

## International definitions of depths and draughts

by the International Taskforce Port Call Optimization



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A worldwide common understanding and definition of terms in connection with port design and daily operation is essential for safety, sustainability and efficiency and is the interest of all parties involved in waterborne transport. In a co-operation which started in 2006 during a congress of the International Harbour Masters Association (IHMA), ports and shipping lines have been working together to achieve that and can claim impressive results.

The priority has been to improve communications between ships and ports using clear and authoritative definitions for the various terms used in daily operations. The definitions have been sourced from existing standards within the shipping industry. Only when no applicable definition could be found was a new one introduced. The definitions include names given to areas within a port; terminology associated with restrictions that might be imposed by an authority on vessel operations related to vessel dimensions, external conditions, manoeuvring and berthing; event information associated with arrival and departure times; and nautical and vessel service times. These were incorporated in the 11<sup>th</sup> edition of the UKHO's Mariners Handbook (NP100) (2016).

One of the co-operating partners, the International Taskforce Port Call Optimization, shared the terms used for vertical measurement of vessels, depth and draughts with [CEDA's Dredging Management Commission \(DMC\)](#) during one of their meetings.

As these are terms, many CEDA members use on a regular basis in their work, in agreement with the Taskforce, DMC is sharing this information with the broader CEDA community.

Figure 1 on the next page shows the relationship between the various terms and the international definitions used in the description of depths as included in the Mariners Handbook.

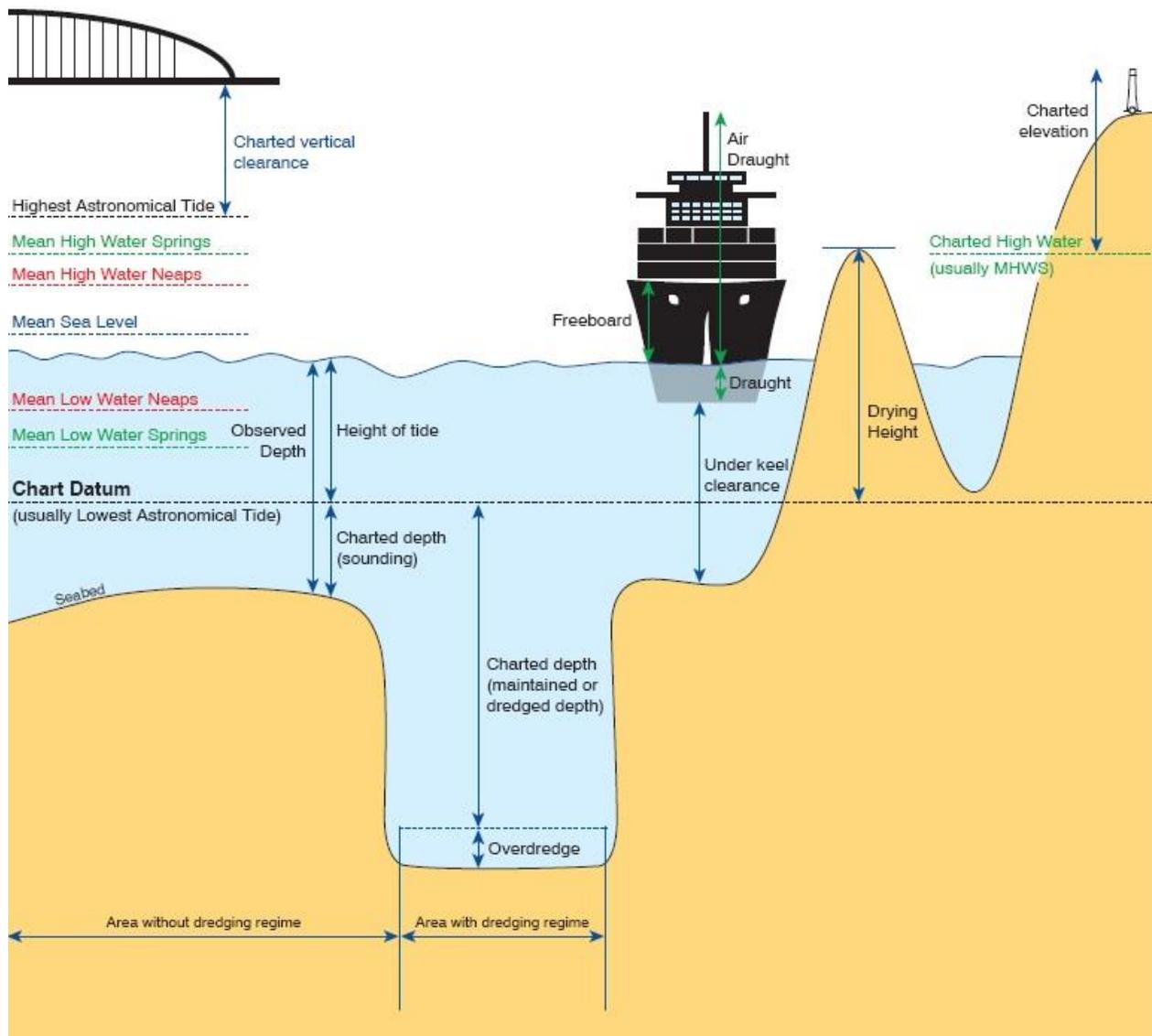
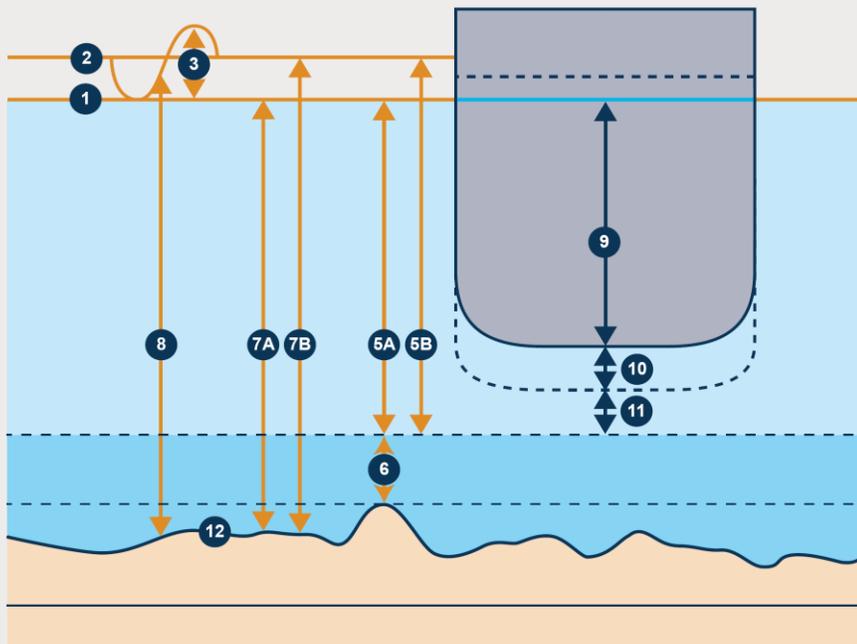


Figure 1: Standardised depth terminology. Source: UKHO (2020)

As an example, Figure 2 on the next page shows the definitions used by Port of Rotterdam since 2017, where the Port integrated the international definitions of the Mariners Handbook (NP100) with local chart datums.

# Depths and draughts



- |                                      |   |
|--------------------------------------|---|
| <b>1 Chart Datum ALAT</b>            | Approximately Lowest Astronomical Tide. A level so low that the tide will not frequently fall below it. It is the level below which soundings or maintained depths are given on charts. Chart datum is also the level to which tidal levels and predictions are referred. |
| <b>2 Chart Datum NAP</b>             | Normaal Amsterdams Peil. This is a mean sea-level. Only used as Chart Datum in the Netherlands.   |
| <b>3 Height of the tide</b>          | The vertical distance at any instant between sea level and chart datum.   |
| <b>5 Maintained depth</b>            | <b>5A</b> The depth at which a channel is kept by human influence, usually by dredging, at ALAT.<br><b>5B</b> Idem, at NAP.   |
| <b>6 Over dredge</b>                 | An additional depth margin provided by a dredging operation to ensure that the depth at a specific location is never less than the pre-determined maintained depth over the interval between programmed dredging operations.  |
| <b>7 Sounding</b>                    | <b>7A</b> Measured or charted depth of water or the measurement of such a depth, at ALAT.<br><b>7B</b> Idem, at NAP.  |
| <b>8 Observed depth</b>              | The vertical distance from the sea surface to the sea floor, at any state of the tide.  |
| <b>9 Draught</b>                     | The depth of the keel below the waterline at any point along the hull (1.025 kg/m <sup>3</sup> ).   |
| <b>10 Fresh Water Allowance</b>      | Extra draught due to difference between density of salt and fresh water.  |
| <b>11 UKC - Under Keel Clearance</b> | The difference between the draught of a vessel and the available depth of water.  |
| <b>12 Seafloor</b>                   | The interface between water and seabed.   |

Figure 2: Port of Rotterdam. Depth terminology. Source: Port of Rotterdam (2020)

Standardising definitions to improve communication between ports and shipping lanes and other stakeholders is an ongoing process. Co-operating organisations continue their important work with the next objective to improve data sharing between interested parties.

DMC encourages CEDA members to use and disseminate the international definitions as described above.

For further information visit the website of the International Taskforce Port Call Optimization [www.portcalloptimization.org](http://www.portcalloptimization.org), or contact IHMA: Ben van Scherpenzeel, Scherpenzeel.ehmc@harbourmaster.org

### **Abbreviations**

DMC Dredging Management Commission  
IHMA International Harbour Master Association  
UKHO United Kingdom Hydrographic Office

### **References**

UKHO (2020). Admiralty. The Mariners Handbook (NP100), 12<sup>th</sup> edition.

IHMA &UKHO (2017). IHMA and UKHO Port information project: Functional definitions for nautical port information.