WinFrog Device Group:	**TIDE**
Device Name/Model:	**TIDE FILES**
Device Information:	*.TAB file is a format generated by: Micronautics, Inc. PO Box 1428 Camden Maine 04843 Micronautics is the creator of tidal database used to calculate the predicted tides. Tel: 1-800-456-TIDE inside the US Tel: 1-207-236-0610 from abroad Fax: 1-207-236-6211 Email: jim@micronaut.com *.TID This format is used by CARIS Universal Systems Ltd 115 Waggoners Lane Fredericton, New Brunswick Canada E3B 2L4 Phone: 1 (506) 458-8533 Fax: 1 (506) 459-3849
Device Data String(s) Output to WinFrog:	See the section on the file format below.
WinFrog Data String(s) Output to Device:	
WinFrog Data Item(s) and their RAW record:	TIDE DATA 380

DEVICE DESCRIPTION:

This device reads predicted tides from a file of two different formats.

One format is produced by Micronautics, Inc. World Tide program. This program is used to generate predicted tides (*.tab format) for any time period for thousands of locations covering the entire globe. The data to generate these tidal predictions is available by subscription to Micronautics, Inc and is updated yearly.

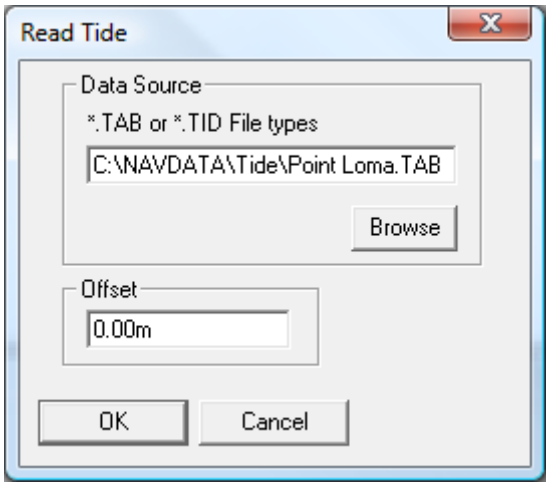
A second format file format (*.TID) is the same format as read by CARIS, a GIS application. With this file WinFrog expects only data records, no header records. This is a simple file format expected to be created by the user and the user must ensure that the tidal data is correct and for the desired station, datum, etc.

WinFrog uses linear interpolation between the data points in the file so when generating the predictions they should be spaced closely together, say every 15 minutes.

DEVICE CONFIGURATION INSTRUCTIONS

WINFROG I/O DEVICES > EDIT I/O:

To read a tide prediction file, highlight the Tide Files device in the I/O window, right-click and select Edit I/O. This opens the Read Tide dialog box as seen below.



Data Source
Use the Browse button to select the appropriate tide file.

The *.TAB tide file contains some header lines. WinFrog will display the location and coordinates found in the file, however, it will not make any assumptions as to correctness of the file loaded.

Since the *.TID file does not contain any header information WinFrog cannot display the location.

WinFrog's time must be the same as found in the file. One of the *.TAB header lines, prefixed with D, indicates the zone time used in the *.TAB file. If for some reason you do not want to change WinFrog's time to match, you then must change the times in the file to match WinFrog. This can be done using a spreadsheet. See the file format section below for more information.

Similarly with the *.TID file, the times must match the WinFrog time.

Offset
Enter an offset to be applied to the tide data contained in the file.

The offset correction can be used to adjust the tidal datum of the file to whichever datum is desired for either file format type.

The datum in the *.TAB file should be indicated on the line prefixed by W. For example:

W "Mean High Water = " 4.6 "Mean Sea Level = " 2.7 " Mean Lower Low Water = " .0 "Units = feet "

Here the datum in the file is *Mean Lower Low Water* (MLLL) and *Mean Sea Level* (MSL) is 2.7 feet above MLLW.

Another example

W "Mean High Water = " 237.3 "Mean Sea Level = " 127.7 " Chart Datum = " .0 "Units = cm "

Here the datum in the file is *Chart Datum* and *Mean Sea Level* (MSL) is 237.7cm above chart datum. In this case if you wanted the depths to be corrected to MSL you would enter 0.2377m in the offset box of the dialog.

WINFROG I/O DEVICES > CONFIGURE DEVICE:
No configuration is required at the I/O Device window level.

WINFROG VEHICLE > CONFIGURE VEHICLE DEVICES > DEVICE DATA ITEM > EDIT:
Adding the TIDE FILES device creates the TIDE data item.

Data item: TIDE, Tide File, TIDE
There are no edit or configuration options for this data item. However, you must add the **TIDE** data item to the vehicle's device list in order for the tide prediction to be made available for display in the vehicle text window, to be applied to soundings, and to be recorded in the raw files.

The tide may be displayed in the vehicle text window if enabled in the windows configuration.

In order to have the tide applied to depths assigned to the vehicle, you must turn the tide application on in the sounder's BOTTOMDEPTH data item configuration dialog. If this is done, the depth displayed in the vehicle window will be corrected for tide and the depths recorded for the vehicle in the event files (*.log and *.dat) will also be corrected for tide. Depths in the raw file are not corrected for tide.

***.TAB FILE FORMAT**
The file begins with three header lines prefixed with either L, W, or D.

The L is for location of the tide gauge that the data was predicted for.
The W is for water level information, mean high water, datum, and units.
The D is for the date and zonetime of the next day's data. The zonetime is important as WinFrog and the file must use the same epoch. This line will be repeated for each day's worth of data.
Next are the lines containing the high and low tides for the day. This line is prefixed with E.
After the highs and lows comes the predicted tides prefixed with the letter I. These lines have five fields described as follows:

Field	Data	Comment
1	I	Prefix
2	Time	This time is in days and decimal days with an epoch of 1900. WinFrog uses this time; the times in the two fields below are ignored.
3	Time	This time is in hours and decimal hours of the day.
4	Time	This time is in hours and minutes of the day.
5	Tide	Value in units indicated in header

As mentioned in the Edit I/O section above, if you need to adjust the time of the predicted tides you only need to change field 2. Convert your correction to days and add or subtract it from field 2 for each line with prefix I.

Example of the first few lines of a World Tide *.TAB file.

```
L "San Clemente                CA"   "      33ø25'N 117ø37'W"
W "Mean High Water = "     4.6 "Mean Sea Level  = "     2.7 " Mean Lower Low Water = "      .0 "Units =  feet  "
D "Wednesday  May 10,2005"  05 10 2006     38651.0  "Pacific Daylight Time     "
E   38651.29343   7.050  "07:03"       4.10  "HIGH  "
E   38651.51407  12.333  "12:20"       2.66  " LOW  "
E   38651.73422  17.617  "17:37"       4.26  "HIGH  "
I   38651.00000    .000  "00:00"       .50
I   38651.01041    .250  "00:15"       .51
```

***.TID FILE FORMAT**

Only data records are expected.
yyyy/mm/dd hh:mm:ss xxx.xx

Field	Data	Comment
1	Date	yyyy/mm/dd Four digit year, the '/' characters must be Present.
2	Time	hh:mm:ss The ':' characters must be present
3	Tide	metres