Koninklijk Nederlands
Meteorologisch Instituut
Ministerie van Infrastructuur en Waterstaat

TURBOWIN Plus
Version 4.0

Installation and User's Manual

TurboWin+ was developed by the Royal Netherlands Meteorological Institute (KNMI) and endorsed by the World Meteorological Organization (WMO) for use on Voluntary Observing Ships. The Bureau of Meteorology (Australia), Deutscher Wetterdienst (Germany), Met Office (United Kingdom), Environment Canada and U.S. National Weather Service also contributed to the continued development of TurboWin+. TurboWin is the most used marine observing software throughout the Voluntary Observing Ship (VOS) program today.

Meteorological observations taken on board ships are a vital component of the WMO Global Observing System (GOS) provided the observations are accurate and of high quality. VOS ships are a key component of GOS and in climate research. Long ago it was recognized that these observations are subject to keying errors, coding errors, calculating errors, etc... To achieve some quality control of the observations before they are used in real time, TurboWin+ contains over 200 built-in quality control checks which are applied before the observation is transmitted.

TurboWin+ is a user-friendly system that assists the observer with many menus, pictures, photos, forms, help pages, output options, and automated calculations in reporting marine observations. It also provides for the automated compilation, archiving of observations, and ease of transmission ashore to Meteorological Centers, by using Inmarsat-C or E-mail.

Note: *TW+ Versions 2.4 thorough 3.3, installation and operation are nearly identical. Key difference is additional equipment input capabilities included with TW+ 4.0*

SYSTEM REQUIREMENTS

 Minimum requirements: Vista / 7 / 8.1 / 10
 138 Mb available hard disk space
 TW+ 4.0.0 JPMS   64-bit computer (Java not Required)
 TW+ 4.0.1   32-bit computer (Java 8 or higher required)

TurboWin+ 4.0

I.   INSTALLATION

TurboWin+ 4.0   TurboWin+ must be installed on the computer's hard drive. It cannot run from the CD*. Installation may require administrator privileges to install.*

TurboWin+ Installation CD   Insert the TurboWin+ Installation CD provided by your servicing PMO in the CD ROM drive on your computer. The CD should start automatically and display the Setup Wizard screen. If the Setup Wizard does not appear:

Open **Windows Explorer**;
Select the **CD ROM** drive;
Open the **TurboWin+** folder.
Double click on **setup_turbowi n+_4_0_JPMS_64-bit.exe   (does not require Java), or**
setup_turbowin+_4_0_1_32-bit.exe (Java 8 or higher required)
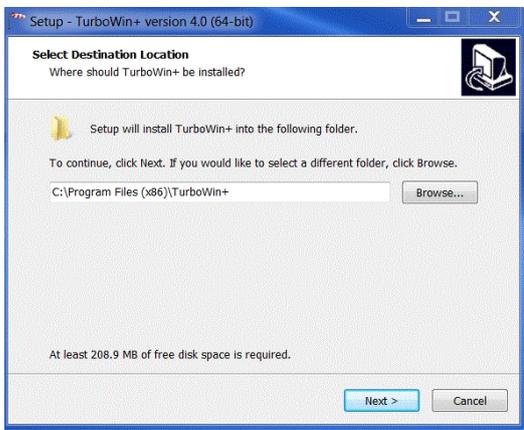
Recommend use the default location to install TurboWin+
C:\Program Files\TurboWin+   Click **Next**

Click **Next**
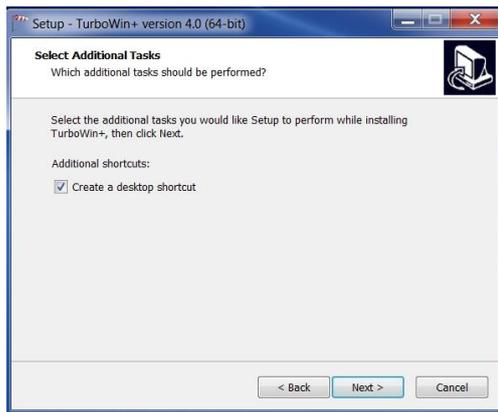
Check "Create a desktop Icon". This will place a
TurboWin+ shortcut Icon on your desktop. Click **Next**.

TurboWin+ is ready to install. Click **Install**

TurboWin+ 4.0 is now installed and ready to be configured to your particular vessel.

**When install is complete, click Finished
to start TurboWin+**

Double click the TurboWin+ Shortcut on the Desk Top to start TurboWin+.

TurboWin+ Directory

On **32-Bit** computers TurboWin+ will be installed in the following location:
C:\Program Files\TurboWin+

On **64-Bit** computers TurboWin+ will be installed in the following location:
C:\Program Files (x86)\TurboWin+

Installation Notes

1. On 32-bit computers Java 8 or higher must be installed for TurboWin+ to operate. Before installing TurboWin+ check to see if you have the required Java. For 32-bit computers check in C:\Program Files\Java. You should see a folder jre 1.8.0. These are the latest Java files required for TurboWin+ 4.0. If you do not have Java 8 or higher contact your IT department,

2. After opening TurboWin+ for the first time, you will be asked to fill out the Station Data. Once filled out, TurboWin+ will create a text file called **configuration.txt** in the Log directory where the station data is saved.

3. Once the Observer and Captain data is filled in, TurboWin+ will create a text file for each (**Observer.txt**) and (**Captain.txt**) and save them in the Log directory. This is an optional feature.

4. After the first observation is taken, TurboWin+ will create the **IMMT.txt** file in the log directory. This is a special coded archive file of all observations taken. Each time an observation is taken, the new observation will be appended to the IMMT.txt file.

5. After TurboWin+ 4.0 is installed and working properly, vessels that were using AMVERSEAS should uninstall the program. AMVERSEAS software is not WMO compliant and should not be used.

6. If there are any questions, please contact your servicing PMO. Contact information located in Appendix F.

II. SETUP / CONFIGURATION

The very first time you start TurboWin+, you will see a warning box stating:

"Ship Name Unknown (select maintenance -> Station Data)"

TurboWin+ needs to be configured first with ship's information before proceeding.
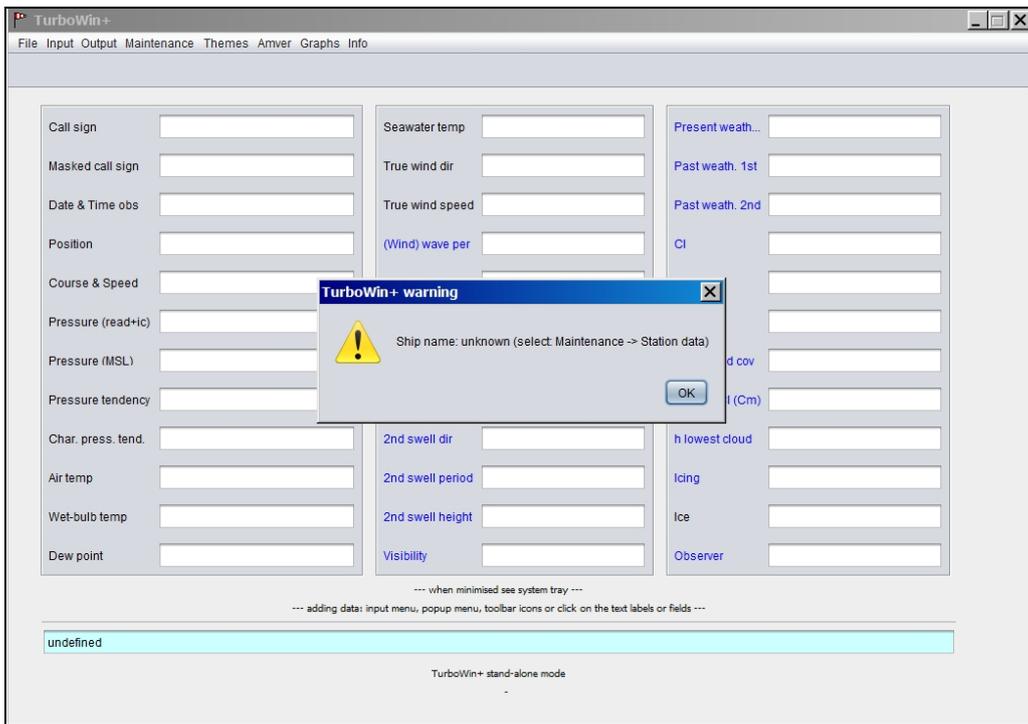
For TurboWin+ to operate properly, "**Station Data**", "**E-Mail Settings**", "**Log File Settings**", "**Obs Format Settings** " entries are required. This information has to be filled out prior to initial use, or when vessel information has changed. Entries for "Observers" and "Captains" are optional.

At the top of the Main Page, select "**Maintenance**". You will be prompted to enter a password.

JWS01   *(password)*

Maintenance

Station Data

- **Ship Data:** Input Ship Name – IMO Number – Call Sign
  - **Masked station ID:** Leave Blank. Contact your servicing PMO if your company requires call sign masking.
  - **Station ID:** Leave blank. Servicing PMO will provide input when required.
- **Recruiting Country:** Select United States. **Note**: this window is always open.
- **Temperature Metadata:**
  - Input type of Air Temp Exposure
  - Input type of Sea Water Temp Exposure
- **Wind Metadata:**
  - Select appropriate wind measuring scheme; estimated, apparent or measured true
  - Input Maximum height of Cargo above SLL in meters.   **** PERTAINS ONLY TO CONTAINER VESSELS **   All other vessels enter 0 (zero) for cargo height.**
  - Input the difference between the SLL and actual Water line in meters
    - *Positive (+)*   when the summer load line is above the water line, and
    - *Negative (-)*   if below the water line.
  - Select appropriate wind speed unit source (estimated/measured) knots or m/s (meters per second)
  - Select appropriate wind speed units display (graphs/dashboard) knots or m/s (meters per second)
  - Input average height of anemometer above the water line (WL) *only if an Automated Weather Station is installed on your ship.*

- **Air Pressure Metadata:**
    - Input height of barometer above SLL (meters)
    - Input distance of Keel to SLL (meters)
    - Does the reading indicate MSL (Mean Sea Level) pressure   **yes or no**
        - ** Yes for U.S. VOS vessels with an **Aneroid Barometer**.
        - ** No for U.S. VOS vessels with a **Mintaka Barometer**.

> **** It is <u>VITAL</u> to input accurate measurements for barometer height, distance keel to SLL, and difference of SLL to water line. Ships using an electronic barometer such as the Mintaka, these parameters are used by TurboWin+ to calculate Mean Sea Level Pressure. ****

Click OK to save. This information will be saved in the TurboWin+ Log directory as "configuration.txt" file. Recommend e-mailing the configuration.txt file to your servicing PMO. Restart TurboWin+ for changes to take effect.

Station Data

Height of Barometer above the SLL

Max Cargo Height above SLL

Summer Load Line (SLL)

Difference SLL and waterline

Bottom of Keel to SLL
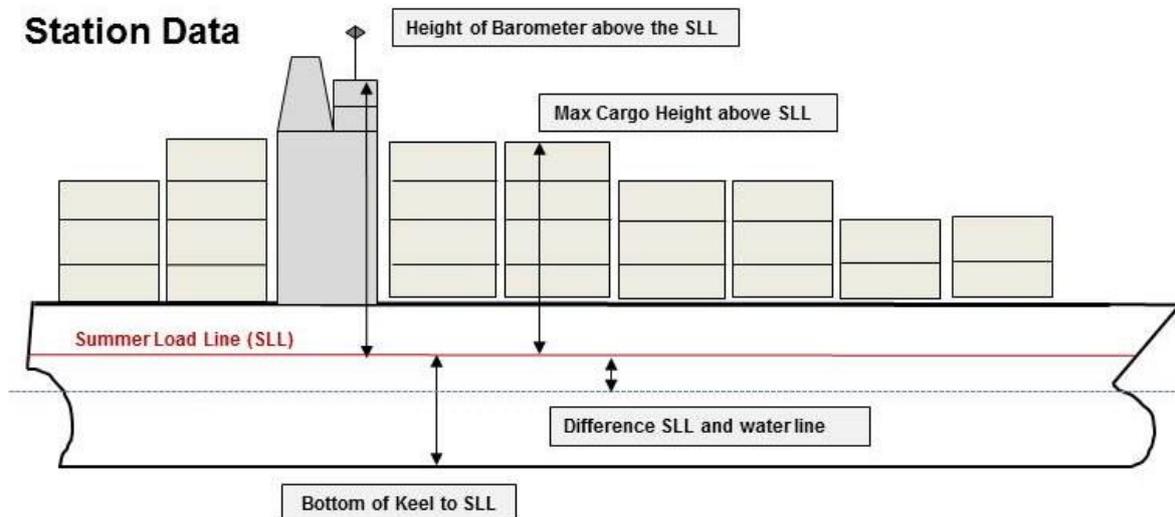
E-Mail Settings

If an E-Mail client, such as Outlook, Outlook Express or Thunderbird is already installed and configured on the computer, TurboWin+ will use the E-Mail client automatically. *If no E-Mail client exists on the computer which TurboWin+ is installed, leave all fields blank.*

- ▪ **Required for Output--> Obs by E-Mail (default)**
  - o Input Obs E-Mail address recipient: **Shipobs@noaa.gov**
  - o Input Obs E-Mail Subject: Weather Observation
  - o E-Mail address receipt and E-Mail subject **always required**
- ▪ **[SMTP HOST] - [GMAIL] - [YAHOO]** are used only with the EMOS Auto Transmit function. All should be left blank. See Appendix C for more information.
- ▪ **Required for maintenance --> Move Log Files by E-Mail**
  - o Input your servicing PMO E-Mail address. A list of PMOs and their e-mail addresses can be found in Appendix F. If you are uncertain who your servicing PMO is, contact the VOS Manager at **VOS@noaa.gov**

Click OK to save

Log File Settings
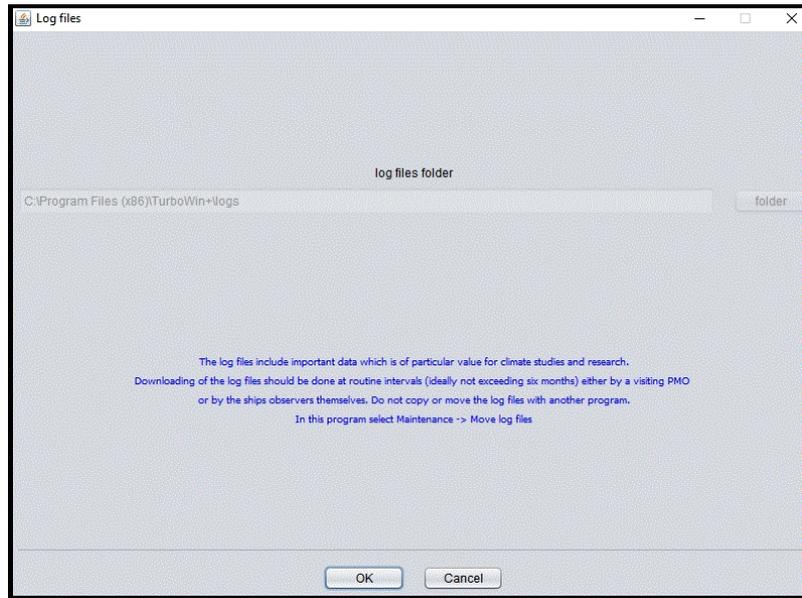
- This will automatically be filled in by TurboWin+. Verify that the Log File folder is correct. Should be C:\Program Files\TurboWin+\Logs or C:\Program Files (x86)\TurboWin+\Logs. If not contact your servicing PMO.

Click OK to save

Obs Format Settings
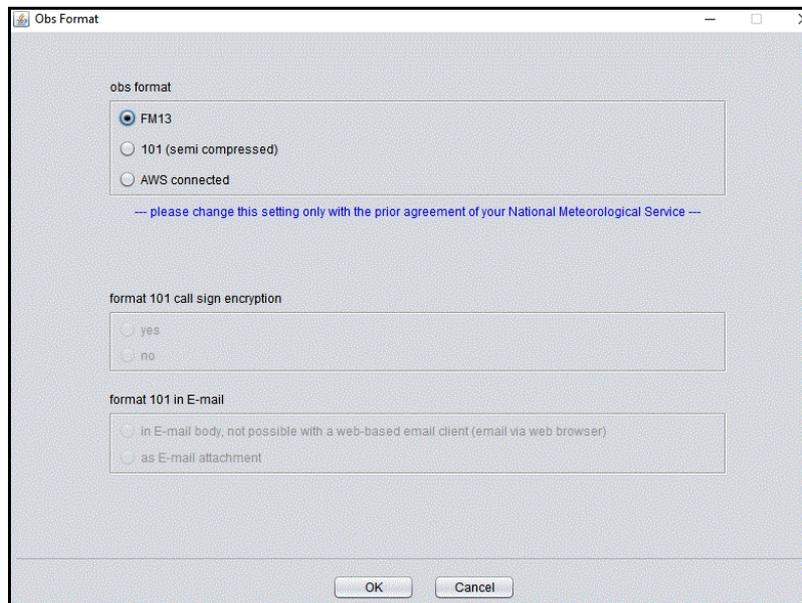
- Select **obs format   FM13**.
- At a future date your servicing PMO may request that you switch to Format 101. Simply select the "Format 101" Radio button, and Click on "OK". Your servicing PMO will provide additional guidance for Format 101.

Click OK to save

Serial/USB or Lan Connection Settings

- Serial/USB or LAN Connection Settings page is for configuring TW+ to accept input from digital barometers, Mintaka, Vaisala PTBs, OMC-140 AWS and the European Automated Weather System.
- Ship's without an AWS or digital barometer select **None**
- Select **None** for GPS connected. Leave GPS Port settings blank.
- For U.S. VOS ships with a Mintaka Duo, Mintaka Star, or StarX refer to Appendix C.

Click OK to save

Observer Settings
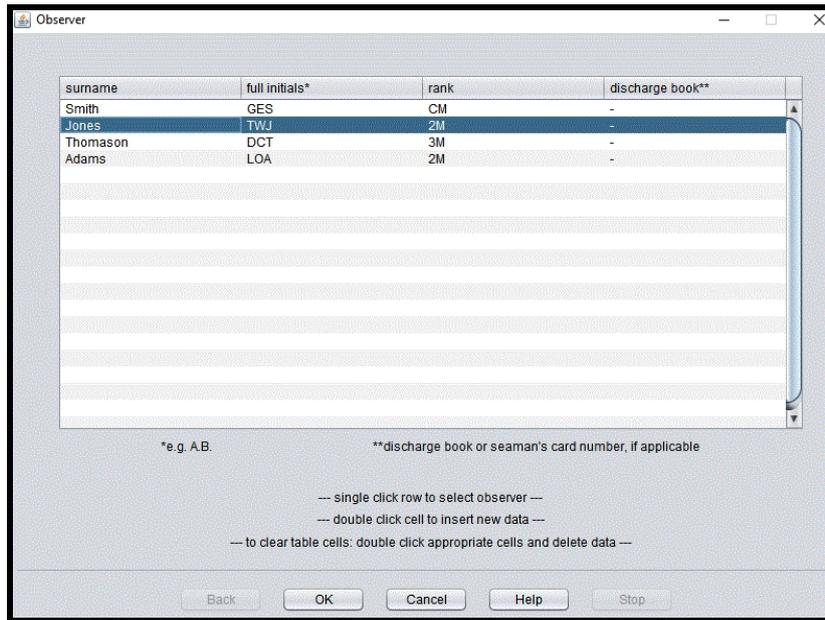
- Optional for U.S. VOS ships
- Several VOS recruiting countries use Observer names (and additional data) for their reward system.
- For more information check with your servicing PMO.

Click OK to save

Captain Settings
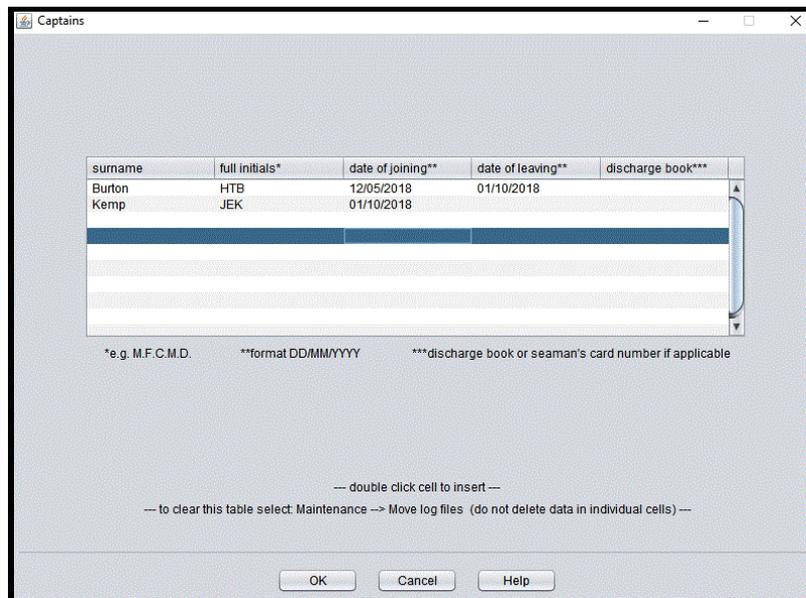
- Optional for U.S. VOS ships
- As with Observers, Captain information is used for identify individuals for awards. For more information check with your PMO.

Click OK to save

Move Log Files to (USB) Disk / Move Log Files by E-Mail

Log files include additional important data of particular value for climate studies and research. Downloading of log files should be done at routine intervals, ideally not exceeding 6 months, either by the servicing PMO, or by the ships observers themselves when requested.

- **Immt log** (immt.txt)

  A file containing all recorded observations, stored in an international (WMO adopted) format. This format is specially created for the international exchange of data for Marine Research and Climatological purposes.

- **Station log** (station.txt)

  A file with station specific data needed to compile an observation (e.g. station type, code form, message form)

- **Observer log** (observer.txt)

  A file with the names and additional data of the observers. Several recruiting countries use these names for a reward system.

- **Captain log** (captain.txt)

  A file with the names and additional data of the Captains. Several recruiting countries use these names for a reward system

See section IV for specific information and requirements on Log File Maintenance.

III. ADDITIONAL FEATURES

Themes
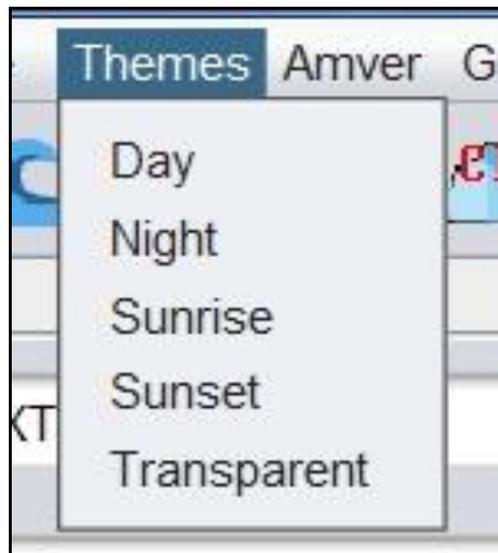
- Option of 5 different computer screen Themes available. Default theme is Day.

AMVER
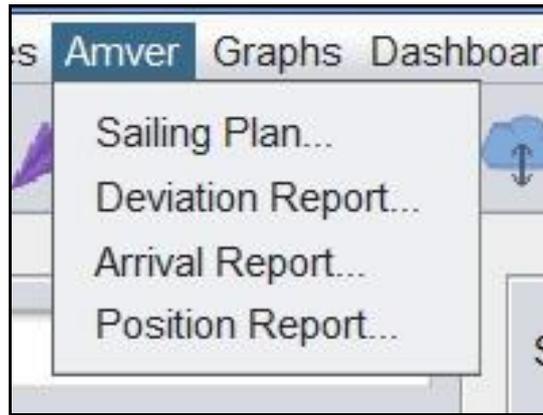
- See AMVER Reporting section for specific information and use.

GRAPHS
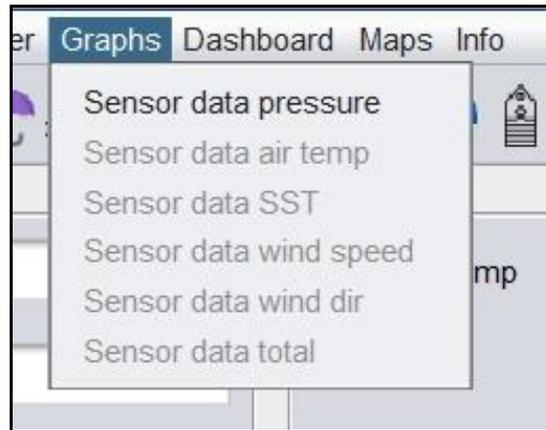
- Vessels outfitted with a Mintaka Duo/Star or Vaisala PTB barometers, a graphical display of pressure over time is available.
- Vessels outfitted with a Mintaka StarX a graphical display of pressure and air temperature over time is available.
- Vessels with the European Automated Weather System can also display, air temp, SST, Wind Speed and Wind Direction.
- Graphical display by 7 day or daily mode.
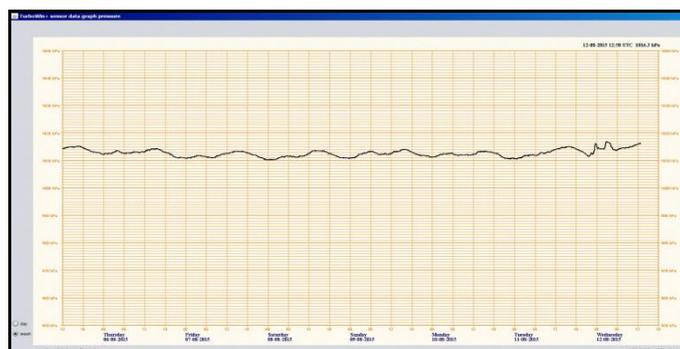
Example 7-day pressure trace (Mintaka)

DASHBOARD

Latest Obs - Display details from the latest observation. Observation less than 12 hours old displayed with a Green background color. More than 12 hours but less than 24 with yellow background. Observations older than 24 hours with a red background.
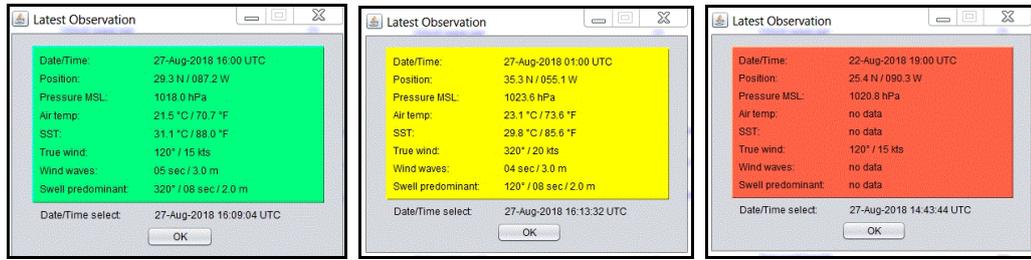
Barometer - Displays pressure from last observation taken, or the current pressure if a digital barometer is installed.
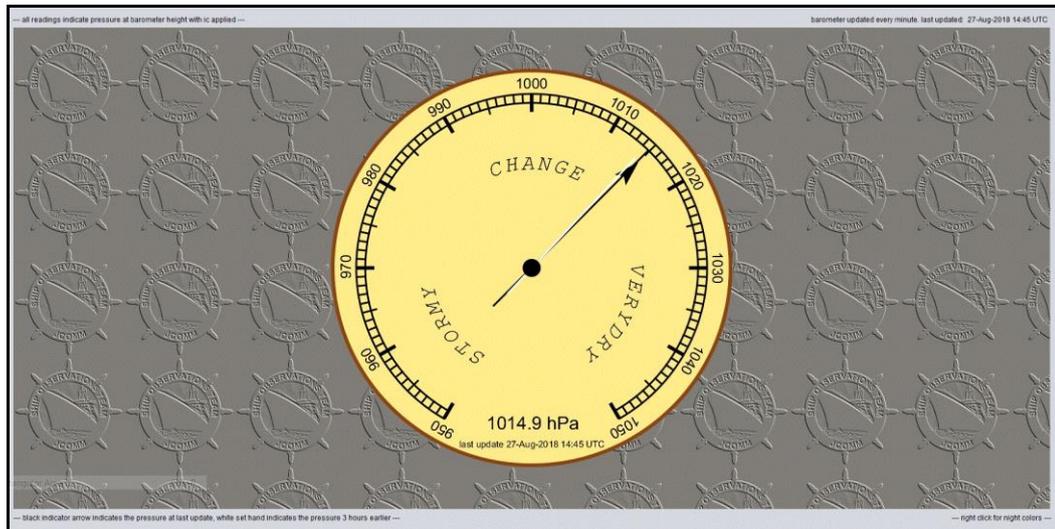
MAPS
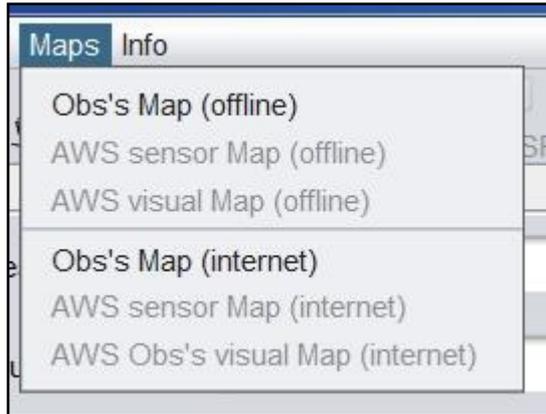
Ob's Map (offline) - Ship observations are plotted and displayed on a world map that is included in TurboWin+. Observations over the past 3 months are displayed.
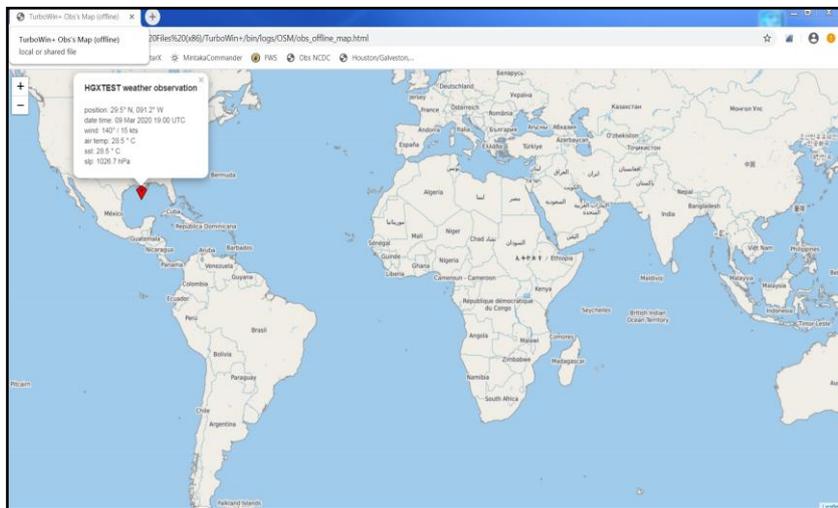
Ob's Map (internet) - Ships with a good Internet connection can display their observation positions on a more scalable map (zoom in/out) from KNMI. Observations over the past 3 months are displayed.

INFO

Info

Statistics (internet)

Calculator...

barometer comparison...

System log

send System logs

About...

Statistics (internet) - Ships with an Internet connection can check Quality Control of their observations. Clicking on **Statistics** will take you to the MetroFrance Marine Observation Monitoring web site. There you can view your QC on Pressure, Temperature, Wind Speed & Direction, Humidity, SST and Wave heights. Also available is a year-by-year breakdown of all observations received from your vessel since 2002.

METEO FRANCE
Toujours un temps d'avance

EUMETNET

WDD3826 : VOS CONTROL PANEL

Name : WASHINGTON EXPRESS

Call sign : WDD3826
Container ship
    recruited by United States of America
    as VOSClim-VOS Climate Ship
Length : 243 m   Breadth : 32 m
Feeboard : 8 m

First report (1):   2017/04/09
Last report (1):   2017/06/14
Last position: 37.7N - 50.5W

37°42'00.0"N 50°30'00.0"W ★
View larger map

©2017 Google - Map data ©2017   Terms of Use

Last Obs received

Date : 2017/06/14 12:00
Pressure : 1019.3 hPa
Air Temp : 20.5 °C
Humidity : 74.0 %
Sea Temp : 22.00 °C
Wind Speed : 7.70 m/s
Wind Dir : 210.0 °
Wave Height : 3.50 m
Wave period : 2.0 s

Generate automatically The Observation Monitoring Report for this VOS (PDF - 600 Ko)
(Complete report : Observations Counters, Monthly Statistics and Quality of Observations available)

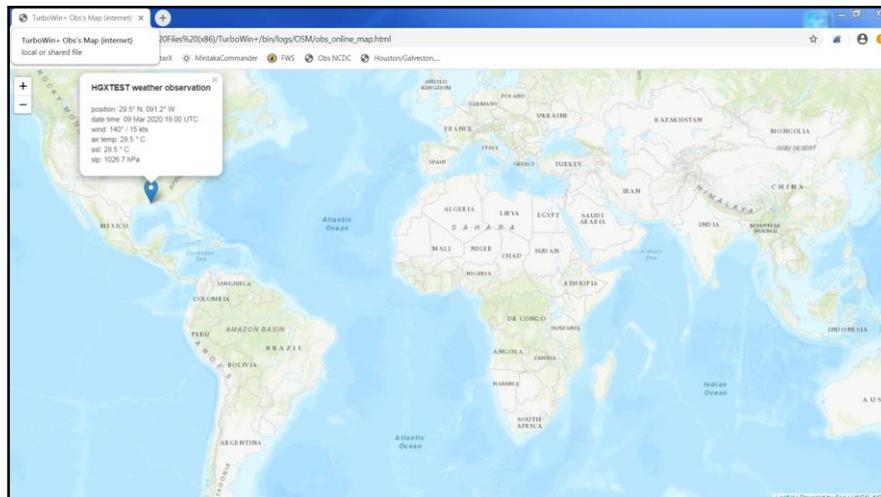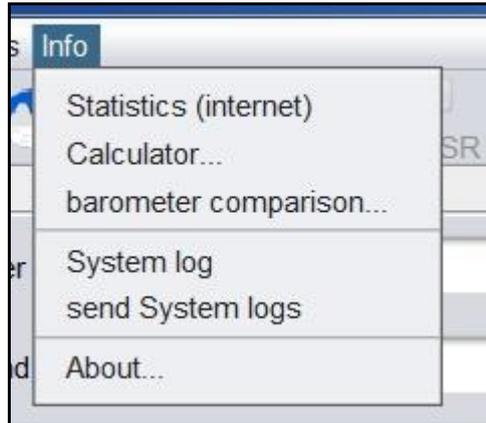| MONTHLY STATISTICS	DATA PLOTS	QUALITY CONTROLS	QC PLOTS (UKMO)	OBS COUNTERS	OTHER LINKS
Air Pressure	Air Pressure	Air Pressure (diff.)	Air Pressure (4)	Nb of obs. in 2002	Google
Air Temperature	Air Temperature	Air Temperature (diff.)	Air Temperature (4)	Nb of obs. in 2003	
Wind Direction	Wind Direction	Wind Direction (diff.)	Wind Direction (4)	Nb of obs. in 2004	Most recent data (5)
Wind Vector	Wind Speed	Wind Speed (ratio)	Wind Speed (4)	Nb of obs. in 2005	Most recent positions(5)
Humidity	Wind Speed	Wind Speed corrected	Humidity (4)	Nb of obs. in 2006	
Wave Height	corrected	Humidity (ratio)	SST (4)	Nb of obs. in 2007	Nearest buoys measuring :
Wave Period	Humidity	Sea Temp. (diff.)		Nb of obs. in 2008	Pressure
Wave Direction	Sea Temp.	Waves height (ratio)	Satellite comparisons (3)	Nb of obs. in 2009	Air Temp
Delay of insertion	Waves height	Waves period (ratio)	SST (past month)	Nb of obs. in 2010	Humidity
Sea Temperature (2)	Waves period	Waves direction (diff.)	SST (current month)	Nb of obs. in 2011	Sea Temp
	Waves direction			Nb of obs. in 2012	Wind Speed
	Insertion delay			Nb of obs. in 2013	Wind Dir
				Nb of obs. in 2014	Wave Height
				Nb of obs. in 2015	Wave period
				Nb of obs. in 2016	
				Nb of obs. in 2017	
				Nb of obs. since 2002	

Calculator - Simple meteorological calculator

Barometer Comparison - U.S. VOS ships should not use this for barometer comparison. If you feel a barometer comparison is needed, contact you servicing PMO who can provide a remote comparison.

System Log - Running log file of TurboWin+ functions used for trouble shooting purposes.

Send System Log - Provides a way to send the System Logs to your servicing PMO as necessary.

About - Displays the TurboWin+ version and a link to the KNMI TurboWin web site.

IV. STARTING TURBOWIN+ 4.0

Click on the TurboWin+ desktop icon. The first screen to appear will ask you if the date and time of the observation is correct. If i**ncorrect** click no, TurboWin+ will ask you to input the correct time (UTC) and date. ****Ensure the UTC observation time is correct for the observation being recorded ****
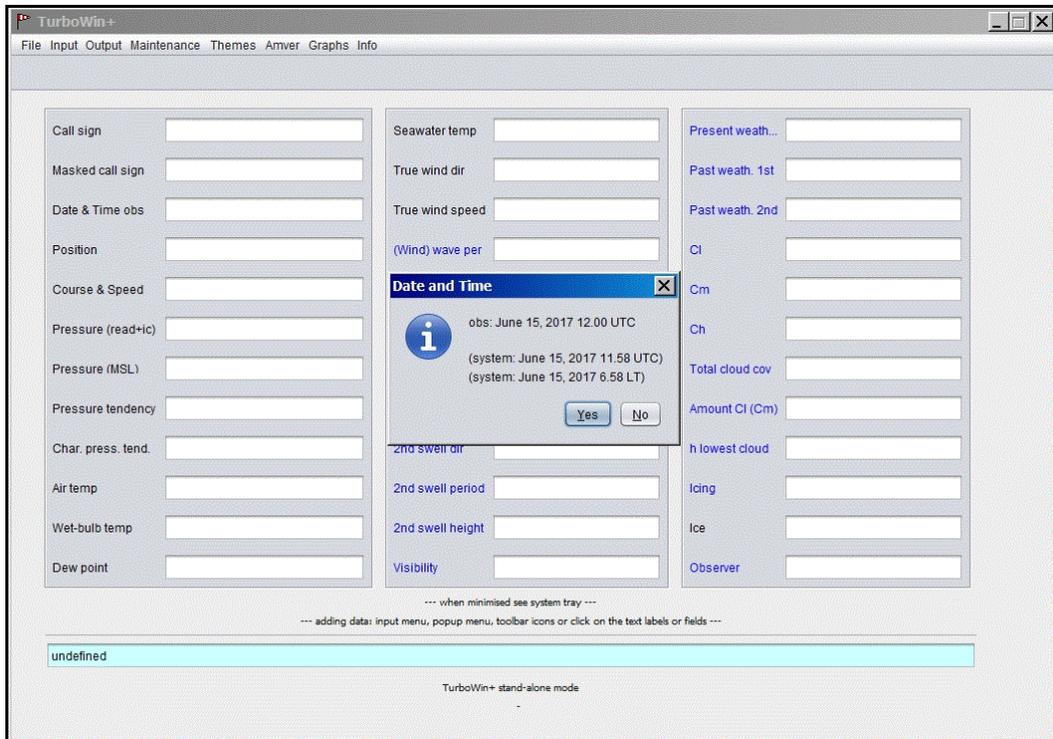
Additionally, if a Mintaka Digital Barometer is attached, TW+ will search and then specify which Comm Port is used. See Appendix A for more information.

Taking an Observation

Select **INPUT – Next Form Automation** Once a screen is filled out, TurboWin+ will automatically go to the next input screen. Otherwise you will have to click on each individual input Icon to move from screen to screen. **You can also select** Next Form Automation by clicking on the icon
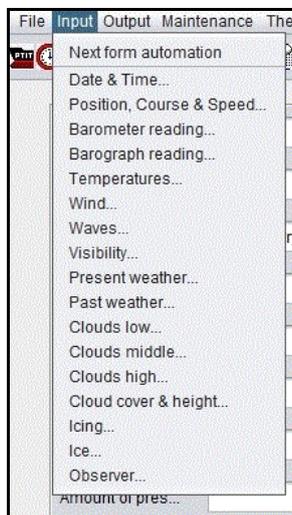
Individual Screen Input Icons
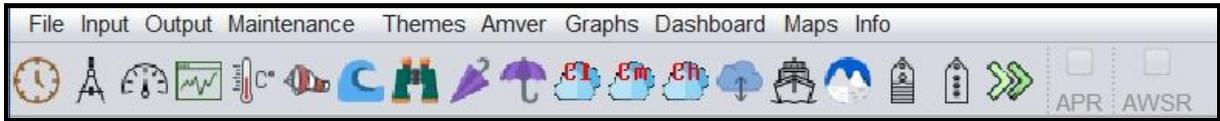
Date/Time			Clouds Low
Position, Course & Speed			Clouds Middle
Barometer Reading			Clouds High
Barograph Reading			Cloud Cover & Height
Temperature			Icing
Wind			Ice
Waves			Observer
Visibility			Captain
Present Weather			Next Form Automation
Past Weather			

Clicking on an Icon will take you to the appropriate input screen.

Help Files

Help button located at the bottom of each input screen to provide additional information as needed. Clicking the Help button will open your web browser to view help files.

Observation Input Screens

Position, Course & Speed

- Ship's outfitted with a Mintaka Star Barometer, Lat/Long, Course & Speed will automatically be filled in.
- Ships with an Internet connection, clicking on plot position will display the ships position on a map.

Barometer Reading

- Enter hPa to the nearest tenth (0.1 hPa).
- **Instrument correction** only if barometer cannot be adjusted. Check with your servicing PMO if an instrument correction is required. Otherwise input 0 . Once an instrument correction value is entered, that value will remain until changed.
- Current deepest draft will be grayed out when TurboWin+ is configured for Mean Sea Level pressure.
- Ships configured to Station Pressure, enter the draft at the time of observation.

- Ships outfitted with a Mintaka Duo or Star barometer, pressure reading will automatically be filled in.

Barograph Reading
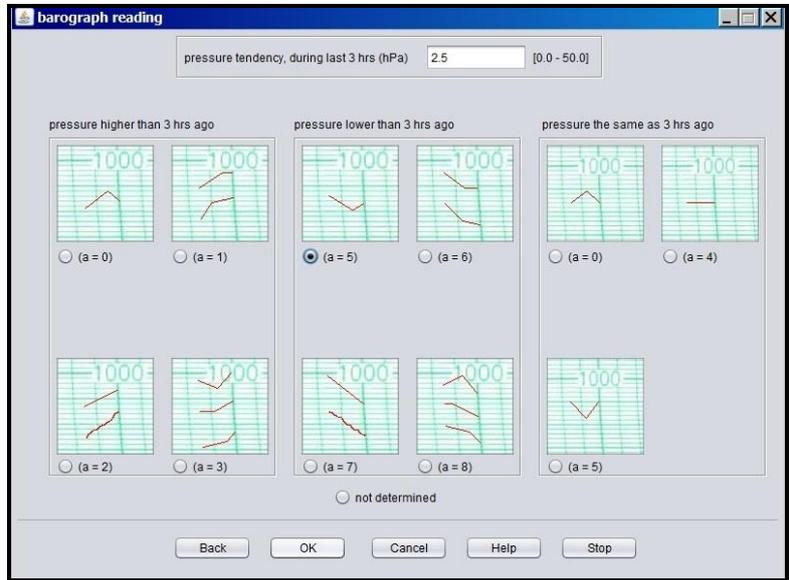
- Input 3-hour pressure change and tendency to the nearest tenth (0.1 hPa).
- Only for ships outfitted with a marine barograph or a digital barometer/barograph that can display pressure tendency.
- Ships that do not have a barograph, select "not determined"
- Ships outfitted with a Mintaka Duo or Star barometer, pressure tendency will automatically be filled in.

Temperatures
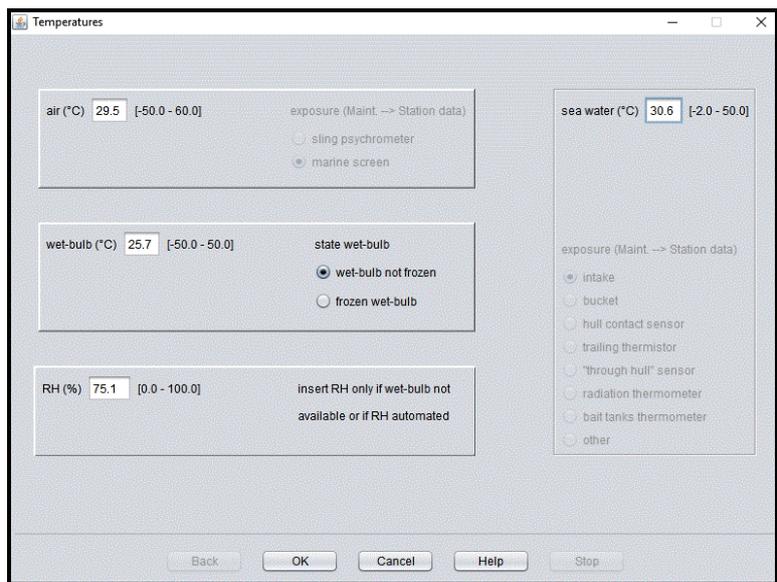
- Degrees Celsius to the nearest tenth (0.1 °C)
- Ships outfitted with a Mintaka StarX the air temp, wet bulb and RH will automatically be filled in.
- For SST, ships with more than one intake, use the intake reading closes to the bow.

Wind Speed & Direction

** Wind Speed and Direction averaged over a 5-minute period **

- If your ship Wind Indicator measures **TRUE WIND SPEED AND DIRECTION**, input wind speed and direction in the top two boxes.
  *** Ship's ground course, ship's ground speed and the ship's heading at the time the wind reading was taken is optional, but is <u>REQUESTED</u> for statistical and numerical modeling purposes. This additional information is important to our forecasting and climate models.

- If your ship Wind Indicator measures **APPARENT WIND SPEED AND DIRECTION**, input ship's ground course, ship's ground speed and the ship's heading at the time the wind reading was taken. TurboWin+ will calculate the True Wind for the observation. Wind speed and direction should be observed over a 5-minute period, and then averaged. It is not an instantaneous reading.

- **ESTIMATED TRUE WIND SPEED AND DIRECTION** will normally be based upon the visual appearance of the surface of the sea referenced by the Beaufort Scale. See Observing Handbook No.1 for more information. Input estimated wind speed and direction in the top two boxes.

- **Max height deck cargo above the summer load line (meters)**. This information is taken from the Station Data / Wind Metadata page previously filled out. If max cargo height is different at the time of the observation, input correct height. This only pertains to Container vessels. All other vessels input zero (0).

- **Difference between the summer load line and water line (meters**). This information is taken from the Station Data / Wind Metadata page previously filled out. If the distance between the summer load line and water line at the time of observation is different, input the correct height. This primarily occurs on vessels with large draft changes.
    Positive (+)   when the Summer Load Line is above the water line, and
            Negative (-)   if below the water line.

Wind Waves

- Input wave period in seconds
- Input height is in meters. Conversion table for Meters to Feet located on right side of screen.
- Beaufort (BF) Force Wind scale located on left side of screen.
- For more information on reporting Waves, refer to the NWS Observing Handbook No. 1

Swell Waves

- Report true direction in tenths of a degree from which the swell waves are coming from.
- Input height is in meters. Conversion table for Meters to Feet located on right side of screen.
- For more information on reporting Swells, refer to the NWS Observing Handbook No. 1

Visibility

- If the reported visibility is below 5 nm, then you **MUST REPORT** some type of present weather which is obscuring the visibility.
- When the visibility is not uniform in all directions, determine prevailing visibility by dividing the horizon circle into sectors of visibility. Estimate the highest visibility common to one half or more of the horizon circle. Refer to NWS Observing Handbook No. 1 for more information.

Present Weather
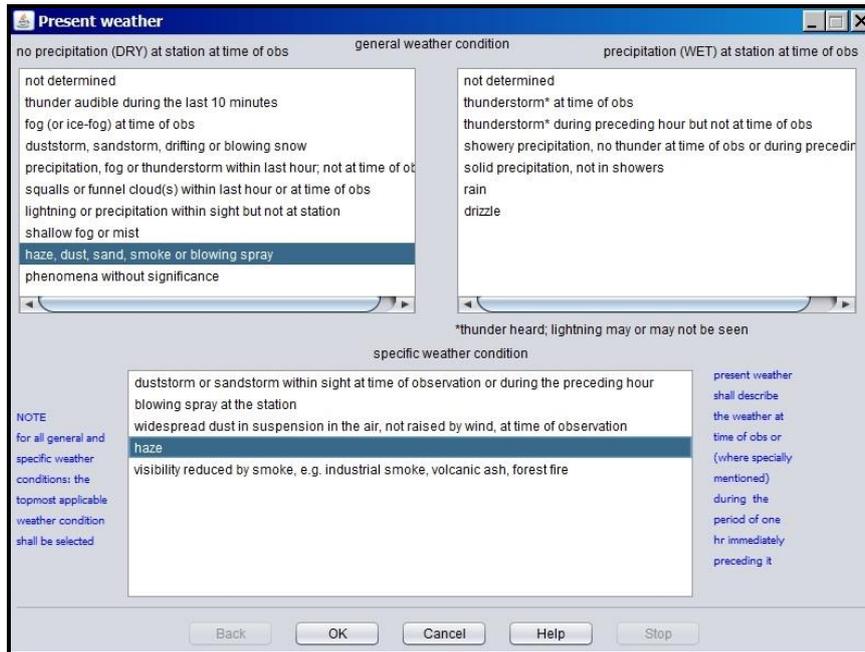
- For more information on reporting Present Weather, refer to the NWS Observing Handbook No. 1

Past Weather
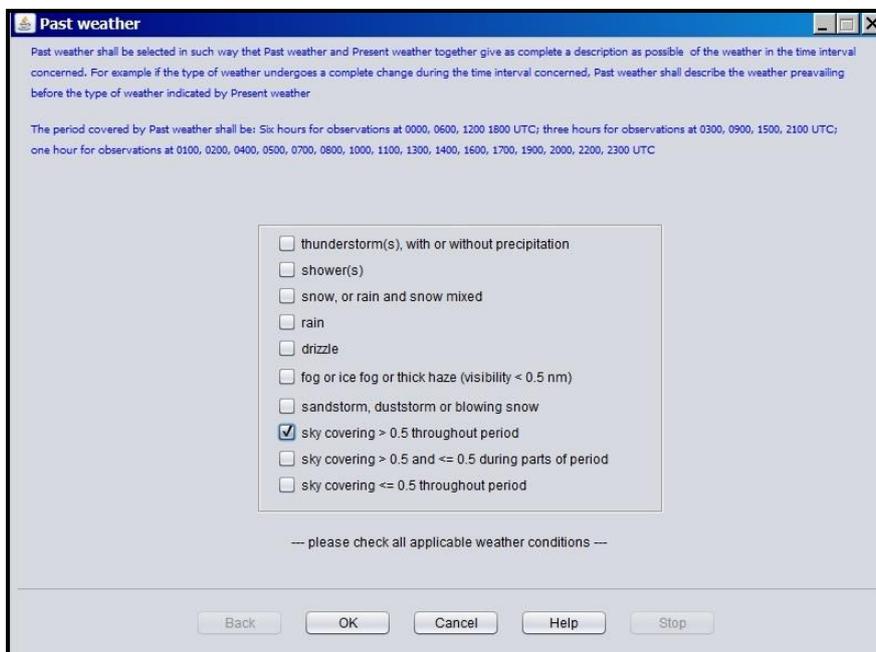
- For more information on reporting Past Weather, refer to the NWS Observing Handbook No. 1

Clouds – Low	Height 0 – 6,500 FT 0 – 2 KM
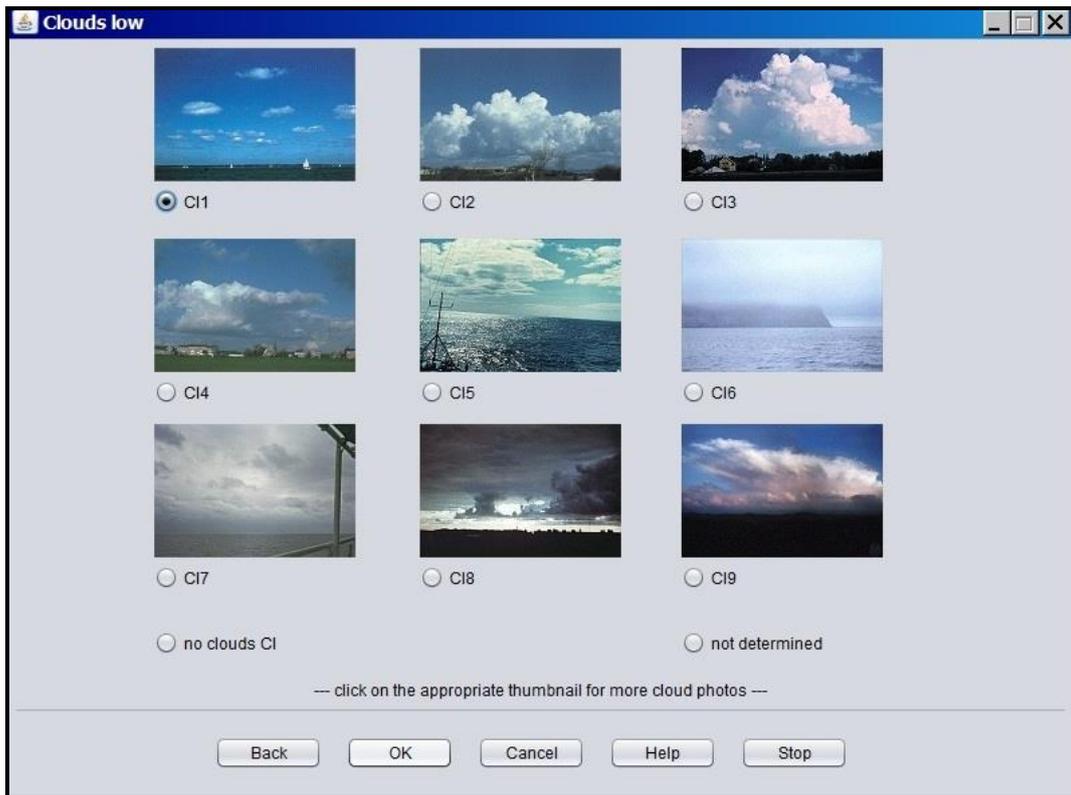
- If more than one type of Low Clouds is present, the order of priority for reporting is 9, 3, 4, 8, 2
- Type 1, 5, 6, 7 are of equal priority. If two or more are present, report the type with the greatest coverage.
- As a rough guide, heights of different types of Low Clouds may be expected to be between the following:

  Low Clouds (Cl)

  Stratus: usually below 2,000 Ft (600 m) and sometimes nearly down to the surface.
  Cumulonimbus: 2,000 – 5,000 Ft (600 - 1500 m)
  Stratocumulus: 1,500 – 4,500 Ft (450 - 1350 m)
  Cumulus: 1,500 – 5,000 Ft (450 - 1500 m)

- These limits tend to be considerably higher in low latitudes.
- See Help file for detailed ddescription of each Low Clouds.
- For more information on reporting Clouds refer to the NWS Observing Handbook No. 1

Clouds – Middle   **Height   6,500 - 23,000 FT   2 – 7 KM**
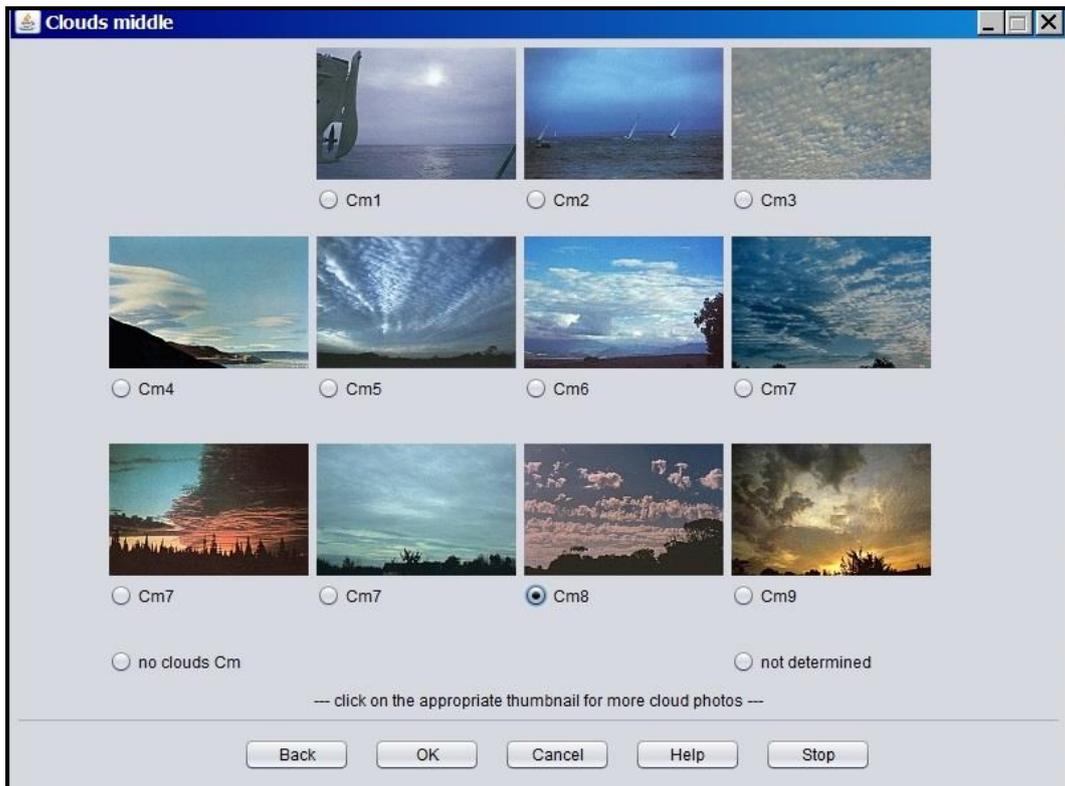
- If more than one type of Middle Clouds is present, the order of priority for reporting is 9, 8, 7, 6, 5, 4, 3, 2, 1
- As a rough guide, heights of different types of Middle Clouds may be expected to be between the following:

    Middle Clouds (Cm)

    Nimbostratus: 500 – 6,500 ft (150 - 2000 m)   usually below 2,000 Ft (600 m) in moderate rain or snow.

    Altostratus & Altocumulus: 6,500 – 23,000 Ft (2000 - 7000 m).

- These limits tend to be considerably higher in low latitudes.
- See Help file for detailed description of each Middle Clouds.
- For more information on reporting Clouds refer to the NWS Observing Handbook No. 1.

Clouds – High   **Height   16,000 – 50,000 FT   5 – 15 KM**
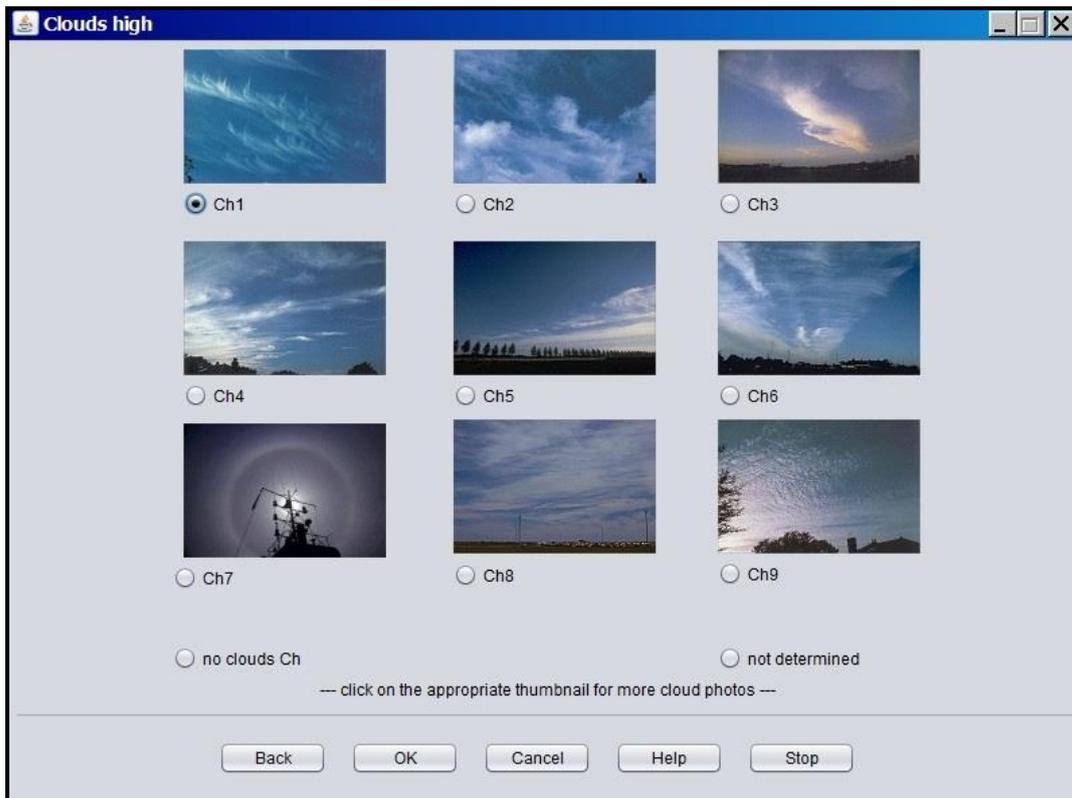
- If more than one type of High Clouds is present, the order of priority for reporting is 9, 7, 8, 6, 5, 4, 3, 1, 2
- As a rough guide, heights of **High Clouds (Ch)** are usually above 16,000 Ft (5000 m), and tend to be considerably higher in low latitudes.
- See Help file for detailed description of each High Cloud.
- For more information on reporting Clouds refer to the NWS Observing Handbook No. 1

Total Cloud Cover	Amount of Cl (Cm) and Height of Base of Lowest Cloud

- TurboWin+ will automatically compute the base of the lowest cloud height based on the type of cloud classification, latitude, air temperature, wet-bulb temperature and present weather reported. This can be changed by checking another height.
- For more information on reporting Cloud Amounts, refer to the NWS Observing Handbook No. 1

Observer

- If observer is not listed, click on next blank line. Fill in Surname, full initials and Rank.
- This page is "Optional"

Once the observation is complete, you will be returned to the main page.
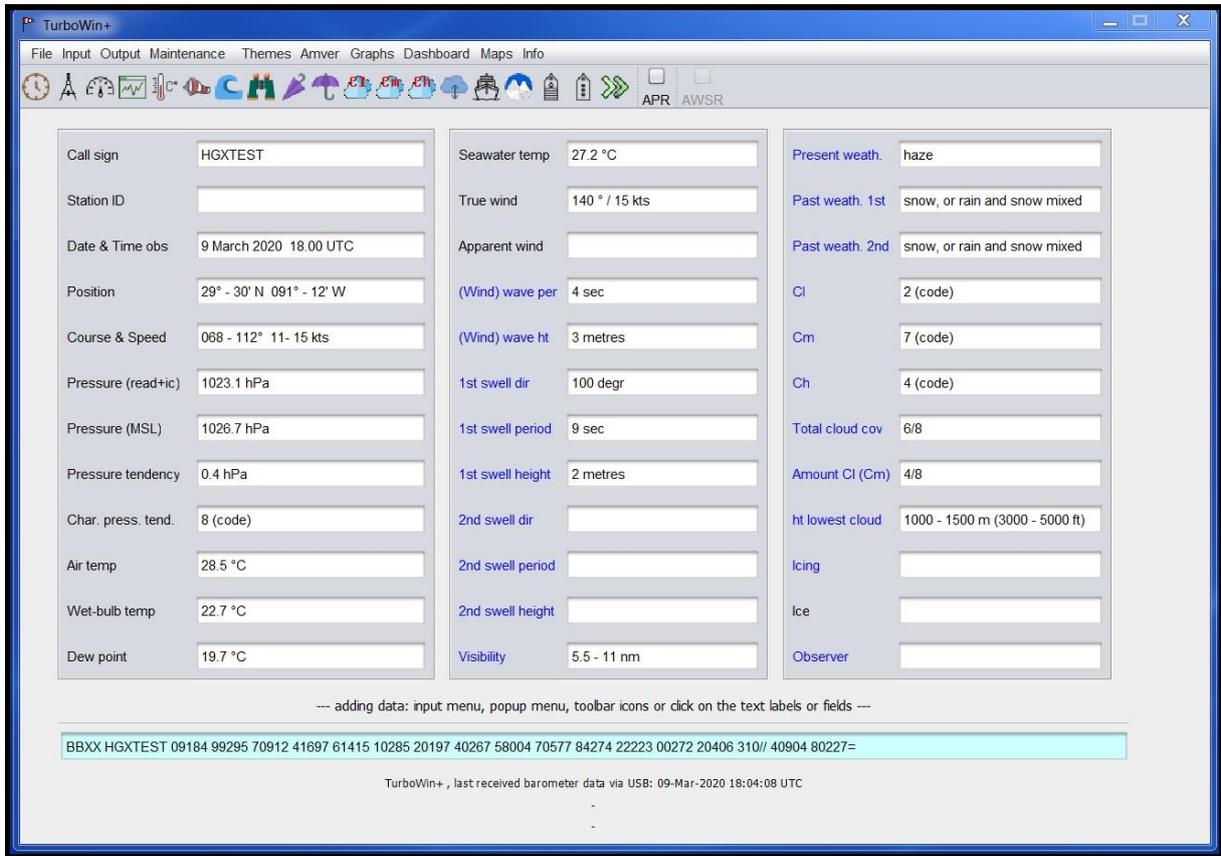
- The coded BBXX message (FM13) is shown at the bottom of the screen.

- You can go back to any input screen by clicking on the individual weather element.

- If ICE is observed, click on Ice icon to open up Ice Reporting Screens.

- If ICING is observed, click on the Icing icon to open up Icing Reporting Screens.

- For more information on reporting ICE or ICING, refer to the NWS Observing Handbook No. 1

V. TRANSMITTING OBSERVATION

E-MAIL

Click OUTPUT – **Obs by E-Mail (default)**
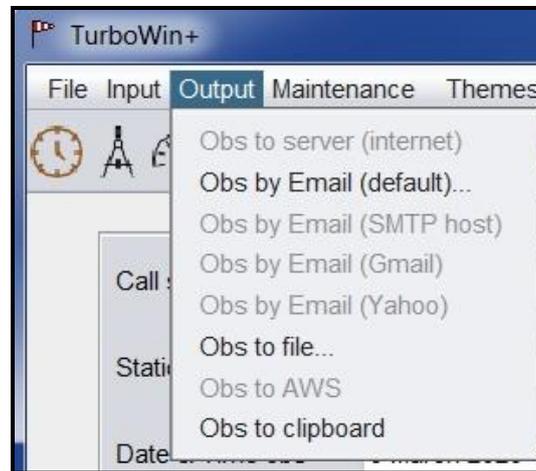
1. If an E-Mail client, such as Outlook, Outlook Express or Thunderbird is installed on the computer, TurboWin+ will use the E-Mail client automatically.
    o   Select Obs by E-Mail (default)
    o   E-Mail will open up with the observation (BBXX) in the body of the E-Mail, addressed to shipobs@noaa.gov
    o   Verify E-mail address: **Shipobs@noaa.gov**
    o   **If correct, send E-Mail.**

2. If TurboWin+ does not recognize your E-mail client
    o   Select **Obs to Clipboard**. This will copy your observation to the computer clipboard.
    o   Open up your e-mail client, and then paste the observation (BBXX) into the body of the e-mail.
    o   Address e-mail to   **Shipobs@noaa.gov**
    o   **If correct, send E-Mail.**

3. If your E-mail client is located on another computer
    o   Select **Obs to File**. A Save dialog box will appear asking where you want the file to be saved and the file name. *** Recommend you always save the observation as** **met.txt**   *in the same location each time. Do not rename the file. This way the old observation will be overwritten each time.***
    o   Load disk or thumb drive containing the met.txt file on the computer with your E-mail client.
    o   Open the **met.txt** file. Highlight the BBXX observation, right click and select copy. ** Ensure all characters in observation are highlighted from **BBXX   ….. ….. ….. =**. Any dropped characters will cause the observation to fail.
    o   Open up your e-mail client, and then paste the BBXX observation into the body of the e-mail. *** Do not send the observation as an attachment. ***
    o   Address e-mail to   **Shipobs@noaa.gov**
    o   **If correct, send E-Mail.**

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Click OUTPUT - **Obs to File**
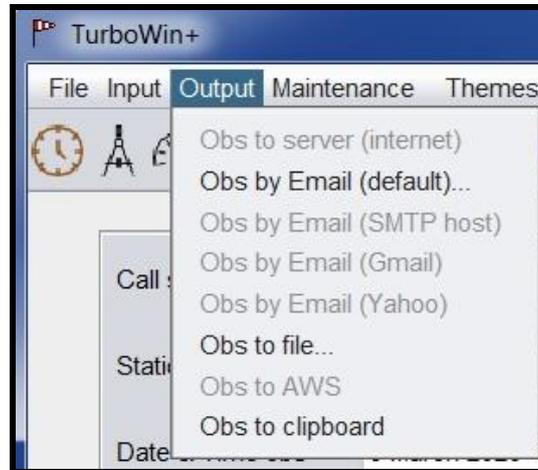
- A Save dialog box will appear asking where you want the file to be saved and the file name.
- In manual mode Email output option will only be available (not grayed out) if the required settings for that specific option are made before in the Maintenance/Email settings page.
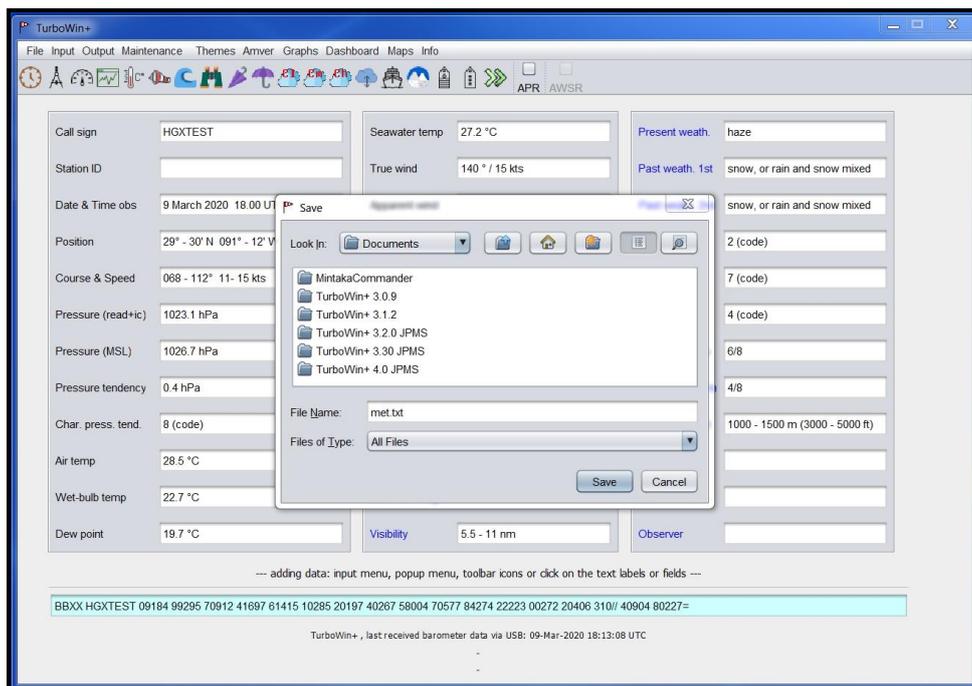
- Save the observation on the appropriate media (Floppy Disk – USB Thumb drive – Hard Drive - SD Card) to transfer the coded observation to your Sat-C terminal.
- *** Recommend you always save the observation as met.txt in the same location each time. Do not rename the file. This way the old observation will be overwritten each time.*
- The method of including the content of **met.txt** in a Sat-C message may vary between different makes of Inmarsat C terminals. Follow your Sat-C instructions. Transmit the observation using Special Access Code (SAC) **41** to the appropriate LES.
- Your servicing PMO will provide Sat-C Code **41** transmission instructions. See Appendix D.
- Ships will not bear the cost of transmitting weather observations by Special Access Code (SAC) 41.

Inmarsat-C Land Earth Stations (LES)
Accepting Code 41 messages

Satellite	SAC	Operator	Station Name	CCCC	LES ID	Costs incurred by	Country	Remark
AOR-E	41	Stratos	Goonhilly	EGRR	102	Metoffice	United Kingdom	
AOR-E	41	COMSAT	Southbury	KWBC	104	NOAA	USA	
AOR-E	41	Stratos	Station 12	EHDB	112	KNMI	Netherlands	
AOR-E	41	Otesat	Thermopylae	LGAT	120	HNMS	Greece	
AOR-E	41	Airbus Astrium	Aussaguel	LFPW	121	France	France	
AOR-W	41	Stratos	Goonhilly	EGRR	002	Metoffice	United Kingdom	
AOR-W	41	COMSAT	Southbury	KWBC	004	NOAA	USA	
AOR-W	41	Stratos	Station 12	EHDB	012	KNMI	Netherlands	
IOR	41	KDDI	Yamagushi	RJTD	303	JMA	Japan	
IOR	41	COMSAT	Eik (Oslo)	KWBC	304	NOAA	USA	
IOR	41	Otesat	Thermopylae	LGAT	305	HNMS	Greece	
IOR	41	Tata Communications	Pune	DEMS	306	IMD	India	Accepted if reported from within Metarea VIII (N) only
IOR	41	Stratos	Station 12	EHDB	312	KNMI	Netherlands	
IOR	1241	Stratos	Station 12	AMMC	312	BOM	Australia	
IOR	41	Airbus Astrium	Aussaguel	LFPW	321	France	France	
IOR	141	Singapore Telecom	Goonhilly	WSSS	302	NEA	Singapore	
POR	41	KDDI	Yamaguchi	RJTD	203	JMA	Japan	
POR	41	COMSAT	Santa Paula	KWBC	204	NOAA	USA	
POR	141	Singapore Telecom	Goonhilly	WSSS	202	NEA	Singapore	
POR	1241	Stratos	Station 12	AMMC	212	BOM	Australia	
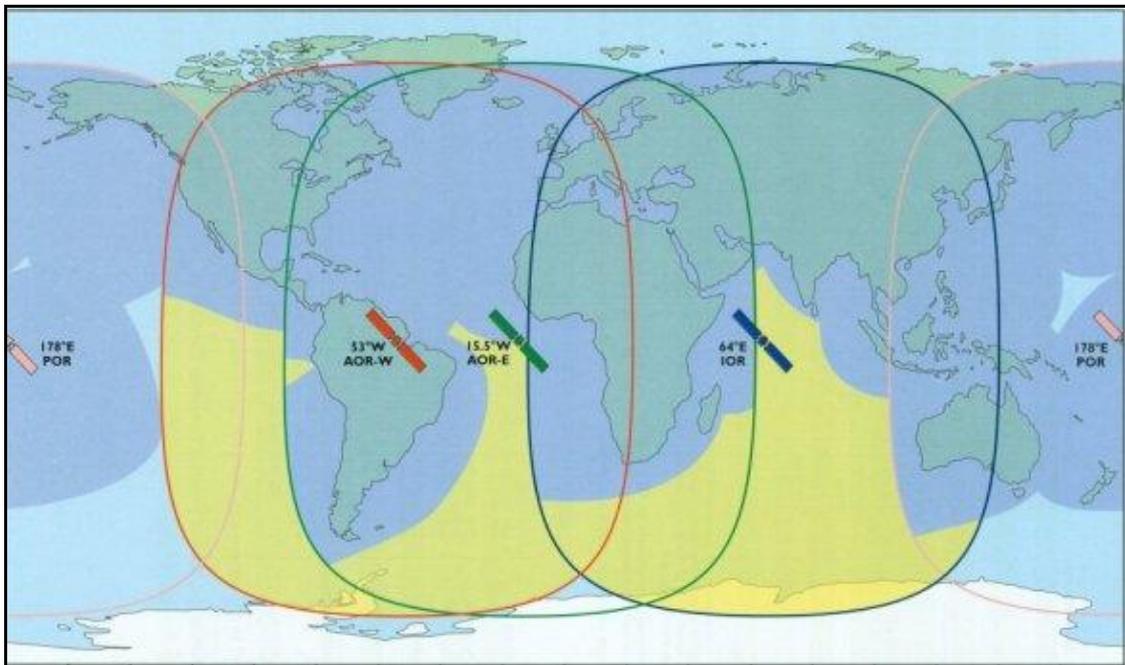
After the Observation Is Transmitted

- After transmitting the observation, it's not necessary to close TurboWin+. All parameters will be automatically reset. You can either minimize TurboWin+ or close (exit) the program.

- If TurboWin+ is minimized, you will see the TurboWin+ icon in the system tray (　　　). Right click on the icon to maximize or exit TurboWin+.

- Ships with the digital Mintaka barometer should not close TurboWin+, but minimize TurboWin+ instead. As long as TurboWin+ is open, pressure and/or temperature inputs will continue to be ingested every minute and plotted on the pressure trace every 5 minutes. This replaces the paper barographs. When TurboWin+ is shut down, inputs stop.

VI. LOG FILE MAINTENANCE

TurboWin+ Log Files consist of:

IMMT.txt	International Marine Meteorological Tape (Observational data)
Captain.txt	Captains names, initials and dates
Observer.txt	Observers names, initials and dates

IMMT

All observations taken are archived in a special WMO International Marine Meteorological Tape (IMMT) format. Observations are appended sequentially into the IMMT file and augmented with extra groups containing additional observational parameters, quality control checks, and specific ship characteristics. This information is of particular value for climate studies and research.

Every 3 months TurboWin+ Log Files should be downloaded by the PMO or by the ship's observer when requested. They are then sent to the National Climatic Data Center (NCDC) for initial processing, and then forwarded to the WMO Marine Climate Centers located in the United Kingdom and Germany.

Log File Maintenance

Accomplished in two ways, **(1)** by the servicing PMO who will download the Log Files to a floppy or USB Thumb drive, or **(2)** by ships personnel when requested, E-mailing the Log Files to the PMO.
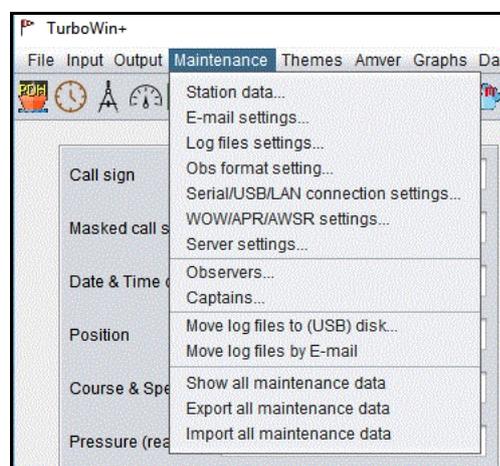
E-Mailing Log Files by Ship's Personnel

When it's not feasible for the PMO to visit the ship within a 3-month period, the PMO will request ship's personnel to E-Mail the Log Files.

- On Main page, select **Maintenance**
- Select **Move Log Files by E-Mail**. A dialog box will open up asking if you want to proceed. If so, click Yes.
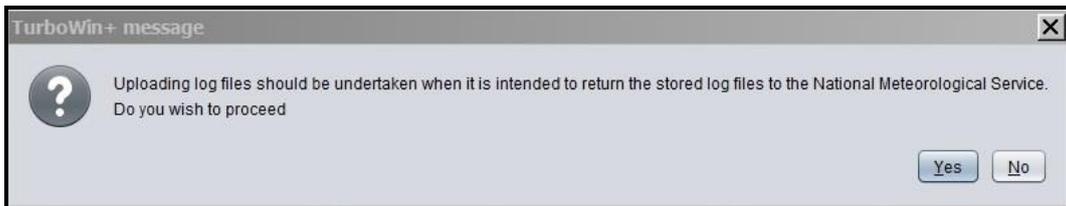
- If an E-Mail client, such as Outlook, Outlook Express or Thunderbird is installed on the computer, TurboWin+ will use the E-Mail client automatically.
- Your E-Mail system will open up with the following statement in the body of the E-Mail;

"please manually ATTACH the file: C:\Program Files\TurboWin+\logs\temp\Ship Name logs.zip"

From:	OCEAN SAILOR <master.WFF1234@globeemail.com>
To:	Steve.Jones@noaa.gov (your servicing PMO)
Subj:	meteo logs OCEAN SAILOR
please attach manually the file: C:\Program Files\TurboWin+\logs\temp\OCEAN SAILOR logs.zip	

- Verify E-Mail address. This should be your servicing PMO. If you are uncertain who your servicing PMO is, please contact the VOS Operations Manager at **VOS@noaa.gov** for clarification.
- **ATTACH** the zip file. File can be found in **C:\Program Files\TurboWin+\logs\temp**
- **If correct, send E-Mail.**

1. If TurboWin+ does not recognize your E-mail client
   - Close or minimize TurboWin, then open your e-mail client and start E-mail.
   - In the body of the message type **"Log files for the vessels (Ship name) attached."**
   - **ATTACH** the zip file. File can be found in **C:\Program Files\TurboWin+\logs\temp**
   - Address Email to your servicing PMO. If you are uncertain who your servicing PMO is, please contact the VOS Operations Manager at **VOS@noaa.gov** for clarification.
   - **If correct, send E-Mail.**

2. If your E-mail client is located on another computer

- Select **Move log files to (floppy/USB) disk….**
- A Save dialog box will appear asking where you want the file to be saved and the file name. ****** Do not rename the zip file ****** Save the Zip file on the appropriate media (Floppy Disk – USB Thumb drive) to transfer to your computer with an E-mail client.
- Load disk or thumb drive containing the Zip file on the computer with your E-mail client.
- Open up your e-mail client. , **ATTACH** the Zip file.
- In the body of the message type **"Log files for the vessels (Ship name) attached."**
- Address Email to your servicing PMO. If you are uncertain who your servicing PMO is, please contact the VOS Operations Manager at **VOS@noaa.gov** for clarification.
- **If correct, send E-Mail.**

After maintenance is performed, the IMMT file on the computer will be deleted. New IMMT.txt file will be created once a new observation is taken.

VII. AMVER REPORTS

IMO Standard for AMVER Reporting

```
AMVER/_R//
A/Vessel Name/International Radio Call Sign/IMO Number//
B/Time (as of position in C or G)//
C/Latitude/Longitude (as of time in B)//
E/Current Course (as of time in B)//
F/Estimated Average Speed (for remainder of voyage)//
G/Port of Departure/Latitude/Longitude//
I/Destination/Latitude/Longitude/Estimated Time of Arrival//
K/Port of Arrival/Latitude/Longitude/Time of Arrival//
L/Navigation Method/Leg Speed/Latitude/Longitude/Port/ETA/ETD//
M/Coastal Radio Station or Satellite Number/Next Radio Station//
V/Medical Personnel//
X/Remarks//
Y/Relay Instructions//
Z/End of Report (EOR)//
```

> **Note:** Vessel IMO Number is now required at the end of Line A

TRANSMITTING AMVER Reports

E-MAIL

- E-Mail is the preferred method for sending AMVER Reports
- Once the AMVER Report is completed, click E-Mail on the bottom of the screen. Your E-Mail will open up with the report in the body of the E-Mail.
- Please check the E-Mail address. Should be   **amvermsg@amver.org**
- If correct, send E-Mail.

INMARSAT-C

- Once the AMVER Report is completed, click **Clipboard** . This will save the report in the proper text format.
- Open Notepad on the computer and **paste** report.
- Save the report on the appropriate media (Floppy Disk – USB Thumb drive – SD Card) to transfer the AMVER report to your Sat-C terminal.
- Method of including the content of a text formatted AMVER Report in a Sat-C message may vary between different makes of Inmarsat C terminals. If you have any questions, contact your servicing PMO.
- Follow your Sat-C instructions. Transmit the observation using Special Access Code (SAC) **43** to the appropriate LES.
- Your servicing PMO will provide Sat-C Code 43 transmission instructions.

For Information or Questions regarding AMVER, please contact:

United States Coast Guard   Phone: 212- 668-7764
Amver Maritime Relations Office   Fax: 212- 668-7684
USCG Battery Park Building   E-Mail: benjamin.m.strong@uscg.mil
1 South Street, 2nd FL
New York, NY 10004-1499 U.S.A.

Sailing Plan (SP)

This report contains complete routing information and should be sent a few hours before departure, upon departure, or within a few hours after departure. It must contain enough information to predict the vessel's actual position within 25 nautical miles at any time during the voyage, assuming the Sailing Plan is followed exactly. Sailing Plans require A, B, E, F, G, I, L, and Z lines. The M, V, X, and Y lines are optional. (The Y line is required for U.S. vessels.)

Example:
```
AMVER/SP//
A/NWS HOUSTON/HGX1/1234567//
B/242212Z MAR//
E/045//
F/198//
G/TOKYO/3536N/13946E//
I/LOS ANGELES/3343N/11817W/031300Z APR//
L/RL/198/3448N/13954E/240850Z//
L/GC/210/4200N/18000E/280400Z//
L/RL/200/4200N/16000W/300030Z//
L/GC/188/3422N/12047W/030500Z//
L/RL//
M/43778910//
V/PA//
X/TEST SAIL PLAN//
Y/JASREP/AUSREP/CHILREP/MAREP//
Z/EOR//
```

E-Mail   Opens ships E-Mail with the AMVER Sail Plan in body of E-Mail.

Clipboard   Saves Sail Plan to the Clipboard in text format.

Cancel   Cancels Sail Plan. Return to main menu.

Import   For ships on regular recurring routes, saved Sail Plans can be imported and edited.

Save   Saves the Sail Plan to the default location C:/Program Files/TurboWin+/AMVER.

Position Report (PR)

This report should be sent within 24 hours of departing port and at least once every 48 hours thereafter. The destination should be included (at least in the first few reports) in case AMVER has not received the Sailing Plan information. Position Reports require A, B, C, E, F, and Z lines. The I line is strongly recommended. The M, X, and Y lines are optional. (The Y line is required for U.S. vessels.)

** If you submit a marine weather observation at least once per day, you DO NOT have to submit a Position Report (PR) **

Example:

```
AMVER/PR//
A/NWS HOUSTON/HGX1/1234567//
B/010112Z DEC//
C/3500N/13523W//
E/120//
F/161//
I/LOS ANGELES/3343N/12047W/032310Z DEC//
Y/JASREP/AUSREP/CHILREP/MAREP//
Z/EOR//
```

E-Mail   Opens ships E-Mail with the AMVER Position Report in body of E-Mail.

Clipboard   Saves Position Report to the Clipboard in text format.

Cancel   Cancels Position Report. Return to main menu.

Import   Position Reports cannot be saved or imported.

Deviation Report (DR)

This report should be sent as soon as any voyage information changes which could affect Amver's ability to accurately predict the vessel's position. Changes in course or speed due to weather, ice, change in destination, diverting to evacuate a sick or injured crewmember, diverting to assist another vessel, or any other deviation from the original Sailing Plan should be reported as soon as possible. Deviation Reports require the A, B, C, E, F, and Z lines. The I and L lines are required if destination or route changes. The I line is always strongly recommended, even when not required. The M, X, and Y lines are optional. (The Y line is required for U.S. vessels.)

Example:
```
AMVER/DR//
A/NWS HOUSTON/HGX1/1234567//
B/291200Z NOV//
C/4200N/16654W//
E/090//
F/175//
I/LOS ANGELES/3343N/12047W/041000Z DEC//
M/43691167//
X/REDUCED SPEED DUE TO WEATHER//
Y/JASREP/AUSREP/CHILREP/MAREP//
Z/EOR//
```

E-Mail   Opens ships E-Mail with the AMVER Deviation Report in body of E-Mail.

Clipboard   Saves Deviation Report to the Clipboard in text format.

Cancel   Cancels Deviation Report. Return to main menu.

Import   Deviation Reports cannot be saved or imported.

Final Arrival Report (FR)

This report should be sent upon arrival at the port of destination. This report properly terminates the voyage in AMVER's computer, ensures the vessel will not appear on an AMVER SURPIC until its next voyage, and allows the number of days on plot to be correctly updated. Final Arrival Reports require the A, K, and Z lines. The X and Y lines are optional. (The Y line is required for U.S. vessels.)

Example:
```
AMVER/FR//
A/NWS HOUSTON/HGX1/1234567//
K/LOS ANGELES/3343N/12047W/032200Z DEC//
Y/JASREP/AUSREP/CHILREP/MAREP//
Z/EOR//
```

E-Mail   Opens ships E-Mail with the AMVER Arrival Report in body of E-Mail.

Clipboard   Saves Arrival Report to the Clipboard in text format.

Cancel   Cancels Arrival Report. Return to main menu.

Import   Arrival Reports cannot be saved or imported.

Mintaka Duo / Mintaka Star
Digital Barometer Install

The Mintaka (Duo & Star) are high precision duo pressure sensor units that can be integrated into the TurboWin+ program. Once installed the Mintaka will automatically ingest air pressure and pressure tendency into TurboWin+. Your servicing PMO will install and provide training for this equipment on selected VOS vessels.

Instructions contained in the appendix are provided in case of a computer replacement or failure requiring the Mintaka to be re-installed by ship's crew.

Installation and operation of the Mintaka Duo and Star are nearly identical. Advantage of using the Mintaka Star is the capability to ingest GPS position (Lat/Long) into the TurboWin+ program.

Installing the Mintaka to the Computer

Plug the Mintaka into a USB port on the computer containing TW+ 4.0 software. Mintaka Main screen will appear. Ensure the time is set to UTC+0.

Mintaka will default to <u>Station Pressure</u> reading. Under "Maintenance" in the "Ship Data" section, ensure entries for barometer height, difference between SLL and water line, and distance from keel to SLL **are accurate**. This is necessary for TurboWin+ to correctly compute Mean Sea Level Pressure. If required, your servicing PMO will adjust (or advise for remote installation) the Mintaka to the correct station pressure.

Installing USB Driver

- On the TW+ 4.0 CD double click on   **Windows_usb-serial_driver_installer.exe**
- Windows dialog box open and asks if you want to run this file. Click **Run**
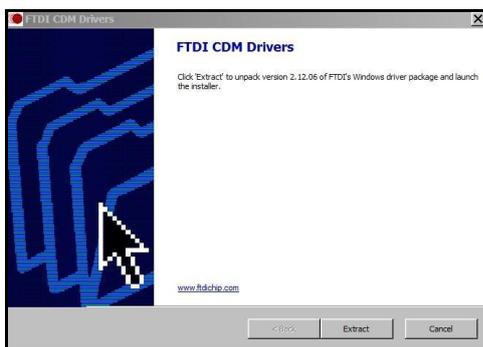
Click **Extract** to launch the installer

Click **Next** to start the installation process
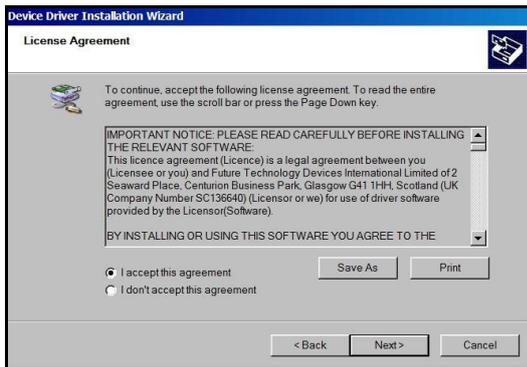
Click the radial button to accept license agreement
(Royalty free license to use software)

Installation completed. Click **Finish** to exit

Setting up the Mintaka in TurboWin+ 4.0

- Open TurboWin+ 4.0
- At the top of the Main Page, select "**Maintenance**"
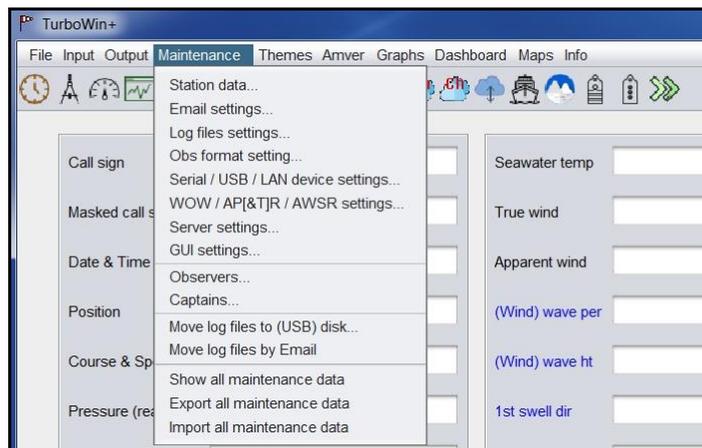
- select "**Serial/USB/Lan device settings**". Enter password   **JWS01**
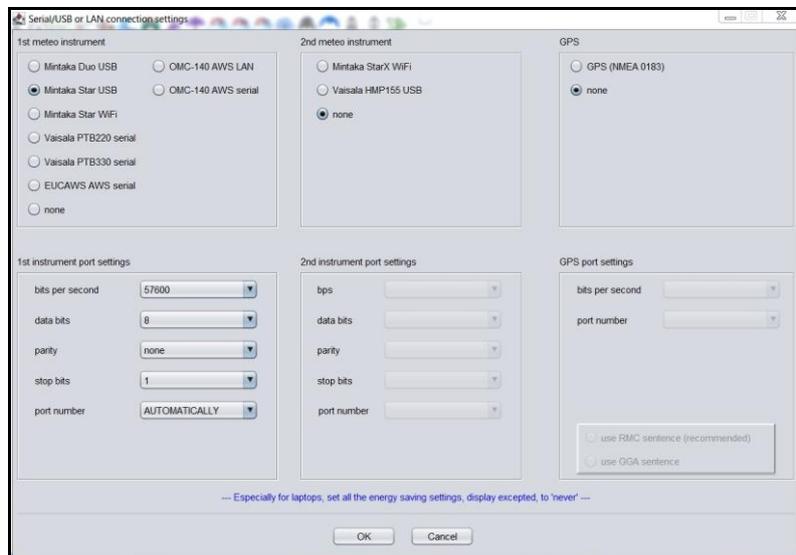
- Input the following settings

    Instrument connected: Select Mintaka "**Duo**" or "**Star**" USB **Instrument Port**

    Settings:

bits per second	**57600**
data bits	**8**
parity	**none**
stop bits	**1**
port number	Automatically
port name	Automatically

    GPS connected (USB or serial port): Select **"none"**

    GPS port settings: leave blank

- Click **OK** to save. You will be asked to **restart** TurboWin for changes to take effect.

Verifying Mintaka Pressure is inputted into TurboWin+ 4.0

Open TW+. A dialog window will appear showing which COM Port is activated.

- COM# OK. Mintaka pressure inputs being received.

    - Wait **2** minutes then click on the Pressure Icon
    - Mintaka pressure reading will automatically be inserted. Click Ok
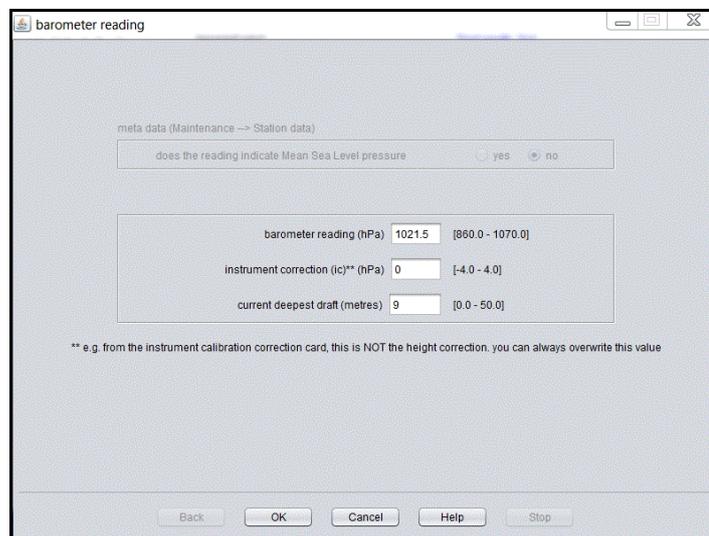
    - After running for **3** hours the Mintaka pressure tendency reading will automatically be inserted.

➢ Once you start the observation, station pressure, computed Mean Sea Level (MSL) reading, amount of pressure change and tendency code will be entered automatically.

➢ If using a Mintaka Star, ship' position and course & speed will also be automatically entered.

Possible Problems

At TW+ startup, if COM# not found

1) Check Instrument Port Settings.
2) Check USB cable. Sometimes cables do fail.
3) Reinstall the **Windows_usb-serial_driver_installer.exe**
4) Restart TurboWin+
5) If you cannot get the Mintaka pressure input working, contact your servicing PMO for assistance.

Pressure Graph

- ▪ ***As long as TurboWin+ is left open (minimized)***, pressure readings up to seven days will be displayed on a barographic trace.
- ▪ Two ways to view pressure trace:
  - ➢ (1) In the system tray, right click on the TurboWin+ icon 🚩 then select pressure graph

pressure graph
Maximize TurboWin+
Exit TurboWin+
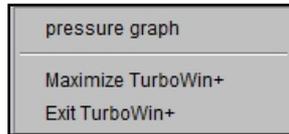
  - ➢ (2) On main TW+ page, click on Graphs and select Sensor data pressure.

Graphs	Dashboard	Maps	Info
Sensor data pressure			
Sensor data air temp			
Sensor data SST			
Sensor data wind speed			
Sensor data wind dir			
Sensor data total			
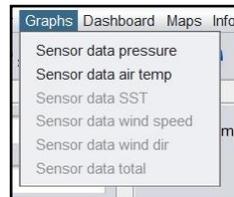
7-day barograph pressure trace will be displayed.
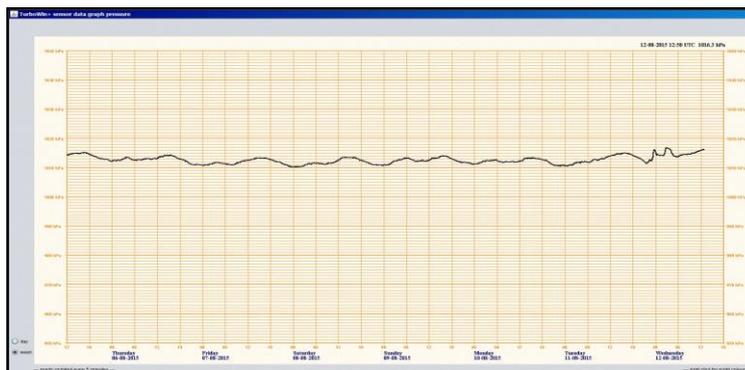
- ▪ On the lower left portion of the screen, you can select to display a 7 day or a 24 hours pressure trace.
- ▪ Right click on the trace you can changed the view colors to Night or Day for easier Viewing, or saved as a Portable Network Graphics (PNG) image.

night colours
day colours
save trace as image
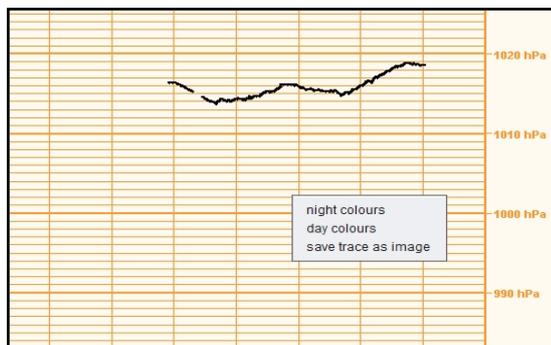
Pressure Sensor Files

- The Mintaka unit creates a sensor_data file every hour, usually at 59 minutes after the hour. These files are 3kb in size.

Name	Date modified	Type	Size
sensor_data_2015090904.txt	9/8/2015 11:59 PM	Text Document	3 KB
sensor_data_2015090903.txt	9/8/2015 10:59 PM	Text Document	3 KB
sensor_data_2015090902.txt	9/8/2015 9:59 PM	Text Document	3 KB
sensor_data_2015090901.txt	9/8/2015 8:59 PM	Text Document	3 KB
sensor_data_2015090900.txt	9/8/2015 7:59 PM	Text Document	3 KB
sensor_data_2015090823.txt	9/8/2015 6:59 PM	Text Document	3 KB

- Pressure readings are taken every minute from the Mintaka and appended to the sensor_data file for that hour. Files can be found in C:\Program Files\TurboWin+\logs
- After every start-up of TurboWin+ sensor data files older than 200 hours will be deleted.

Refer to Mintaka User's Guide for more specific information on the operation and use of the Mintaka Duo / Star Precision Barometer

Mintaka StarX
Enhanced Manual Observing System (EMOS)

Mintaka StarX is designed as an outside unit installed on a ship's bridge wing. It measures station pressure, air temperature and relative humidity, then communicates the data to the Mintaka Star on the bridge via WiFi every 5 minutes. Data from the StarX and GPS data from the Star are pushed via USB cable to the ship's computer and into TurboWin+. It is fully independent of ships power. Runs on a lithium battery lasting 6 to 9 months.

Mintaka GuardX thermoscreen protects the externally bridge wing mounted StarX from the elements. For WiFi purposes placement should be within 60 ft of the inside Mintaka Star unit.

Mintaka Star is a stand-alone digital dual pressure unit (barometer and barograph) with GPS capabilities that is integrated into the TurboWin+ reporting software. It can also work in conjunction with the Mintaka StarX thorough a WiFi connection.

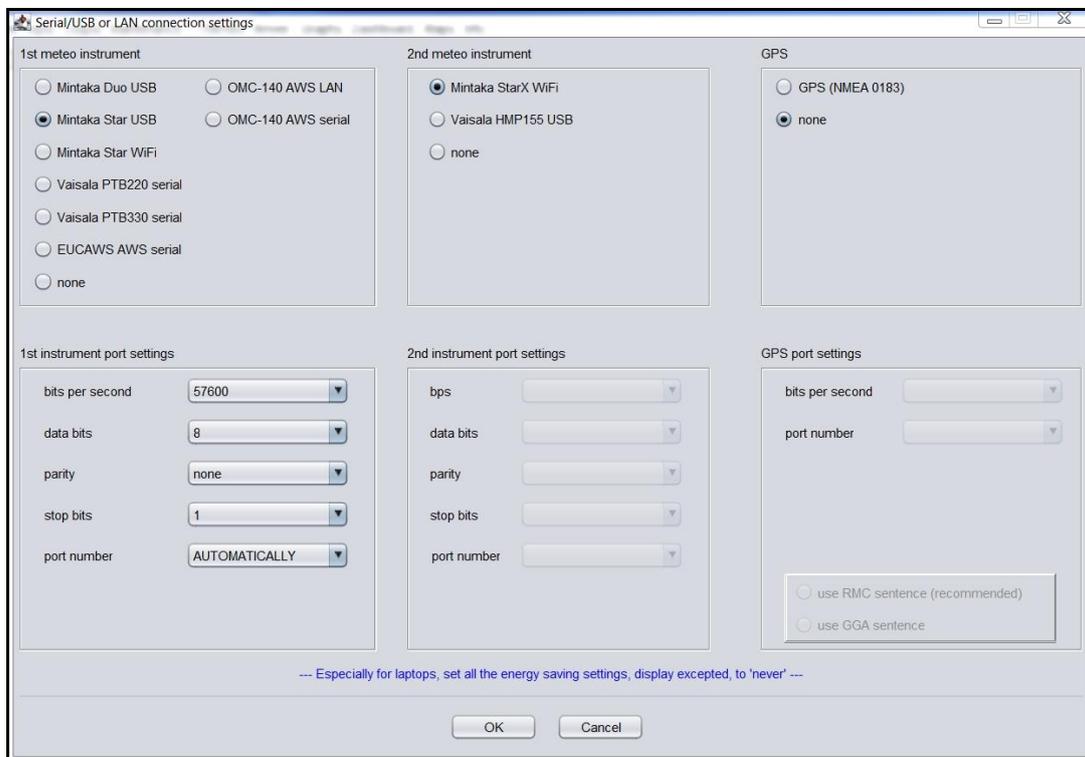**Enhanced Manual Observing System (EMOS)** consists of a Mintaka Star, StarX and GuardX, that works directly with the TurboWin+ software. Readings from the Mintaka digital equipment are automatically uploaded into the TurboWin+ software every 5 minutes.

Setting up the Mintaka StarX in TurboWin+ 4.0

- At the top of TW+ Main Page, select "Maintenance"

- select "Serial/USB/Lan device settings". Enter password **JWS01**

- Input the following settings

> **1ˢᵗ meteo Instrument:** Select   Mintaka Star USB
> **1ˢᵗ instrument port settings**
>> bits per second   57600
>> data bits   8
>> parity   none
>> stop bits   1
>> port number   Automatically
>> port name   Automatically
>
> **2ˢᵗ meteo Instrument:** Select   Mintaka StarX WiFi
> **2ˢᵗ instrument port settings**   (leave all blank)
>
> **GPS**   Select   none
> **GPS port settings**   (leave blank)

Click **OK** to save. You will be asked to restart TurboWin for changes to take effect.

Note: It can take up to 5 minutes before StarX reports are received.

GuardX Placement

- Attach GuardX on bridge wing in allocation with unrestricted air flow, and within 60 ft of the bridge mounted Star.
- StarX should be place up side down in the GuardX. This is to keep water from puddling on the sensor port. Place black grommet side up.
- Ensure lid is securely attached.

Operation   Once you start the observation, data from the Star and StarX will automatically populate the input screens for Ships Position, Pressure, Pressure Tendency and Temperature. Input data can be over written if necessary.

StarX Report Screen

- Recommend you keep the Mintaka Star display on the StarX Report screen. Report shows all observational data, battery voltage, and the last time a report was received from the StarX.
- Battery voltage should be checked occasionally on the StarX Report screen. Once voltage gets below 3.10V, you should consider changing the battery. Notify your servicing PMO when battery is changed.

Trouble Shooting StarX

1. Data not getting into TurboWin+.
   - Check TW+ USB/Serial/Lan settings.
   - Check Mintaka Star settings. Refer to manual. Baud rate is 57600.
   - Unplug Mintaka Star from computer. Wait 2 minute then plug back in to reset. You should see "Creating Network" displayed. It will take up to 5 minutes before a StarX report is sent.

2. No Reports Received from Mintaka StarX

```
4/16/18 10:37:47
StarX has missed
    4 Reports

OK
```

   - Press "Select" button on StarX. Should see a quick double green flash. This will wake up the StarX.
   - After double flash press "Select" again. Should see one green flash. This means a report was sent to the Mintaka Star.
   - If no green lights are seen, replace battery.

3 Notify your PMO if StarX stops reporting.
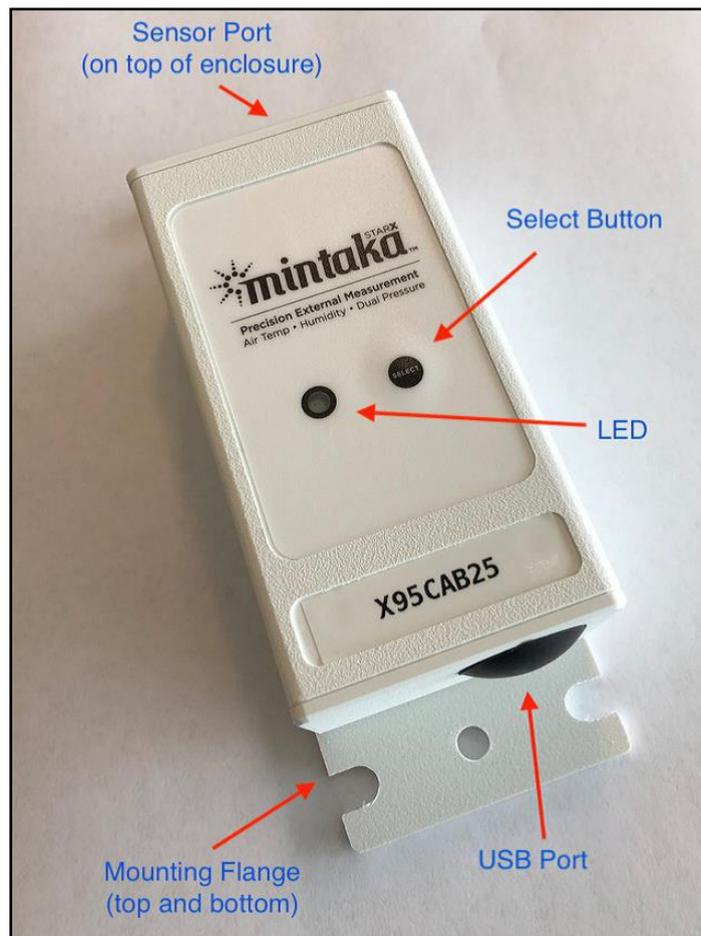
Replacing Battery
- Battery should be replaced about every 6 to 9 months.
- On the back of the StarX, carefully remove the 6 small screws that hold the backplate in place.
- Remove old battery and replace. Careful not to put too much pressure on the circuit board when inserting new battery.
- Press the "Select" button on front of the unit. You should see two quick green flashes. Quickly press "Select" again to send report.
- On the Mintaka StarX Report screen, battery voltage should be between 3.1V and 3.6V
- Notify your PMO when battery is replaced.

(If the Mintaka Star or StarX stops working, contact your servicing PMO)

Fall-back if Mintaka StarX Stops Reporting
- If the StarX stops reporting and replacing the battery does not correct it, in TW+ Maintenance/Serial USB/LAN settings, under 2st meteo Instrument select "none".
- Verify the instrument port settings for 1st meteo instrument are correct. See *Appendix A.*
- You will have to restart TW+ for setting change to take effect.
- Falling back to the Mintaka Star will at least provide TW+ input of Ship's Lat/Long, Course/Speed, pressure and pressure tendency.
- Also use the RH-300 Digital Psychrometer for air and wet bulb temperature readings.
- Notify your PMO if the Mintaka StarX stops working.

Quality Check

Ships with internet can check the quality of observations at:

http://esurfmar.meteo.fr/qctools/

Click on VOS Individual Control Panels (lower right). Enter call sign. Quality Control indicators for all weather elements are available for the past two weeks.

EMOS Auto Transmit of Observations Hourly

TurboWin+ 4.0.x software includes the capability of automatically transmitting hourly via e-mail an abbreviated marine observation when coupled with the Enhanced Manual Observing System (EMOS).
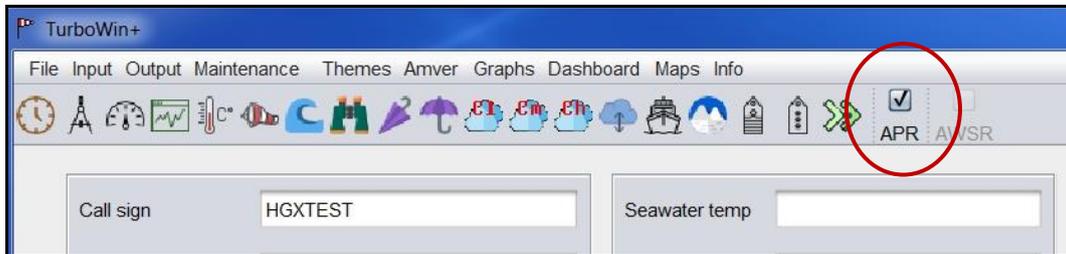
EMOS automated hourly observations will consist of the following elements:

Date & Time UTC	Ship Call Sign	Ship Lat/Long
Ship Course & Speed	Sea Level Pressure	Pressure Tendency
Air Temperature	Dew Point	

PMOs will work directly with a shipping company's IT Department for permission to use the auto transmit function and to assist with the proper transmit configuration in order to meet cyber security requirements.

Configuring TW+ 4.0.x for Auto Transmit A few changes to the TW+ setup first must be made to the following maintenance screens.

- E-Mail settings:
- WOW /APR/APTR/AWSR settings:
- Serial/USB / LAN device settings:

Password   JWS01

E-Mail Settings

[ALL]

address receipt:	shipobs@noaa.gov
Email Subject:	Weather Observation

[FORMAT 101]

Select obs in body

[SMTP HOST] *only used for Auto Transmit*

ship email address:	Company IT to provide
server:	Company IT to provide
password:	Company IT to provide
port:	Company IT to provide

[Gmail] *only used for Auto Transmit*

Your Gmail address:	Servicing PMO will provide
Gmail app password:	Servicing PMO will provide
	SSL

[YAHOO] not used

Log Email Receipt: input your servicing PMO e-mail address

Click **OK** to save. You will be asked to **restart** TurboWin for changes to take effect.

WOW and AP(&T)R and AWSR Settings

WOW (Weather Observation Website)
- Leave all blank

AP[&T]R (Automated Pressure & Temperature Reports)
- Check report pressure & temp auto
- Check 1 Hour

AWSR (Automatic Weather Station Reports)
- Leave all blank

AP[&T]R / AWSR Send Method
- Corresponds to E-mail settings (SMTP or Gmail). Check appropriate method.

WOW and AP[&T]R
- Normal steaming draft (meters):   Input average ship's draft in meters to the ``tenth. (used to compute Sea level Pressure)
- Barometer Instrument Correction: Leave blank unless otherwise directed by your servicing PMO.

Click **OK** to save. You will be asked to **restart** TurboWin for changes to take effect.

Once the auto transmit function settings are made, it can be turned on or off easily from the main screen. No need to restart TurboWin+.

Serial/USB or LAN Connection Settings:

- Input the following settings

  1ˢᵗ meteo Instrument: Select   Mintaka Star USB

  1ˢᵗ instrument port settings
bits per second	57600
data bits	8
parity	none
stop bits	1
port number	Automatically
port name	Automatically

  2ˢᵗ meteo Instrument: Select   Mintaka StarX WiFi

  2ˢᵗ instrument port settings   (leave all blank)

  GPS   Select   none

  GPS port settings   (leave blank)

Click **OK** to save. You will be asked to restart TurboWin for changes to take effect.

Note: It can take up to 5 minutes before StarX reports are received.

Auto Input of EMOS Data

When in auto transmit mode, the APR box is checked at the top of the main page. Once TW+ is configured for Auto Transmit, function can be turned on or off with the APR box without having to restart TW+.
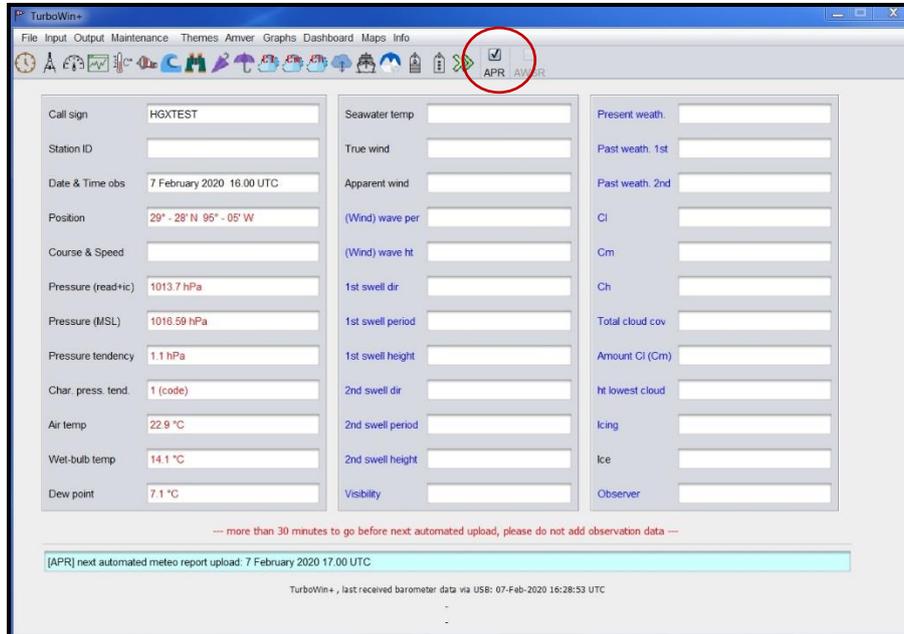
Auto EMOS data will be displayed in Red and is updated automatically every 5 minutes. Message will be displayed in blue shaded box and indicates when next observation is to be transmitted. At the top of each hour, observation will be transmitted automatically.
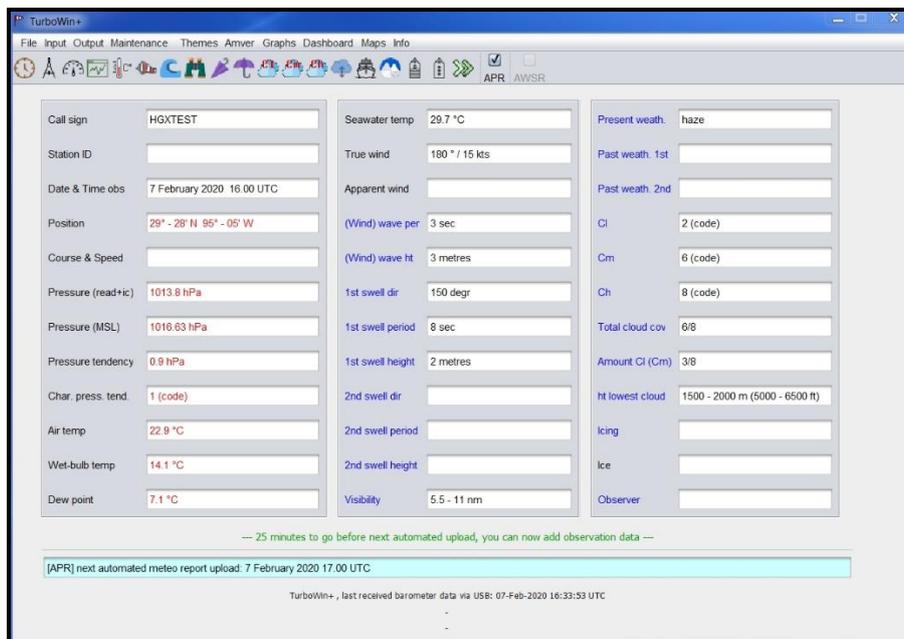
Mates can augment the observation any time 30 minutes after the hour by clicking on the weather reporting element box. *Mates are asked to record a complete observations every 6 hours at 00-06-12-18Z, or when they encounter seas greater than 12 ft or winds greater than 34 kts.*

After the observation has been transmitted, data inputs will blank out until the next StarX reporting time (5-minutes).

To verify if observations are being sent out correctly, Mates can check the System Log under the Info Menu.
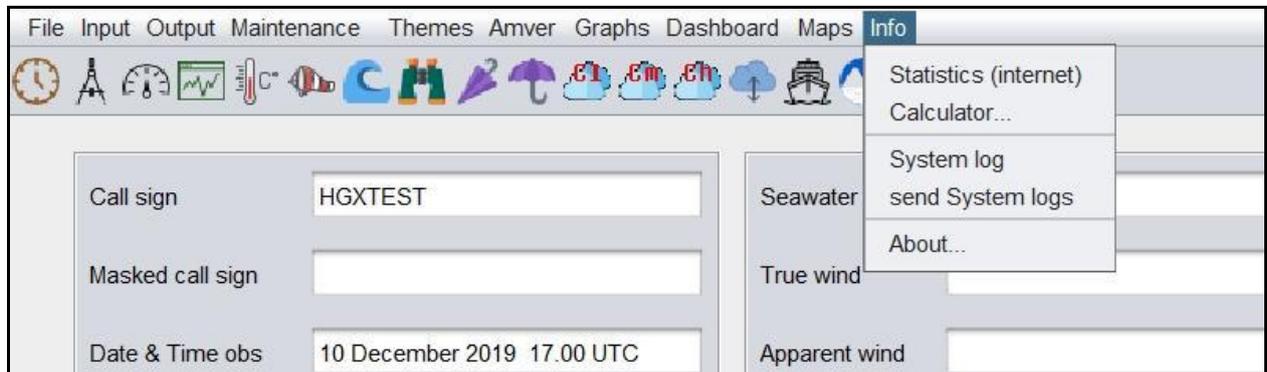
Observation sent correctly System Logs will look similar to this:

```
21-Nov-2019 01:00:04 UTC [APR] scheduled upload
21-Nov-2019 01:00:04 UTC [APR] air pressure at sensor height = 1014.96 hPa
21-Nov-2019 01:00:04 UTC [APR] air pressure height correction = 3.25 hPa
21-Nov-2019 01:00:04 UTC [APR] air pressure instrument correction = 0 hPa
21-Nov-2019 01:00:04 UTC [APR] air pressure MSL = 1018.21 hPa
21-Nov-2019 01:00:04 UTC [APR] pressure tendency at sensor height = 0.7 hPa
21-Nov-2019 01:00:04 UTC [APR] pressure characteristic at sensor height = 1 (code)
21-Nov-2019 01:00:04 UTC [APR] RH at sensor height = 65 %
21-Nov-2019 01:00:04 UTC [APR] dew-point at sensor height = 16.0 °C
21-Nov-2019 01:00:04 UTC [APR] air temp at sensor height = 22.9 °C
21-Nov-2019 01:00:04 UTC [APR] wet-bulb temp at sensor height = 18.5 °C
21-Nov-2019 01:00:04 UTC [APR] position parsing ok; GPS position (dd-mm [N/S] ddd-mm [E/W]): 29-31 N 95-03 W
21-Nov-2019 01:00:04 UTC [EMAIL] trying to send obs (body= "BBXX EMOSTEST 2101/ 99295 70950 41/// ///// 10229 20160 40182
51007 7//// 8//// 222// 0//// 2//// 80185=") to shipobs@noaa.gov cc none from EMOStest@comcast.net via SMTP_HOST_SHIP port
587 attachment none
21-Nov-2019 01:00:04 UTC [EMAIL] found: email_tbw.exe
21-Nov-2019 01:00:16 UTC [EMAIL] mail sent successfully
21-Nov-2019 01:00:16 UTC [IMMT] appended immt.log successfully
```

If not, there will be a statement concerning why observation was not sent. If there is a problem transmitting auto observations, your servicing PMO will ask you to email System Logs.

Fall-Back Procedures:

    1.   If the Auto transmit function fails, Mates can easily fall back to manual transmission of the observation by unchecking the APR box on the main page. No restart of TW+ is required.
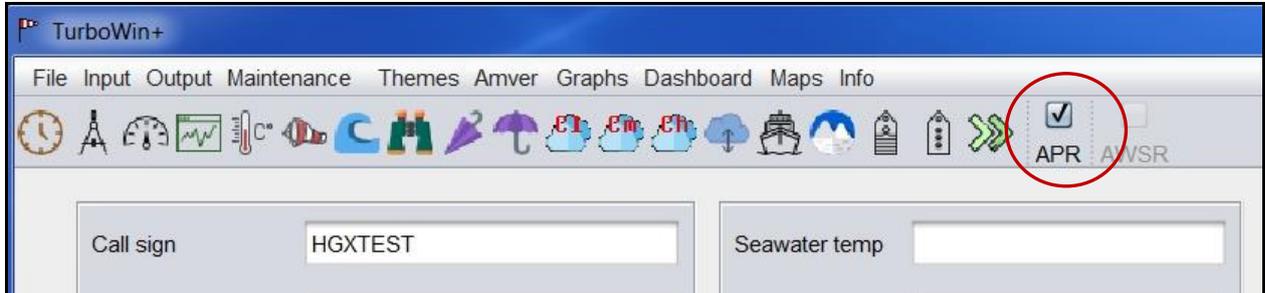
Note: In the manual transmit mode, data from the StarX is inputted in TW+ but not displayed on the main screen until each individual page is opened.

THRANE & THRANE (Sailor) INMARSAT Procedure

************************************** **IMPORTANT** **************************************

1. It is necessary to setup an address for the **Code 41** message in the Standard C software. SETUP Procedure provided below is a one-time process to be completed on initial installation.
2. The TRANSMISSION instructions provided below are to be followed each time a message is transmitted.
3. These instructions may vary slightly, depending on the software version and hardware.

SETUP PROCEDURE

1. At the **MAIN MENU** highlight **APPLICATION** option and Press <ENTER>. Select **ADDRESS BOOK** and Press <ENTER>. Select **NEW** in Address Book and Press <ENTER>.

2. At the **EDIT ADDRESS** section type in **NEW NAME** of file. (Example name: WEATHER OBS) and Press <ENTER>.

    o There is a DOT in front of the **TELEX [() Telex]** located on the right side of the screen. Move the DOT to **SPECIAL** by using the Arrow key. Once the **SPECIAL** is Highlighted Press the **SPACE BAR.** (This will place the DOT in the SPECIAL Address)

    o At the Bottom of the screen a Box will appear to enter the **SPECIAL ACCESS CODE.** Enter the number **41** and Press <ENTER.

    o Set the **BIT to 7**, if it is not already done and Press <ENTER>.

    o The CURSOR should be at **"OK".** Press <ENTER>. (The Address is now saved).

TRANSMISSION PROCEDURE

1. At the **MAIN MENU** highlight **FILE** and Press <ENTER>. Select **NEW ASCII** or **NEW TELEX** and Press <ENTER>. Type in your Meteorological Observation in the proper format.

2. When finished entering the Observation Press **ESC** and this will return to the Main Menu. At the **MAIN MENU** highlight **FILE** and Press <ENTER>. Arrow down to **SAVE** and Press <ENTER>. Name the FILE on the MSG such as **"WEATHER OBS"** and Press <ENTER>.

3. At the **MAIN MENU** highlight **TRANSMIT** and Press <ENTER>. Select **SEND** and Press <ENTER>. (This will transmit the MSG) NOTE: Please turn the **CONFIRMATION OFF.**

    o When completing the Next Observation go to FILE and Press <ENTER>. Highlight LOADFILE and select the previous Observation BBXX and EDIT the same file and Transmit the file.

FURUNO
INMARSAT Procedure

************************************* **IMPORTANT** *************************************

1. It is necessary to setup an address for the **Code 41** message in the Standard C software. SETUP procedure provided below is a one-time process to be completed on initial installation.
2. The TRANSMISSION instructions provided below are to be followed each time a message is transmitted.
3. These instructions may vary slightly, depending on the software version and hardware.

SETUP PROCEDURE

1. At the **NORMAL STANDBY** Position Press **F1 (FILE)**. A small window will appear and Highlight **No. 1: New (ALT-N)** and Press <ENTER>.
    - A larger window appears. At the cursor type in your Meteorological Observation in the proper format. (BBXX) Press **F1 (SAVES MESSAGES)**.
    - A small window appears. Arrow down to **5: (SAVE ALT-S)** and Press <ENTER>.
    - A small window appears in the upper left corner titled **SAVE FILE NAME**. Enter a Name on the file such as **"WEATHER OBS"** and Press <ENTER> (SAVED MESSAGE).

TRANSMISSION PROCEDURE

1. Press **F3 (SEND/REC)**: A small window appears in upper left corner. Highlight **No.1 (SEND)** and Press <ENTER>.
    - Another window appears to the right of **TITLE TO SEND MESSAGE**. Highlight **No. 1 (SEND MESSAGE)** and Press <ENTER>.
2. The **SEND MESSAGE** window appears.
    - Arrow down to **DESTINATION TYPE** and Highlight **"SPEC"**.
    - Arrow down to **STATION ID** and Type in **"41"**.
    - Arrow down to **CES ID** and type in the **LES/CES ID**. (Your LES/CES ID will be determined by location in relation to the FOOT PRINT of the satellite.)
    - Arrow down to **CONFIRMATION** and select **OFF** and Press <ENTER>.
3. A small window appears titled **SEND START.** Highlight **YES** and Press <ENTER>.
    - At the bottom of the screen it will say: MESSAGE IS ENTERED IN SENDING BUFFER.
    - A window will appear saying: **SUCCESSFUL SENDING MESSAGE**.
    - The lower left corner of the screen will show the **STATUS** of the message.
4. When completing the Next Observation go to **FILE** and to **OPEN** and Press <ENTER>. Highlight the last **WEATHER OBS** message and Press <ENTER>. **EDIT** the last message and **TRANSMIT** the message.

JRC (Japan Radio Company) INMARSAT Procedure

************************************** **IMPORTANT** **************************************

1. It is necessary to set up an address for the **Code 41** message in the Standard C software. SETUP procedure provided below is a one-time process to be completed on initial installation.
2. The TRANSMISSION instructions provided below are to be followed each time a message is transmitted.
3. These instructions may vary slightly, depending on the software version and hardware.

SETUP PROCEDURE

1. At the **MAIN MENU** highlight **EDIT** and Press <ENTER>. A small window will appear in the middle of the Main Menu Screen. Select **EDIT ASCII FILE** and Press <ENTER>.

   - A small window appears which is called **EDIT ASCII FILE**. At the cursor enter a file name: **"WEATHER OBS"** and Press <ENTER>.

2. The next screen will allow you to **EDIT** a message. Type in your Meteorological Observation in the proper format. (BBXX). Press **F9** (This SAVES the information). Press **ESC** (Go back to Main Menu).

TRANSMISSION PROCEDURE

1. At the **MAIN MENU** select **TRANSMIT**. Select **SPECIAL ACCESS NETWORK**. and Press <ENTER>.

   - The **SPECIAL ACCESS NETWORK** window appears. Press <ENTER>. Type in the number **"41"** and Press <ENTER>.
   - Arrow down to **LAND EARTH STATION** and Press <ENTER>. Type in your **LES/CES ID** and Press <ENTER>. (Your LES/CES ID will be determined by your location in relation to the FOOT PRINT of the satellite.)
   - Arrow down to **DELIVERY CONFIRMATION** and Press <ENTER>. Use the Arrow Key to highlight **OFF** and Press <ENTER>.

2. Press F1 (This will SEND THE MESSAGE).

- When completing the Next Observation go to EDIT the ASCII FILE and EDIT the previous Observation BBXX and SAVE the FILE and SEND the message through the SPECIAL ACCESS NETWORK.
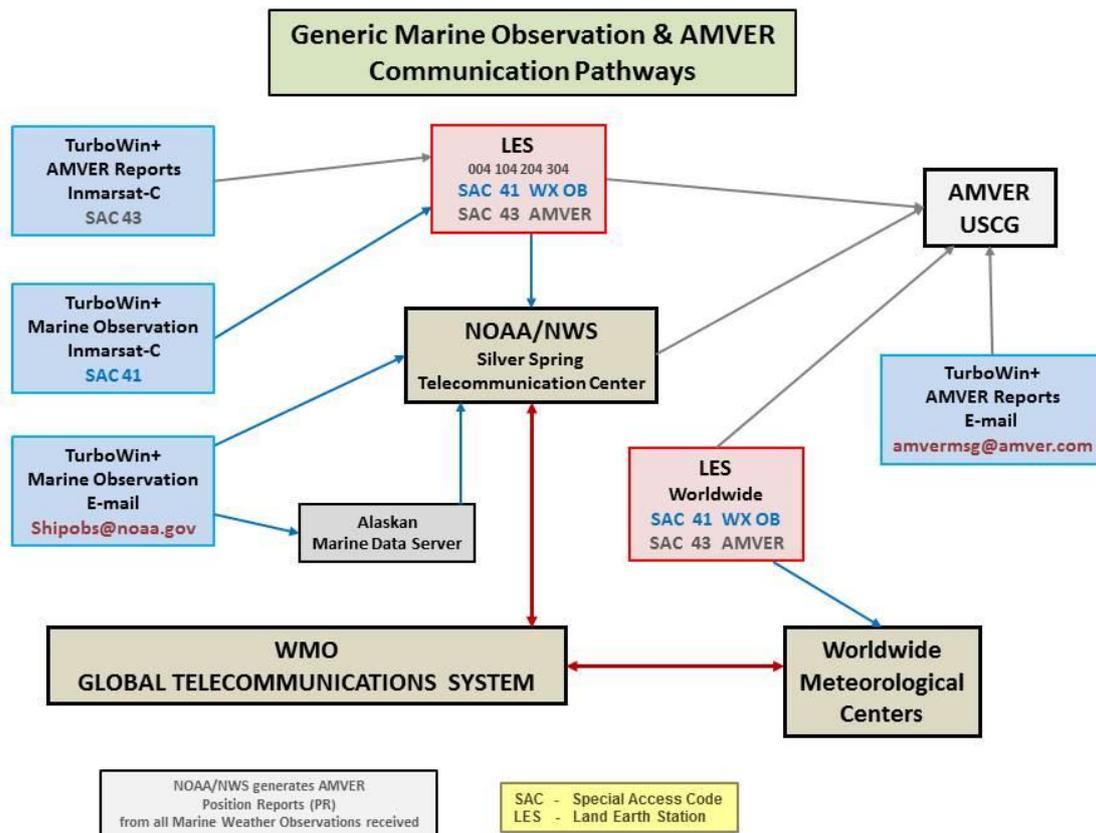
Ships' observations are generally made at the standard synoptic hours of **0000, 0600, 1200** and **1800 UTC** and are sent to a meteorological service as by INMARSAT-C or email communication. In the case of INMARSAT-C, the cost of transmission is paid by the meteorological service of the receiving country. Observations at the intermediate reporting times of 0300, 0900, 1500 and 2100 UTC are also highly encouraged, and observers are urged to report at any UTC hour if they missed the standard or intermediate reporting times, or if weather conditions varied markedly from the forecast.

The oceans cover about two-thirds of the surface of the earth, and for decades ships were the only means of obtaining meteorological data from them. Although there are now several other means - satellites, drifting buoys, floats and radar - **ships still play a very important part**. They provide __ground truth__ for the calibration of satellite observations and make measurements not yet obtainable by other means, such as air temperature and dew point.

Meteorological data are required from the seas and oceans for a number of purposes:

- For global computer models in analyzing and forecasting the state of the atmosphere;

- For the preparation and verification of marine forecasts and warnings;

- For the preparation and verification of forecasts and warnings for offshore industries;

- To monitor the state of the oceans using delayed-mode data in weekly and monthly analyses;

- For climatological data banks for many purposes, e.g. design of ships and structures at sea, determination of economic shipping routes; and

- To build long-term records to monitor changes in the earth's climate.

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