IHO Resolution 3/1919, as amended – Draft Proposal

TITLE	Reference	Last amendment (CL or IHC)	1st Edition Reference
DATUMS AND BENCH MARKS	**3/1919 as amended**	***19/2008***	**A2.5**

1 It is resolved that the datum of tide/water level observations and predictions for mariners shall be the same as chart datum (datum for sounding reduction).

2 It is resolved that chart datum and other tidal/water level datums used should be clearly stated on charts and all other navigational products.

3 It is resolved that chart datums (datums for sounding reduction), the datums of tide/water level prediction and other tidal/water level datums shall always be connected with the general land survey datum, and, in addition, with a prominent and permanent fixed mark in the neighbourhood of the tide gauge, station, observatory etc.

4 It is resolved that ellipsoidal height determinations of the vertical reference marks used for tidal/water level observations should be made, in order to support the production of seamless data sets; i.e. to allow the translation between data sets with differing vertical datums. It is further resolved that such observations should relate to a geocentric reference system, preferably the International Terrestrial Reference System (ITRS) or another geodetic system; ~~one of its realizations~~ e.g. the World Geodetic System 1984 (WGS84).

In ~~oceans and geographical areas connected to oceans~~ Oocean tidal areas

5 It is resolved that heights on shore, including elevations of lights, should be referred to a HW datum.

6 It is resolved that the Lowest Astronomical Tide (LAT*), or a datum as closely equivalent to this level as is practical and~~ly~~ acceptable to Hydrographic Offices, be adopted as chart datum. Alternatively-, another, similar datum may be used if low water levels in a specific area frequently deviate from LAT, or a different datum has been established by national policy. ~~the differences between LAT and national chart datums may be specified in nautical documents. If low water levels in a specific area frequently deviate from LAT, chart datum may be adapted accordingly.~~

7 It is resolved that Highest Astronomical Tide (HAT*), or a datum as closely equivalent to this level as is practical and acceptable to Hydrographic Offices, ~~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. ~~the differences between HAT and national datums for vertical clearances may be specified in nautical documents. If high water levels in a specific area frequently deviate from HAT, the datum for vertical clearances may be adapted accordingly.~~

8 It is recommended that LAT and HAT be calculated either over a minimum period of 19 years using harmonic constants derived from a minimum of one year's observations or by other proven methods known to give reliable results. Tide levels should, if possible, reflect the estimated uncertainty values obtained during the determination of these levels.

In m~~M~~ixed water (where water level variability is due to both tidal and regionally specific forcing mechanisms) and i~~I~~nland ~~W~~waters

9 It is resolved that depths, and all other navigational information should be referred to an appropriate level that is practically~~ly~~ and acceptable to Hydrographic Offices (such as lowest water (LW) as a reference level for depths and highest water (HW) for vertical clearances). The selection of which one of the alternatives to be used is a difficult issue which can only be determined locally and which will be largely dependent on seasonal hydrological conditions. LW and HW are defined preferably as the mean of lowest/highest water levels, or as a suitable percentile of lowest/highest water levels, observed over a long time period.

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In geographical areas ~~with limited connection to oceans and negligible tidal range (< 30 cm)~~ where the tidal range is negligible and in non-tidal areas

~~8~~9~~9~~10 It is resolved that depths, and all other navigational information should be referred to Mean Sea Level (MSL) or other level as closely equivalent to this as is practically acceptable to Hydrographic Offices.

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.

~~9~~11~~0~~ In order to support other non-navigational applications ~~as UNCLOS~~ and also to indicate the characteristics in the area, it is recommended to adopt the mean of yearly lowest/highest water levels, or as a suitable percentile of lowest/highest water levels, observed over a long time period.

~~Inland Waters~~

~~12 It is resolved that depths, and all other navigational information should be referred to an appropriate level practically acceptable to Hydrographic Offices or if needed LW as a reference level for depths and HW for vertical clearances. The selection of which one of the alternatives to be used is a difficult issue which can only be determined locally and which will be largely dependent on seasonal hydrological conditions. LW and HW are defined preferably as the mean of lowest/highest water levels, or as a suitable percentile of lowest/highest water levels, observed over a long time period.~~

** Note: LAT (HAT) is defined as the lowest (highest) tide level which can be predicted to occur under average meteorological conditions and under any combination of astronomical conditions.*

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