered appropriate.*

#### **COLOMBIA**

Proposed some amendments to the definitions in Spanish which are reported in the Spanish edition of this CL.

#### **FINLAND**

Does not support the proposed definitions for “elevation”, “height” and “altitude”. Further work is needed for harmonising these definitions and their uses within S-32, S-4 and S-57. Also the work ongoing with TWLWG should be consulted.

*Remarks by Chairman of HDWG and the IHB: See comments under the UK proposal.*

#### **FRANCE**

Proposed some amendments to the definitions in French which are reported in the French version of this CL.

France agrees to the Business Rules for S-32 and their inclusion in the preface to the on-line WIKI version of S-32 with the following comments:

Under the title “IHO Business Rules for S-32”, make reference to IHO Resolution 7/1929 as amended. More generally France suggests that the HDWG do not duplicate the definitions of terms which should come under the responsibility of bodies other than the IHO, but simply reference them if needed. Therefore, France proposes to replace §3 by the following:

3. Definitions included in S-32 must cover hydrography and marine cartography – extensively. They must cover associated disciplines such as Geodesy, Land Surveying, Law of the Sea, Mathematics, Navigation and Physics, if necessary, to clarify and to avoid any ambiguity. For definitions concerning these disciplines, effort should be made to avoid duplication by favouring reference to definitions in the competent organisations' publications.

*Remarks by Chairman of HDWG and the IHB: Comments supported. Section 3, bullet two has been amended in the version as proposed by France.*

#### **I.R. OF IRAN**

In terms from S-52 ECDIS Glossary, not included in S-32 Appendix 1, in line 12 after “TRAFFIC SERVICE”, the comma should be deleted.

*Remarks by the IHB: Comments supported. Comma deleted in the definition shown in Annex B.*

In definition of GNSS: (for example the E.U's Galileo and China's Beidou) should be deleted.

*Remarks by Chairman of HDWG and the IHB: This is considered to be a factual statement which provides additional contextual information.*

At the beginning of the 2nd page of Annex A to IHB CL 11/2012: “GPS is operated by United States Government”, should be deleted.

*Remarks by Chairman of HDWG and the IHB: This is a factual statement which provides additional contextual information.*

In definition of GLONASS: "Operated by the Government of the Russian Federation" should be deleted.

*Remarks by Chairman of HDWG and the IHB: This is a factual statement which provides additional contextual information.*

In definition of International Maritime Organization (IMO): at third line it should read "includes maritime safety, Marine environment".

*Remarks by Chairman of HDWG and the IHB: The words "Maritime" and "Marine" are considered to be implicit as this is the International MARITIME Organization and therefore do not need to be included.*

At the bottom of the same page in definition of anchor berth: the word "single" should be deleted.

*Remarks by Chairman of HDWG and the IHB: Although an anchor berth might only be used by a single ship at a time, it is agreed that the word "single" is not essential to the definition and has been removed in the version of the definition shown in Annex B.*

In the definition of Cardinal Mark: at the 2nd line instead of saying "find the best" should be "find the safe" Navigable Water.

*Remarks by Chairman of HDWG and the IHB: Either "best" or "safe" could be used; however "best" has been retained in conformity with S-57.*

At the definition of Dumping ground and spoil ground: instead of "A sea area" it should say "An area"

*Remarks by Chairman of HDWG and the IHB: Whilst it is agreed that "sea" is not essential, it is considered that the definition is improved by its inclusion.*

In the definition of Rescue Co-ordination Centre (RCC): after the last word "MRCC" should add "or joint Rescue Coordination Centre"

*Remarks by Chairman of HDWG and the IHB: Comments supported. Some Rescue Co-ordination Centres are operated by both air and maritime services and use the term "Joint" in their title. This has been added in the version of the definition shown in Annex B.*

## **JAPAN**

**Coastal warning:** We propose to replace "National Coordinator" with "National Co-ordinator" as used in the Joint IMO/IHO/WMO Manual on Maritime Safety Information and related manuals.

*Remarks by Chairman of HDWG and the IHB: Comments supported. Change included in the version of the definition shown in Annex B.*

**NAVAREA warning:** We propose to replace "NAVAREA Coordinator" with "NAVAREA Co-ordinator" as used in the Joint IMO/IHO/WMO Manual on Maritime Safety Information and related manuals.

*Remarks by Chairman of HDWG and the IHB: Comments supported. Change included in the version of the definition shown in Annex B.*

## **LATVIA**

Definitions of elevation, height and altitude – generally agree but could be some refinements. As agreed at 8<sup>th</sup> CSPCWG meeting, the first definition of Nautical Chart could be considered for updating.

*Remarks by Chairman of HDWG and the IHB: See comments under the UK proposal.*

## **MEXICO**

Proposed amendments to the definitions in Spanish which are reported in the Spanish edition of this CL.

**PERU**

Proposed some amendments to the definitions in Spanish which are reported in the Spanish edition of this CL.

**SOUTH AFRICA**

Automatic Identification System: (AIS) Delete comma after .....VESSEL TRAFFIC SERVICES (VTS),.....

*Remarks by Chairman of HDWG and the IHB: Comments supported. Change included in the version of the definition shown in Annex B.*

Nautical chart: 1. Can it also not be referred to as a 'navigational chart'?

*Remarks by Chairman of HDWG and the IHB: Notwithstanding the use of the term "navigational" in the term for ENC, and RNC, "navigational chart" has not been used in the definition of nautical chart in order to retain consistency with the fundamental term and supporting definition for a chart as used in SOLAS V Regulation 2.*

Calling-in point: Point at which vessels are required to report to a traffic control centre. Also called reporting point or radio reporting point. "A designated position" in place of the word "Point" at.....

*Remarks by Chairman of HDWG and the IHB: Comments supported. The term "a designated position" is clearer and has been included in the definition shown in Annex B.*

Cardinal mark: In the IALA Maritime Buoyage System a NAVIGATION MARK used in ...

Recommend replace ....MARK used in conjunction with the COMPASS to....with ....MARK, based on the cardinal bearings of the COMPASS, to....

*Remarks by Chairman of HDWG and the IHB: The existing text which accords with S-57 is preferable to avoid confusion.*

Coastline: Recommend replace word "SHORE" with the word "LAND". Plural ....coasts and shores.... to read....coast and shore.....

*Remarks by Chairman of HDWG and the IHB: The final definition included in Annex B has used the defined term "SHORE", rather than introducing uncertainty by using the undefined term "Land".*

dock: The space between two piers. An artificially enclosed area within which ships may moor and which may have gates to regulate water level. Also called slip. ? ? ?

As a slip does not have a gate, it cannot be associated with a dock.

*Remarks by Chairman of HDWG and the IHB: This suggestion was considered by the DWG; however it was felt insufficient research had been conducted to modify the general term "dock" when a more correct comparison would have been with the S-32 term "wet dock". Therefore it has been decided to retain the present definition for "dock" with the suggestion that a review of the terms "dock", "wet dock" and "slip" should be undertaken.*

Landmark: 1 Any monument or fixed object used to mark a boundary on the ground.

The word "monument" has no significance. Recommend to read: Any fixed object used.....

*Remarks by Chairman of HDWG and the IHB: Comments supported. The term "monument" is no longer in common usage in this context and can be removed without affecting the definition. The word "monument" has been removed in the version of the definition shown in Annex B.*

Elevation, height & altitude: Concur with recommendation by CSPCWG 8 Action 5 Comments. (CSPCWG Letter 04/2012, dated 13 February 2012).

*Remarks by Chairman of HDWG and the IHB: See comments under the UK proposal.*

## SPAIN

Proposed some amendments to the definitions in Spanish which are reported in the Spanish edition of this CL.

## SWEDEN

Does not agree with the definition for **electronic chart** and proposes the following definition: electronic chart: a broad term to describe the digital chart used in electronic systems, capable of displaying CHART information.

*Remarks by Chairman of HDWG and the IHB: The definition shown in Annex B has been modified to account for a comment from Australia although not as extensively as the substantive amendment proposed by Sweden.*

Sweden does in principle agree with the definitions for **elevation**, **height** and **altitude**, but considers it unfortunate to mention, in the definition, specific vertical datums: Mean Sea Level and High Water datum. We propose to remove the term Mean Sea Level in the first definition of **elevation** and **altitude** and remove the term High Water datum in the first definition of **height** and consistently only refer to specified vertical datum.

*Remarks by Chairman of HDWG and the IHB: See comments under the UK proposal.*

## UK

**aid to navigation:** Aids to navigation are not always essential to safe navigation. As the first sentence states, their purpose is to assist... Perhaps '...and assist safe navigation' would be better, or simply omit the final phrase.

*Remarks by Chairman of HDWG and the IHB: Comments supported. Text amended to read "assist safe navigation" in the version of the definition shown in Annex B.*

**electronic chart:** SOLAS does not require a paper Nautical Chart (as implied by the new definition 2 for Nautical chart). The second sentence "An electronic CHART may or may not be equivalent to the paper NAUTICAL CHART required by SOLAS" should be removed.

*Remarks by Chairman of HDWG and the IHB: Comments supported. This sentence has been removed from the definition shown in Annex B.*

## New definition for 'INT1':

New definition 2 of a nautical chart seems to specifically include ENC, whereas INT1 is specifically for paper and raster charts, not ENC. Propose therefore to add 'paper and raster' in front of NAUTICAL CHARTS.

*Remarks by Chairman of HDWG and the IHB: Comments supported. The text has been included in the version of the definition shown in Annex B.*

## nautical chart:

The existing first definition for a nautical chart seems very dated. It is a strange list, omitting many key elements of the modern charts, e.g. Energy exploitation, Routeing measures and other superimposed guidance. CSPCWG will be submitting a proposal to HDWG to update this definition.

*Remarks by Chairman of HDWG and the IHB: The HDWG will consider the CSPCWG proposals when received.*

## Revised definitions for 'dock':

The final words 'also called slip' seem misleading. It is possible that a 'slip' may be a special type of dock, but not all docks can also be referred to as a slip.

*Remarks by Chairman of HDWG and the IHB: See comments under South Africa.*

## Revised definitions for 'elevation', 'height' and 'altitude':

Although the HDWG report to HSSC3 (HSSC3-05.9A) states that the Chairman CSPCWG was consulted on the definitions of elevation, height and altitude, in fact he did not agree with the proposed first definitions. (There is no disagreement with the 2<sup>nd</sup> and 3<sup>rd</sup> definitions). The distinct definitions proposed by the HDWG were not considered in detail by HSSC3, but were considered in detail at the 8<sup>th</sup> CSPCWG meeting on 29 November 2011.

It does not seem appropriate to redefine words to accommodate the needs of one particular product (ENC); where possible, definitions should be product neutral. These words have been used synonymously for centuries on paper charts and in common English usage. (See similar situation with coastline and shoreline). The Oxford English Dictionary (OED) is the accepted authority for the English language and has the following definitions:

**elevation** (OED definition 2): height above a given level, especially sea level.

**height** (OED definition 2): elevation above ground or a recognized level (typically sea level).

**altitude**: the height of an object or point in relation to sea level or ground level.

These are virtual synonyms in the geographic context (although the definition of height adds 'above ground', which is covered by the second S-32 definition). Suggesting that 'elevation' should always be used for the surface of the earth, 'height' for the top of objects and 'altitude' for above the surface of the earth has no basis in common usage and causes particular problems. For example:

- A 'spot height' always refers to the earth's surface measured from sea level.
- The 'elevation' of a light refers to the focal plane of a man made object.
- Although 'altitude' is not generally used on English language charts, in French 'altitude' is used with exactly the same meaning as 'height' and 'elevation'.

An assessment of many national charts shows that the English language notes below the title almost always refer to 'Heights' and cover all heights on the chart including: drying heights above CD; heights above a sea level datum including heights of hills and the tops of objects; heights of the tops of objects above the ground.

Additionally, the official language versions of INT1 (and most national equivalents) refer to: heights of cliffs and islands in the introduction and K10; in relation to relief at C10-14; to heights of objects in sections D and E; to drying heights at H20 and I15. Elevation is only used in relation to lights, at P13. It is true, however, that a minority of countries use 'elevations' in exactly the same context and meaning as the majority use 'heights'.

There seems no good reason why, in the proposed definitions, elevations are considered to be 'usually referred to Mean Sea Level', whereas heights are 'usually referred to a High Water datum'. Both should state 'a sea level datum' as the actual datum will vary according to tidal/water level range and national practice, which should be stated on the chart.

In conclusion, there has never been a distinction between 'elevation' and 'height' in normal English usage or on most paper charts. Any distinction only applies to ENC and has been invented for the particular needs of that product. Attempting to apply the distinction more widely will either require major changes to most paper charts and INT1 equivalents, which may confuse the chart user, or S-32 will differ from reality. Rather than try to introduce an arbitrary and belated hydrographic distinction, we should accept that there is none, and indicate in S-32 that they are usually synonymous (as far as the first definitions apply).

**Recommended alternative definitions** (based on the fact that 'height' is by far the commonest word used in this context):

Elevation (1): see HEIGHT. On ENC, elevation excludes the vertical distance of the top of an object measured from a specified datum.

Height (1): The vertical distance of a LEVEL, a point or the top of an object measured from a specified datum. On ENC, height only refers to drying heights and the top of an object affixed to the surface of the EARTH.

Altitude (1): see HEIGHT.

It is further recommended that the definitions of 'spot height' and 'spot elevation' in S-32 should be reversed, as the former is the more common English usage by chart producers.

*Remarks by Chairman of HDWG and the IHB: The HDWG considered comments and proposals from the CSPCWG when revising the definitions of "altitude", "elevation" and "height". Nevertheless, HDWG did not fully agree. CSPCWG did not comment when the HDWG proposals were submitted to HSSC-3 for endorsement. Any Member State or the CSPCWG may propose a new work item for HDWG to further revise the definitions if this is still considered necessary.*

**Revised definition for ‘Hulk’**

During the CSPCWG revision of S-4, a definition was needed to complement the existing INT1 symbol. The existing S-32 was rejected because ‘unrigged’ implies an ex-sailing vessel and a hulk is not necessarily a wrecked or condemned ship; it may simply be utilised for a different purpose. A hulk could also be towed to a new position. Consequently, a draft was developed for S-4 and has been approved by members of CSPCWG; it is suggested that consideration be given to using it in place of the HDWG draft:

*Hulk: the hull of an old vessel from which fittings and superstructure have been removed. It may be abandoned or put to some non-navigable use.*

*Remarks by Chairman of HDWG and the IHB: The points raised by the UK are supported in principle. The definition shown in Annex B takes into account the description developed by CSPCWG.*

**New definition for ‘Silo’:**

As this is not a nautical term, it seems unnecessary to include in S-32. Other buildings which may be utilised as landmarks, such as churches, are not listed. Silos are not necessarily cylindrical. If included, the ordinary dictionary definition could be used, i.e. ‘a tall tower used to store grain’.

*Remarks by Chairman of HDWG and the IHB: Comments supported. Furthermore, in accordance with the new Business Rules this term and definition will not be included in S-32.*

**Revised definition for ‘special mark’:**

The new insertion seems to introduce repetition. The rest of the existing definition from ‘but to indicate ...’ should also be deleted.

*Remarks by Chairman of HDWG and the IHB: Comments supported. The definition has been amended as shown in Annex B.*

**New definition for transhipment or lightening area:**

No objection to the proposed definition, but should the term also include ‘lightering’ (as well as or instead of ‘lightening’)?

*Remarks by Chairman of HDWG and the IHB: The concept of “lightering” is considered to be covered by “transhipment”.*

**New definition for water turbulence:**

No objection to the proposed definition, but a minor typo should be corrected, i.e. comma after WAVES.

*Remarks by the IHB: Comments supported. The definition has been amended as shown in Annex B.*



**Definitions to be included in S-32**

**aid to navigation:** A visual, acoustical, or RADIO device, external to a ship, designed to assist in determining a safe COURSE or a vessel's POSITION, or to warn of dangers and/or OBSTRUCTIONS. Aids to navigation usually include BUOYS, BEACONS, FOG SIGNALS, LIGHTS, RADIO BEACONS, LEADING MARKS, RADIO position fixing systems and GNSS which are chart-related and assist safe NAVIGATION.

**AIS:** See AUTOMATIC IDENTIFICATION SYSTEM.

**altitude:**

1 The vertical distance of a LEVEL, a POINT or an object considered as a POINT (but not affixed to the surface of the EARTH), measured from a given DATUM, usually MEAN SEA LEVEL. See also ELEVATION and HEIGHT.

2 In ASTRONOMY, the vertical angle between the plane of the HORIZON and the line to a CELESTIAL BODY. See also ANGLE OF DEPRESSION and ANGLE OF ELEVATION.

**anchor berth:** A designated area of water where a vessel, seaplane, etc. may anchor.

**ARPA:** See AUTOMATIC RADAR PLOTTING AID.

**Automatic Identification System:** (AIS). An automatic communication and identification system intended to improve the safety of NAVIGATION by assisting the efficient operation of VESSEL TRAFFIC SERVICES (VTS), ship reporting, and ship-to-ship and ship-to-shore operations.

**Automatic Radar Plotting Aid:** (ARPA). A system wherein RADAR targets are automatically acquired and tracked and collision situations computer assessed and warnings given.

**beacon:** A fixed artificial NAVIGATION MARK that can be recognised by its shape, colour, pattern, TOPMARK or light character, or a combination of these. It may carry various additional AIDS TO NAVIGATION. This term is not commonly used when the NAVIGATION MARK can be classified as a LIGHTHOUSE.

**calling-in point:** A designated position at which vessels are required to report to a traffic control centre. Also called reporting point or radio reporting point.

**canal:** An artificial WATERWAY with no FLOW, or a controlled flow, used for NAVIGATION or for draining or irrigating land (ditch).

**cardinal buoy:** See CARDINAL MARK.

**cardinal mark:** In the IALA Maritime Buoyage System a NAVIGATION MARK used in conjunction with the COMPASS to indicate where the mariner may find the best NAVIGABLE WATER. It is placed in one of the four QUADRANTS (North, East, South and West) bounded by inter-cardinal BEARINGS from the point marked.

**careening grid:** A structure in the INTERTIDAL ZONE serving as a support for vessels at low stages of the TIDE to permit work on the exposed portion of the vessel's hull. Also called gridiron.

**caution area:** An area to which a CAUTIONARY NOTE applies where the mariner needs to be aware of special circumstances influencing the safety of NAVIGATION.

**coastal warning:** A NAVIGATIONAL WARNING, or in-force bulletin, promulgated as part of a numbered series by a National Co-ordinator.

**coast guard station:** A station at which a visual/RADIO/RADAR MARINE watch is kept either continuously or at certain times only.

**coastline:** The line where SHORE and water meet. Shoreline and coastline are generally used synonymously.

**compilation:** In CARTOGRAPHY, the selection, assembly, and graphic presentation of all relevant information required for the preparation of a MAP or CHART, or a NEW EDITION or part thereof. Such information may be derived from other MAPS or CHARTS, AERIAL PHOTOGRAPHS, SURVEYS, new DATA, and other sources. In PHOTOGRAMMETRY, the production of a MAP (or portion of a MAP) from AERIAL PHOTOGRAPHS and geodetic control data, by means of photogrammetric instruments. Sometimes called stereo compilation.

**continental shelf:**

1. A zone adjacent to a CONTINENT (or around an ISLAND), extending from the low water line to the DEPTH at which there is usually a marked increase of slope to greater DEPTH. See SHELF.
2. In UNCLOS Article 76:- The continental SHELF of a coastal State comprises the SEA BED and subsoil of the submarine areas that extend beyond its TERRITORIAL SEA throughout the natural prolongation of its land territory to the outer edge of the CONTINENTAL MARGIN, or to a distance of 200 nautical miles from the BASELINEs from which the breadth of the TERRITORIAL SEA is measured where the outer edge of the CONTINENTAL MARGIN does not extend out to that distance.

**control point:**

1. A point on the ground whose position (horizontal and vertical) is used as a base for a dependent survey. Also referred to as control station.
2. In photogrammetry, any point in a horizontal and vertical control system that is identified on a photograph and used for correlating the data shown on that photograph. More specific terms are photo-control point, picture control point and ground control point.

**control station:** See CONTROL POINT.

**dock:** The space between two piers. Also called a SLIP.

**dumping ground:** A sea area where dredged material or other potentially more harmful material e.g. explosives, chemical waste, is deliberately deposited. See also SPOIL GROUND.

**DGPS:** See DIFFERENTIAL GPS

**electronic chart:** A very broad term to describe the DATA, the SOFTWARE, and sometimes the electronic system, capable of displaying CHART information.

**elevation:**

- 1 The vertical distance of a POINT or a LEVEL, on the surface of the EARTH, measured from a specified vertical DATUM usually MEAN SEA LEVEL. The term elevation is sometimes confused with ALTITUDE. For paper NAUTICAL CHARTS, this term is often synonymous with HEIGHT.
- 2 For navigational lights, such as lighthouses, the vertical distance of the focal point of the light measured from a specified vertical DATUM.
- 3 An area higher than its surroundings, as a hill.

**enhanced group call (EGC):** the system for broadcasting messages via the mobile satellite communications system operated by Inmarsat. EGC is a part of the INMARSAT-C system.

**fairway:** That part of a RIVER, HARBOUR etc. where the main NAVIGABLE CHANNEL for vessels of larger size lies. It is also the usual course followed by vessels entering or leaving harbours and sometimes called "ship channel".

**Global Navigation Satellite System:** (GNSS). The standard generic term for satellite NAVIGATION systems ("satnav") that provide autonomous geo-spatial positioning with global coverage. As of 2011, GPS and GLONASS are the only operational systems with new systems (for example the E.U's Galileo and China's Beidou) expected by 2020.

**Global Positioning System:** (GPS). A satellite-based NAVIGATION system designed to provide highly accurate POSITION and velocity information in three dimensions and precise time and time interval on a global basis continuously. GPS is operated by the United States Government. GPS to which differential corrections have been applied is known as DIFFERENTIAL GPS (DGPS). See also GLOBAL NAVIGATION SATELLITE SYSTEM.

**GLONASS:** A space-based, radio-positioning, NAVIGATION and time-transfer system operated by the Government of the Russian Federation. GLONASS to which differential corrections have been applied is known as Differential GLONASS (DGLONASS). See also GLOBAL NAVIGATION SATELLITE SYSTEM.

**GNSS:** See GLOBAL NAVIGATION SATELLITE SYSTEM

**heading:** The direction in which a vessel or craft is pointed, usually expressed in DEGREES from NORTH (TRUE, MAGNETIC OR COMPASS)

**height:**

- 1 The vertical distance of the top of an object affixed to the surface of the EARTH, measured from a specified DATUM usually a High Water datum.
- 2 The vertical dimension of an object. Also called vertical length.

**hulk:** The hull of a wrecked or condemned ship, from which the fittings and superstructure have usually been removed, which is MOORED in a permanent position or grounded.

**IEC:** International Electrotechnical Commission

**IMSO:** International Mobile Satellite Organization

**Inmarsat:** a company providing mobile satellite communications. The only company (2011) providing services within the GMDSS.

**Inmarsat-C:** the digital satellite communications system for store-and-forward text or data messaging using mobile terminals with omni-directional antennas. Inmarsat-C is the only system (2011) that allows ships to meet the majority of the satellite communication requirements of the GMDSS including distress alerting, reception of MARITIME SAFETY INFORMATION and general communications.

**INT1:** The compendium of symbols, abbreviations and terms to be used on paper and raster NAUTICAL CHARTS, for use principally as a reference by mariners, as derived from the "Regulations of the IHO for International (INT) Charts and Chart Specifications of the IHO" (IHO S-4).

**International Maritime Organization:** (IMO) A specialized agency of the United Nations whose primary role is to develop and maintain a comprehensive regulatory framework for shipping. Its remit includes safety, environmental concerns, legal matters, technical co-operation, maritime security and the efficiency of shipping. IMO was formerly called the Inter-Governmental Maritime Consultative Organization (IMCO).

**isolated danger mark:** In the IALA Maritime Buoyage System a NAVIGATION MARK erected on, moored over, or placed immediately adjacent to an isolated danger of limited extent, which has NAVIGABLE WATER all around it.

**landmark:**

- 1 Any fixed object used to mark a boundary on the ground.
- 2 Any PROMINENT OBJECT at a fixed location on LAND which can be used in determining a location or a DIRECTION.

**lateral buoy:** See LATERAL MARK.

**lateral mark:** In the IALA Maritime Buoyage System a NAVIGATION MARK used to indicate the PORT or STARBOARD side of the ROUTE to be followed. They are generally used for well defined CHANNELS and are used in conjunction with a conventional direction of BUOYAGE. See also LATERAL SYSTEM.

**life saving station:** A place where equipment for saving life at SEA is maintained. Also called rescue station.

**local warning:** a NAVIGATIONAL WARNING which covers inshore waters, often within the limits of jurisdiction of a harbour or port authority.

**nautical chart:**

1. A CHART specifically designed to meet the requirements of MARINE NAVIGATION, showing DEPTHS of water, NATURE OF BOTTOM, ELEVATIONS, configuration and characteristics of COAST, dangers and AIDS TO NAVIGATION. May be a paper chart, electronic navigational chart (ENC) or a raster navigational chart (RNC). Also called marine chart, hydrographic chart, or simply CHART.
2. (From SOLAS Chapter V) A special-purpose MAP or a specially compiled database from which a MAP is derived, that is issued officially by or on the authority of a Government, authorized Hydrographic Office or other relevant government institution and is designed to meet the requirements of MARINE NAVIGATION.

**NAVAREA:** The short title for a geographical sea area (may include inland seas, lakes and waterways navigable by sea-going ships) established for the purpose of coordinating the broadcast of navigational warnings. The term NAVAREA followed by a roman numeral may be used to identify a particular sea area. The delimitation of such areas is not related to and shall not prejudice the delimitation of any boundaries between States.

**NAVAREA warning:** a NAVIGATIONAL WARNING or in-force bulletin promulgated as part of a numbered series by a NAVAREA Co-ordinator.

**navigation mark:** An artificial or natural object of easily recognisable shape or colour, or both, situated in such a POSITION that it may be identified on a CHART or related to a known navigational instruction. Alternative term for visual AID TO NAVIGATION. Includes both BUOYs and BEACONS (fixed artificial navigation mark).

**navigational warning:** a message containing urgent information relevant to safe navigation broadcast to ships in accordance with the provisions of the International Convention for the Safety of Life at Sea, 1974, as amended. See COASTAL WARNING, LOCAL WARNING, NAVAREA WARNING.

**NAVTEX:** the system for the broadcast and automatic reception of MARITIME SAFETY INFORMATION by means of narrow-band direct-printing telegraphy.

**pile:** A long heavy timber or section of steel, wood, concrete, etc., forced into the earth or SEA FLOOR to serve as a support, as for a PIER, or to resist lateral pressure; or as a free standing pole within a marine environment.

**radar line:** See RADAR GUIDED TRACK.

**radio navigational warning:** See NAVIGATIONAL WARNING.

**Rescue co-ordination centre (RCC):** a unit responsible for promoting efficient organization of search and rescue services and for coordinating the conduct of search and rescue operations within a search and rescue region. Also called Maritime Rescue Co-ordination Centre (MRCC) and Joint Rescue Co-ordination Centre (JRCC).

**restricted area:** A specified area designated by appropriate authority within which access or navigation is restricted in accordance with certain specified conditions.

**safe water mark:** In the IALA Maritime Buoyage System a NAVIGATION MARK used to indicate that there is NAVIGABLE WATER around its POSITION with no known hazards nearby.

**SafetyNET:** the international service for the broadcast and automatic reception of MARITIME SAFETY INFORMATION via the INMARSAT EGC system in waters where an international NAVTEX service is not provided.

**sandwave:** A large wavelike sediment feature in very shallow water and composed of sand. The wavelength may reach 100 metres; the amplitude may be up to 20 metres. Also sand-wave or sand wave. Sometimes called a mega-ripple.

**special mark:** In the IALA Maritime Buoyage System, a special mark indicates an area or FEATURE referred to in NAUTICAL documents; it is not primarily intended to assist NAVIGATION.

**spoil ground:** A sea area where dredged material is deposited. *See also* DUMPING GROUND.

**submarine cable:** An assembly of wires or fibres, or a wire rope or chain, which has been laid underwater or buried beneath the SEA FLOOR.

**submarine transit lane:** A LANE where submarines may NAVIGATE under water or at the surface.

**swept area:** An area that has been determined to be clear of navigational dangers to a specified DEPTH.

**traffic separation line:** See SEPARATION ZONE.

**traffic separation zone:** See SEPARATION ZONE.

**transshipment or lightening area:** An area designated for transfer of cargo from one vessel to another sometimes in order to reduce a vessel's DRAUGHT. Also called cargo transfer area or cargo transshipment area.

**water turbulence:** The disturbance of water caused by the interaction of any combination of WAVES, CURRENTS, TIDAL STREAMS, WIND, SHOAL patches and OBSTRUCTIONS.

Business Rules for International Hydrographic Organization (IHO) Publication S-32

(See IHO Resolution 7/1929, as amended)

1. S-32 is maintained by the Hydrographic Dictionary Working Group (HDWG), a subsidiary body of the Hydrographic Services and Standards Committee (HSSC) of the IHO.
2. IHO Publication S-32 – “The Hydrographic Dictionary” provides definitions for terms commonly encountered within the areas of competence of the IHO.
3. Definitions included in S-32 are intended to cover:
  - Hydrography and Marine Cartography – extensively
  - Geodesy, Land Surveying, Law of the Sea, Mathematics, Navigation and Physics – to the extent required for clarity and to avoid ambiguity. Where possible duplication should be avoided and reference made to the relevant responsible organization.
4. Terms for inclusion in S-32 may be proposed by IHO Member States, IHO Committees and subordinate bodies and the IHB. Following consideration by the HDWG, proposals for the inclusion of new definitions or the amendment / deletion of existing definitions will be passed to the HSSC for endorsement prior to circulation to IHO Member States for adoption.
5. Where IHO Member States have adopted an IHO Publication which includes definitions (for example, S-53 – “Joint IMO/IHO/WMO Manual on Maritime Safety Information” these definitions may, at the discretion of the HSSC, be included in S-32 without further reference to IHO Member States.
6. Since January 2010, S-32 has been available as an on-line “WIKI” dictionary in English and French. The preparation of a Spanish version and the interlinking of the three languages remain to be done. The English and French WIKIs contain those definitions previously published in the printed 5<sup>th</sup> Editions of S-32.
7. Where a definition has been added or amended since the establishment of the WIKI versions, the IHB Circular Letter reference or IHO Conference decision number is recorded under the WIKI “*Discussion Tab*”. This information is only accessible via a username and password login. This password and login is restricted to HDWG members and IHB staff. However any user of the WIKI can see the date on which an entry was last amended.