

TITLE	Reference	Last amendment (CL or IHC)	1 st Edition Reference
Digital Tide and Tidal Current Tables.	XX/1919 as amended	Draft	Ver 2.0

NOTE: Items in red still need clarification and approval by the working group members.

1 It is resolved that member Hydrographic Organizations (HO) may choose to publish their tide and tidal current tables in either paper format or digitally. If digitally, they can be distributed either through the HO's web site, or representative complement or via portable media such as a DVD.

General Guidelines for Digital Tide and Tidal Current Tables

2 It is resolved that digital tide and tidal current tables should adhere to all the same requirements as existing paper tide and tidal current tables as specified in IHO Programme 2 "Hydrographic Services and Standards" Section 2.2 – Tides and Water Levels

3 It is resolved that the issuing office should provide documentation on how to install or read the electronic tables, minimum computer specifications how to obtain product support and general information on the Digital Tide and Tidal Current Tables. This information should be provided in either hardcopy written form (for example, on a separate sheet of paper or on the cover of the disk or other media), or electronically in a plain ASCII text 'readme.txt' type of file. This file should also include user license and/or condition of use information.

4 It is resolved that the issuing office should provide its formal name, mailing address; web url and point of contact information on the cover of the media. It should also provide information on the production of the tables (including both address and website), information on how to obtain annual updates, and how to obtain interim updates or errata information.

5 It is resolved that the digital tide and tidal current tables should include a statement concerning the standing of the digital tables as meeting the applicable maritime regulations, either SOLAS and/or local country carriage requirements.

Formats for Digital Tide and Tidal Current Tables

6 It is resolved that there shall be two allowable formats for digital tide and tidal current tables.

A. Scanned Images of Tide and Tidal Current Tables: This format consists of scanned images of the paper tide tables. This format should have the following attributes.

B. Electronically generated Tide and Tidal Current Predictions: This format consists of software and a user interface that calculates tide and tidal current predictions from stored harmonic constituents or time and range offsets.

Detailed Specifications for Digital Tide Tables – Scanned Images of Tide Tables:

7 It is resolved that Scanned Images of Tide Tables should follow the following specifications.

- a. Should be a faithful reproduction of all the pages of printed tide tables.
- b. The images should be formatted in a widely available, common format. Examples formats include, but not limited to, PDF, tiff, Jpeg, Gif. If PDF files are provided, then information on how to download Adobe[®] Reader must be provided.
- c. If multiple books are published, then each book should be located within its own folder and clearly identified.
- d. No modification of the scanned images is permitted by users.

Detailed Specifications for Digital Tide Tables – Electronically Generated Tide Predictions

8 It is resolved that Electronically Generated Tide Predictions should follow the following specifications:

- a. Station Selection: It is recommended that station selections can either be map based or list based, and should be organized by water body.
- b. Station Information: It is recommended that the following information be included with each station;
Station Name and Number (or ID) as appropriate
Body of Water Descriptor (if appropriate)
Latitude and Longitude (**degrees:min:sec and tenths? or decimal equivalent using GIS convention with western and southern hemispheres as being negative latitude and longitude**)
Horizontal and Vertical Datum convention
Location Map with nearby prediction stations identified
URL to station or data portal.
- c. It is recommended that Earth-Moon-Sun Astronomical Calendar Information (Tabular and/or integrated with graphical data output) be included.
- d. It is recommended that Sunrise/Sunset Calendar Information (Tabular and/or integrated with graphical data output)
- e. It is recommended that the default reference datum is the Chart Datum used by the Country furthermore, it is recommended that the user have the ability to reference predictions to other tidal datums supported by the HO (such as LAT, HAT, MHW, MSL) and user identified datums such as a national geodetic or ellipsoidal datum or other coastal engineering or threshold datums that are pertinent.
- f. It is recommended that data displays and tables can be toggled to both in Metric or English units, with default depending upon country
- g. It is recommended that the time displayed is the legal local time as default, with user selected option for UTC/GMT, daylight savings time, etc. Legal time includes daylight savings time if applicable. Furthermore, when time zone information is

displayed it should follow the convention that negative time zone offsets are used for east longitude and positive offsets for west longitude.

- h. It is recommended that the following tide prediction source metadata information be provided;
Harmonic Constituents or Time and Range Correction to Reference Station,
Dates of Harmonic Analyses time series used to create the set of Harmonic Constituents used in the prediction,
Dates of the observations used to create time and height corrections (for nonharmonic based predictions) to a reference Station,
Links to the list of the Harmonic Constituents used in the Prediction. Furthermore, the display of the Harmonic Constituents should adhere to the IHO [National Tidal Constituent Banks Resolution 2/1977 as amended 42/2000 A6.8](#)
The name of the Harmonic Analysis program used to generate the harmonic constituents.
- i. **It is recommended that the HO provide and display tidal sea level amplitude prediction with a minimum of 4 decimals precision (for metric system) if possible.**
- j. It is recommended that users have the ability to obtain output in common formats such as PDF, TXT, XML, CSV, S-112 single point formats
- k. It is recommended that additional information be provide special warning explaining areas of anomalous tidal conditions, special datums, or tidal based hazards to navigations (dual high or low waters, tidal bores, river flow dependencies and river datums, frequent non-tidal conditions, etc..)
- l. It is recommended, when applicable, that estimates of uncertainty in the predicted times and heights of high and low waters be provided to users.

Detailed Specifications for Graphical Display of Electronic Tide Predictions

9 It is resolved that the predictions have the ability to obtain graphical and tabular output for desired time period (either historical and into the future) and should contain the following attributes with the objective not to prescribe a specific graphical view but rather to identify common elements that transcend all types of graphs:

- a It is recommend that the predictions can be displayed as discrete points or a continuous curve using a curve fit routine to times and heights of high and low waters or to the time series values.
- b It is recommended that all axes should be clearly labelled
- c It is recommended that time series data should have a minimum, 1- hour increments
- d It is recommended that times and heights of predicted high and low tides should be provided
- e It is recommended that the default datum should be the same as chart datum for the location of the prediction

f It is recommended that the tidal height units default should be the same as the HO's printed tables

g It is recommended that the display should include station information (as defined above)

h It is recommended that the display include the name and/or the insignia of the source authority organization

i It is recommended that the display should have the option to view the tide prediction numerical values used to create the graphic.

j It is recommended that the display of the graphical data should be able to be adjusted to suit daytime, twilight, and night time viewing

Detailed Specifications for Digital Tidal Current Tables

10 It is resolved that Digital Tidal Current Tables can be in the same two formats as Digital Tide Tables and the same requirements that apply to digital tide tables pertain to tidal current tables.

11 It is resolved that electronically generated Tidal Current Predictions do have additional specifications as identified:

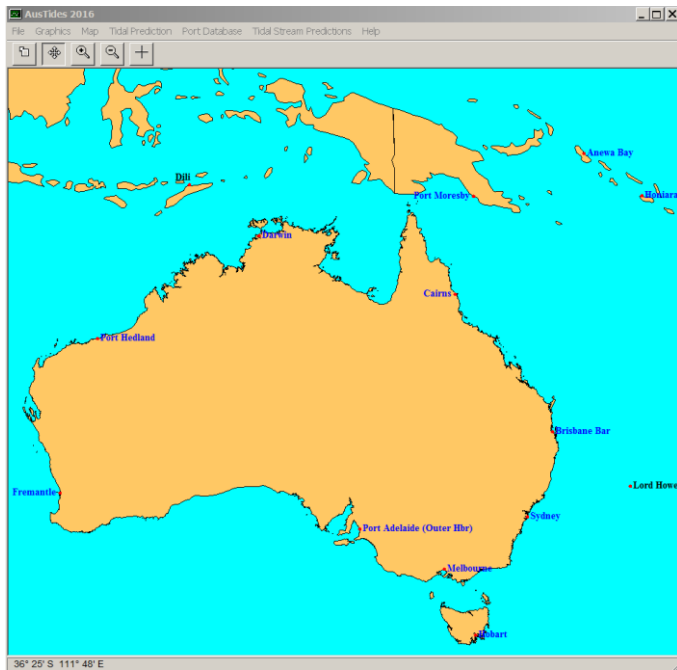
a It is recommended that the depth of prediction be included in the metadata and include a the descriptor that the depth is either from the surface down or from the bottom up

b It is recommended, if applicable, flood and ebb current direction (referenced to True North) be presented.

c It is recommended that for graphical display of tidal currents the default speed units should be knots

d It is recommended that for graphical display of tidal currents the default direction units should be degrees (referenced to true north).

Australian Example

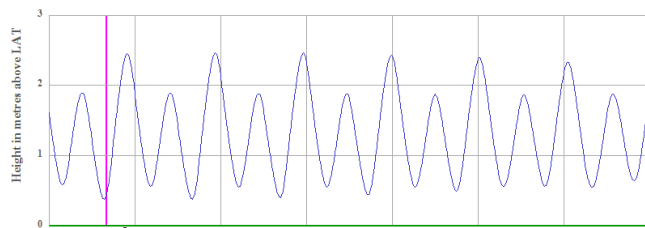


BRISBANE BAR

Local Standard
Time Zone: -10:00 U.T.

27° 22' S 153° 10' E

PREDICTION DATUM below MSL: 1.31 (m)



Jun 20 Mo	21 Tu	22 We	23 Th	24 Fr	25 Sa	26 Su
Time m	Time m	Time m	Time m	Time m	Time m	Time m
0343 0.6	0423 0.6	0503 0.5	0543 0.5	0624 0.5	0024 2.4	0109 2.3
0911 1.9	0951 1.9	1032 1.9	1115 1.9	1200 1.9	0707 0.5	0755 0.5
1520 0.4	1557 0.4	1635 0.4	1713 0.4	1755 0.5	1250 1.9	1347 1.9
2150 2.4	2227 2.5	2304 2.5	2343 2.4		1843 0.6	1939 0.6

Year 2016

Port 59980



16:00 0.4m



Moon phases supplied by
Sydney Observatory

No account is taken of Daylight Saving Time

These predictions are identical to those published in ANTT and can thus be used as an official navigational publication.
Prediction Datum is LAT, which may not be Chart Datum. Correction to Chart Datum can be found at:
Level / To Chart Datum Corrections and Zero of Predictions Window.
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Example from SHOM (France)

Select harbor

Search harbor



Close the map

Select harbor

Search harbor

Show the map

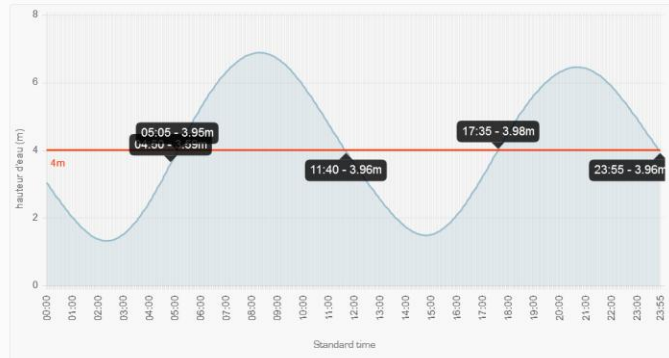
Brest (France)

Coordinates : 048° 23' 00.0" N, 004° 30' 00.0" W

Tides tables | Water level by hour | Tides coefficient

05/02/2018 S_Time

Monday February 5, 2018				Tuesday February 6, 2018			Wednesday February 7, 2018			Thursday February 8, 2018					
	Hour	Height	Coefficient	Hour	Height	Coefficient	Hour	Height	Coefficient	Hour	Height	Coefficient			
LW	02:20	1.31	-	LW	03:03	1.74	-	LW	03:49	2.20	-	LW	04:42	2.62	-
HW	08:18	6.88	85	HW	08:59	6.40	71	HW	09:45	5.91	56	HW	10:41	5.48	43
LW	14:46	1.49	-	LW	15:30	1.99	-	LW	16:19	2.45	-	LW	17:17	2.91	-
HW	20:41	6.45	78	HW	21:24	6.02	63	HW	22:16	5.62	49	HW	23:21	5.34	39



You can display the water level to a given hour [Water level option] or the hours according to a threshold [Threshold option].
 Click on the chart to put a line (keep the mouse pressed to move the line) or enter a value in the following field

Water level
 Threshold
 None