

B-302 PLANE OF REFERENCE FOR HEIGHTS

‘Height’ may be defined as:

‘The vertical distance of a level, a point or the top of an object measured from a specified datum.’

and as:

‘The vertical dimension of an object’

In the latter definition, this is used to describe the vertical length of an object (that is: its height above ground level, see B-303).

In most charting contexts, the word ‘elevation’ is synonymous with ‘height’. In S-4 (and INT1) the word ‘height’ is generally used, except that ‘elevation’ is used, in accordance with tradition, to describe the height of the focal plane of a light above height datum.

Notes:

1. In **ENC**, for the first definition above, ‘elevation’ and ‘height’ are differentiated:
 - ‘Height’ only refers to drying heights and the **top of an object** affixed to the surface of the EARTH.
 - ‘Elevation’ is the vertical distance of a point or a level, **on** the surface of the earth, measured from a specified vertical datum.
2. The IHO Hydrographic Dictionary Working Group is reconsidering these definitions in 2013.

This sub-section **excludes drying heights** (that is: heights of features submerged at high water; for drying heights, see B-413.1).

For vertical clearances of bridges and other obstructions, see B-380.

B-302.1 **The explanatory notes** beneath the chart title must always quote the plane of reference for heights. See B-241.6.

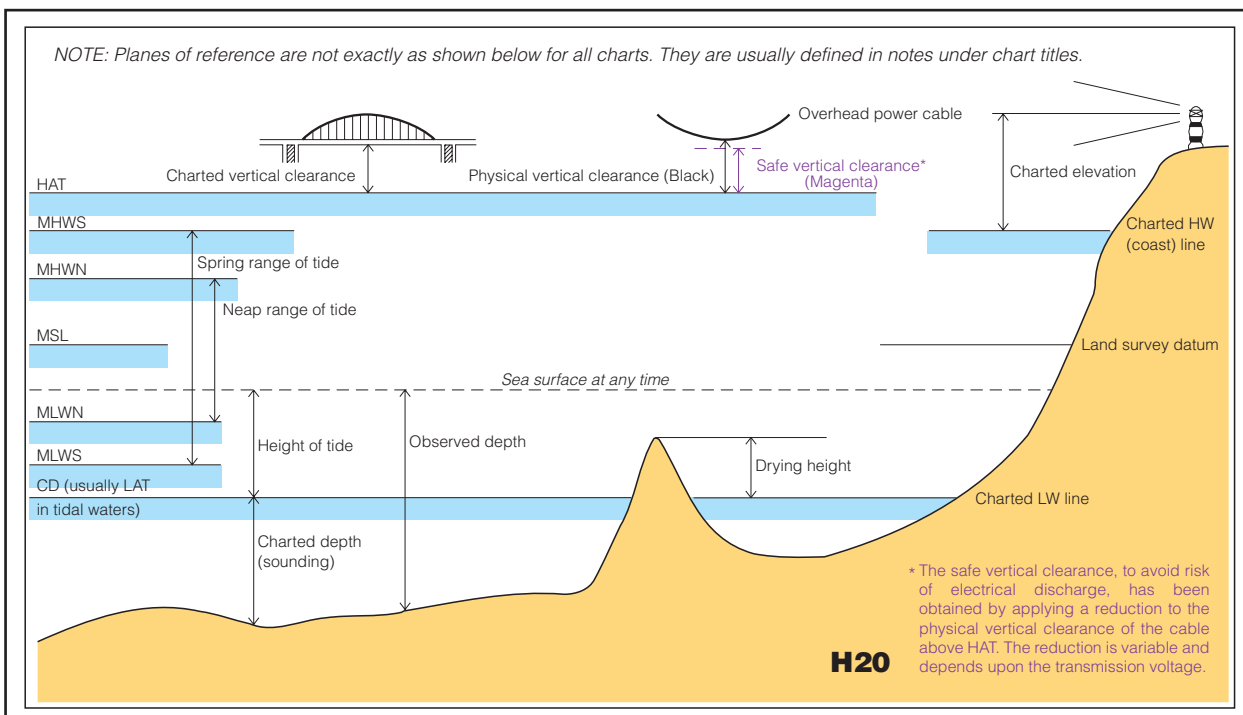
B-302.2 The plane of reference for all heights (including elevations of lights but excluding drying heights) must normally be a High Water (HW) datum, for example: Mean High Water Springs (MHWS); Mean Higher High Water (MHHW); Highest Astronomical Tide (HAT). Where there is little appreciable tide or change in water level at the adjacent shoreline, then Mean Sea Level (MSL) may be used.

IHO Resolution 3/1919 (as amended 2017), contains the following guidance:

In oceanic tidal areas heights on shore, including elevations of lights, should be referred to a Highest Water (HW) datum (paragraph 5).

Highest Astronomical Tide (HAT), or a datum as closely equivalent to this level as is practical and acceptable to Hydrographic Offices, should be adopted as the datum for **vertical clearances**. Alternatively, another, similar datum may be used if high water levels in a specific area frequently deviate from HAT, or a different datum has been established by national policy (paragraph 7).

In geographical areas where the tidal range is negligible (for example less than 0.30m) and in non-tidal areas depths, **and all other navigational information**, should be referred to Mean Sea Level (MSL) or other level as closely equivalent to this as is practical and acceptable to Hydrographic Offices (paragraph 10). (Note: The adopted level may be a well-defined geodetic datum as used for heights in land survey applications or an observed local Mean Sea Level (MSL) based on long series of water level observations.)



B-302.3 All height figures relating to features on land must be upright. Height figures relating to a summit or spot height must be placed immediately adjacent to the symbol marking the position, see B-352.

All other 'out of position' height figures are to be enclosed in brackets (see also B-421.1), except elevations of lights forming part of a light description (see B-471.6), for example:



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