



IHB File No. S3/1401/WG

CIRCULAR LETTER 80/2004
30 November 2004

IHO TECHNICAL RESOLUTIONS A 2.5 AND G 2.1

Reference: Decision 13 of the XVIth IHC April 2002

Dear Hydrographer,

In the above reference the IHC referred Proposal 12 from the USA, regarding an addition to the text of TR A 2.5, to the Tidal Committee for consideration. During its 6th Meeting the Tidal Committee took the opportunity to review all TRs relevant to tides and wishes to propose amendments to TRs A 2.5 and G 2.1. A marked up copy of the texts showing the changes is at Annex A (new text is in italics) with the proposed final text of the TRs at Annex B.

The Committee agreed to the proposal from the USA for the inclusion of ellipsoidal height determinations at tidal stations. A slightly modified text is included at paragraph 4 of the revised TR A 2.5. The Committee also proposes the following amendments:

1. Paragraphs 1 and 2 to be combined as many HOs use a HW datum for the elevation of lights. The word height to be changed to elevation as elevation refers to the vertical distance above a datum level whereas the word height refers to the vertical distance above the local ground level. The delegate from Japan stated that Japan did not see the need to make any change to these two paragraphs.
2. In former paragraph 3a the inclusion of the text "... or as closely equivalent to this level as is practically acceptable to Hydrographic Offices, ..." to permit greater flexibility in the setting of the datum level.
3. The inclusion in former paragraph 3b, in the interests of safety of navigation, of the use of a HW datum for vertical clearances in non-tidal waters. A new note (ii) has been added to this paragraph recommending that when establishing a high (or low) water datum in non-tidal waters a value in the upper (or lower) 6 percent of observed levels should be used. This will allow some flexibility for the establishment of regional levels.

The Committee also proposes a change to TR G 2.1 to allow the use of Spanish when translating the headings of divisions or columns in Tide Tables that are not published in Roman Characters.

Member States are invited to vote on the amendments proposed by the Tidal Committee by completing the voting form at Annex C and returning it to the IHB by 28 February 2005.

On behalf of the Directing Committee
Yours sincerely,

Vice Admiral Alexandros MARATOS
President

A 2.5 DATUMS AND BENCH MARKS

1.- It is resolved that ~~heights~~ *elevations* on shore, *including those of lights, shall should* be referred to *a HW datum or Mean Sea Level (MSL). The datum used should be clearly stated on all charts.*

~~2.- It is resolved that mean sea level shall be retained as the datum above which heights of lights shall be given.~~

23.- a) It is resolved that the datum ~~of~~ *for* tide predictions shall be the same as chart datum (datum for sounding reduction). It is further resolved that the Lowest Astronomical Tide (LAT), *or as closely equivalent to this level as is practically acceptable to Hydrographic Offices,* be adopted as chart datum where tides have an appreciable effect on the water level. Alternatively the differences between LAT and national chart datums may be specified on nautical documents. If low water levels in a specific area frequently deviate from LAT, chart datum may be adapted accordingly.

b) It is resolved that Highest Astronomical Tide (HAT) be adopted as the datum for vertical clearances where tides have an appreciable effect on the water level. Alternatively the differences between HAT and national datums for vertical clearances may be specified on nautical documents. If high water levels in a specific area frequently deviate from HAT, the datum for vertical clearances may be adapted accordingly. *It is further resolved that a HW datum be used for vertical clearances in non-tidal waters.*

Notes:

i) 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. 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 feasible, reflect the estimated error values obtained during the determination of these levels.

ii) In non-tidal waters, in order to allow the development of regional solutions, it is recommended that a range of low/high water definitions of the lower/upper 94-100 percentile be adopted.

34.- It is resolved that chart datums (datums for sounding reduction), the datums of tide prediction and other tidal datums shall always be connected with the general land survey datum, and, in addition, with a prominent and permanent fixed mark in the neighbourhood.

4.- It is resolved that ellipsoidal height determination should be made at vertical reference marks used for tidal observations, 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 World Geodetic System 1984 (WGS84).

G 2.1 TRANSLATION OF HEADINGS, etc.

1.- It is recommended, principally for those Tide Tables which are not published in Roman characters, that the headings of divisions and columns include a translation in English, or French *or Spanish*, in order to increase the international usefulness of the publication.

A 2.5 DATUMS AND BENCH MARKS

1.- It is resolved that elevations on shore, including those of lights, should be referred to a HW datum or Mean Sea Level (MSL). The datum used should be clearly stated on all charts.

- 2.- a) It is resolved that the datum for tide predictions shall be the same as chart datum (datum for sounding reduction). It is further resolved that the Lowest Astronomical Tide (LAT), or as closely equivalent to this level as is practically acceptable to Hydrographic Offices, be adopted as chart datum where tides have an appreciable effect on the water level. Alternatively the differences between LAT and national chart datums may be specified on nautical documents. If low water levels in a specific area frequently deviate from LAT, chart datum may be adapted accordingly.
- b) It is resolved that Highest Astronomical Tide (HAT) be adopted as the datum for vertical clearances where tides have an appreciable effect on the water level. Alternatively the differences between HAT and national datums for vertical clearances may be specified on nautical documents. If high water levels in a specific area frequently deviate from HAT, the datum for vertical clearances may be adapted accordingly. It is further resolved that a HW datum be used for vertical clearances in non-tidal waters.

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- i) 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. 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 feasible, reflect the estimated error values obtained during the determination of these levels.
- ii) In non-tidal waters, in order to allow the development of regional solutions, it is recommended that a range of low/high water definitions of the lower/upper 94-100 percentile be adopted.
- 3.- It is resolved that chart datums (datums for sounding reduction), the datums of tide prediction and other tidal datums shall always be connected with the general land survey datum, and, in addition, with a prominent and permanent fixed mark in the neighbourhood.
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Adoption of revised TRs A 2.5 and G 2.1

Voting FORM

*(to be returned to the IHB by 28 February 2005
E-mail: info@ihb.mc - Fax: +377 93 10 81 40)*

Member State:

Do you agree to the amended text of TR A 2.5 **YES** **NO**

Comments:

Do you agree to the amended text of TR G 2.1 **YES** **NO**

Comments:

Name / Signature Date: