



**THIS CIRCULAR LETTER REQUIRES YOU TO VOTE**

**CIRCULAR LETTER 27/2016  
07 June 2016**

IHB File No. S3/1400

**CALL FOR APPROVAL OF A REVISION OF IHO RESOLUTION 3/1919  
- DATUMS AND BENCH MARKS**

References:

- A. IHO Circular Letter 17/2014 dated 11 February - *Proposed Revision to IHO Resolutions on Tides, Water Levels and Tidal Publication*
- B. IHO Circular Letter 44/2014 dated 13 June - *Proposed Revision to IHO Resolutions on Tides, Water Levels and Tidal Publication*
- C. IHO CL 02/2016 dated 8 January - *Outcome of the seventh meeting of the Hydrographic Services and Standards Committee (HSSC)*

Dear Hydrographer,

1. Reference A sought the approval of IHO Member States to a number of revisions to IHO Resolutions on tides, water levels and tidal publications prepared by the IHO Tidal and Water Level Working Group (TWLWG).
2. As reported in Reference B, the revised texts were adopted, with the exception of a proposed revision to IHO Resolution 3/1919 - *Datums and Bench Marks*. This was because, in the interim period, the TWLWG had identified that additional work was required on this Resolution.
3. A new revised text of IHO Resolution 3/1919 was subsequently developed by the renamed Tides, Water Level and Currents Working Group (TWCWG) and considered by the Hydrographic Services and Standards Committee (HSSC) at its 7<sup>th</sup> meeting in November 2015. As reported in Reference C, the text was endorsed by the Committee, subject to the TWCWG reflecting the comments presented at the meeting. The TWCWG has now agreed on a final text which is shown in Annex A with the amendments to the text circulated under Reference A indicated in track change mode.
4. In accordance with the instructions of the HSSC (action HSSC7/27 refers), the Directing Committee is now seeking the approval of Member States and invites them to indicate their decision by returning the Voting Form, provided in Annex B, by **15 August 2016**.

On behalf of the Directing Committee  
Yours sincerely,

Gilles BESSERO  
Director

- Annexes:**
- A. Proposed revision of IHO Resolution 3/1919 as amended - *Datums and Bench Marks*
  - B. Voting Form

IHB File No. S3/1400

**Proposed Revision of IHO Resolution 3/1919 as amended  
Datums and Bench Marks**

Note: the changes to the text initially proposed in Annex A of IHO CL 17/2014 are shown as underlined or ~~striketrough~~ text. In addition, the changes to the text submitted to HSSC-7 are highlighted.

TITLE	Reference	Last amendment (CL or IHC)	1 <sup>st</sup> Edition Reference
<b>DATUMS AND BENCH MARKS</b>	<b>3/1919 as amended</b>	<b><del>xx/2016</del></b>	<b>A2.5</b>

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 one of its realizations e.g. the World Geodetic System 1984 (WGS84).

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

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

6 It is resolved that the Lowest Astronomical Tide (LAT\*), or a datum as closely equivalent to this level as is practically and acceptable to Hydrographic Offices, be adopted as chart datum. Alternatively, another, similar datum may be used if 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 or a different datum has been established by national policy.~~

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 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 or a different datum has been established by national policy.~~

~~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. (Note: text moved to the end of the Resolution)~~

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 mixed water (where water level variability is due to both tidal and regionally specific forcing mechanisms) and inland waters

9 It is resolved that depths, and all other navigational information should be referred to an appropriate level ~~practically that is practical and acceptable to Hydrographic Offices or if needed~~ (such as lowest water (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 from a minimum of one year's observations. (Note: text from former paragraph 10)

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

10~~8~~ 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 and 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.*

11~~9~~ 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 from a minimum of one year's observations.

*Inland Waters*

10 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: text moved to new paragraph 9)

\* 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. (Note: text moved from paragraph 7)

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**VOTING FORM**

(to be returned to the IHB by **15 August 2016**

E-mail: *info@iho.int* - Fax: +377 93 10 81 40)

Member State:	
Point of Contact:	
Contact e-mail:	

**APPROVAL OF A REVISION OF IHO RESOLUTION 3/1919**  
**- DATUMS AND BENCH MARKS**

1. Do you approve the proposed revision of IHO Resolution 3/1919 as amended?

YES	NO
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2. Do you have any comments or reservations?

YES	NO
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If YES, please provide your comments below:

Comment by Member State

Name/Signature: .....

Date: .....