

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 / 10138 Mb available hard disk spaceTW+ 4.0.0 JPMS64-bit computer (Java not Required)TW+ 4.0.132-bit computer (Java 8 or higher required)

# TurboWin+ 4.0

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# 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**

- 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.
- 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.

* TurboWin+		
File Input Output Maintenance Themes Amver Graphs Inf	0	
Call sign	Seawater temp	Present weath
Masked call sign	True wind dir	Past weath. 1st
Date & Time obs	True wind speed	Past weath. 2nd
Position	(Wind) wave per	CI
Course & Speed	Win+ warning	×
Pressure (read+ic)	Ship name: unknown (select: Maintenance -> Sta	ation data)
Pressure (MSL)		d cov
Pressure tendency		OK I (Cm)
Char. press. tend.	2nd swell dir	h lowest cloud
Air temp	2nd swell period	Icing
Wet-bulb temp	2nd swell height	Ice
Dew point	Visibility	Observer
adding data	when minimised see system tray input menu, popup menu, toolbar icons or click on the text labels	or fields
undefined		
	TurboWin+ stand-alone mode	

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 )
ıt 🚺	Maintenance Themes Amver Graphs	Dast
2	Station data Email settings Log files settings Obs format setting Serial / USB / LAN device settings WOW / APR / APTR / AWSR settings Server settings GUI settings	E.
C	Observers Captains	
	Move log files to (USB) disk Move log files by Email	
ea	Show all maintenance data Export all maintenance data Import all maintenance data	

# **Maintenance**

**Station Data** 

ship data	wind meta data
ship name     Image: Ship name       IMO number     Image: Ship name       call sign     Image: Ship name       masked station ID*     Image: Ship name	estimated; true speed and true direction     measured; apparent speed + app. dir. (OFF THE BOW, clockwise)*     measured; true speed and true direction max. height deck cargo above SLL** (metres, [0 - 100], rounded) difference SLL and WL (water line) (metres, [-10 - 50]****, rounded)
a only to be used with the agreement of your Met. Service recruiting country UNITED ARAB EMIRATES AE UNITED KINGDOM GB UNITED STATES US COMPARING OF COMPARING OF COMPARING UNITED STATES US COMPARING OF COMPARING OF COMP	wind speed units source (estimated/measured)
air temp exposure     sea water temp exposure       sling psychrom.     intake     "through hull"sensor       marine screen     bucket     radiation therm.       hull contact sens.     bait tanks therm.       trailing thermistor     other	height of the barometer above SLL (metres, e.g. 20.8)         distance of bottom of the keel to SLL (metres, e.g. 9.1)         does the reading indicate MSL pressure*         yes         * always "no" when a barometer or an AWS is connected

- 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:

0

- 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.



## **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.* 

LL] address recipient	shipobs@noaa.gov	CC*	Email subject	Weather Observation
ORMAT 101]***	• obs in body • ob	s in attachment		
MTP HOST]* ship email addr.		server	password**	port**
SMAIL]* your Gmail address		Gmail app password		● TLS ○ SSL
'AHOO]* your Yahoo address		Yahoo app password		● TLS ○ SSL
ional ** c ired for: 'Maintenance -> Move Ic s email recipient	often not required	*** consult your PMO		
se log files include important data v	which is of particular value for climate	studies		

- Required for Output--> Obs by E-Mail (default)
  - Input Obs E-Mail address recipient:

### Shipobs@noaa.gov

- Input Obs E-Mail Subject:
- t: Weather Observation
- 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
  - 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

# Log File Settings

📓 Log files -	- 🗆 X
log files folder	
C:\Program Files (x86)\TurboWin+\logs	folder
The log files include important data which is of particular value for climate studies and research. Downloading of the log files should be done at routine intervals (deally not exceeding six months) ether by a visiting PMO or by the ships observers themselves. Do not copy or move the log files with another program. In this program select Maintenance -> Move log files	
OK Cancel	

 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
	obs format
	● FM13
	101 (semi compressed)
	AWS connected
	please change this setting only with the prior agreement of your National Meteorological Service - format 101 call sign encryption
	please change this setting only with the prior agreement of your National Meteorological Service - format 101 call sign encryption
	please change this setting only with the prior agreement of your National Meteorological Service - format 101 call sign encryption yes no
	please change this setting only with the prior agreement of your National Meteorological Service - format 101 call sign encryption yes no format 101 in E-mail
	please change this setting only with the prior agreement of your National Meteorological Service - format 101 call sign encryption yes no format 101 in E-mail in E-mail body, not possible with a web-based email client (email via web browser)

- 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.

# Serial/USB or Lan Connection Settings

Serial/USB or LAN conn	ection settings	Reader Alago Albo		
1st meteo instrument		2nd meteo instrument		GPS
<ul> <li>Mintaka Duo USB</li> <li>Mintaka Star USB</li> <li>Mintaka Star WiFi</li> <li>Vaisala PTB220 ser</li> <li>Vaisala PTB330 ser</li> <li>EUCAWS AWS seri</li> <li>none</li> </ul>	OMC-140 AWS LAN OMC-140 AWS serial ial ial	<ul> <li>Mintaka StarX WiFi</li> <li>Vaisala HMP155 USB</li> <li>none</li> </ul>		<ul> <li>GPS (NMEA 0183)</li> <li>● none</li> </ul>
1st instrument port settings	5	2nd instrument port settings		GPS port settings
bits per second	57600	bps		bits per second
data bits	8	data bits		port number
parity	none	parity		
stop bits	1	stop bits		
port number	AUTOMATICALLY	port number		
				<ul> <li>use RMC sentence (recommended)</li> <li>use GGA sentence</li> </ul>
	Especially f	or laptops, set all the energy savin	g settings, display excepted	I, to 'never'
		ОК	Cancel	

- 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.

# **Observer Settings**

surname	full initials*	rank	discharge book**	
Smith	GES	CM	-	
Jones	TWJ	2M	$(1,1,2,\dots,n_{n-1}) \in \mathbb{R}^{n-1}$	
Thomason	DCT	3M	-	
Adams	LOA	2M	-	
*e.g.	A.B.	**discharge book or seama	in's card number, if applicable	
	singi	e click row to select observer	-	
	doubl	le click cell to insert new data		

- 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.

Captain Set	tings				
	surname Burton Kemp	full initials* HTB JEK	date of joining** 12/05/2018 01/10/2018	date of leaving** 01/10/2018	discharge book***
	*e.g. M.F.C.M.	D. **format DD/N	۱۳۷۸۸۸۸ ***disct	uarge book or seaman's	s card number if applicable
	—to d	lear this table select. Mai	double click cell to intenance> Move log file	insert — s (do not delete data ir	ı individual cells) —
			DK Cancel	Help	

### Click OK to save

- 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.

# 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)



**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.











**<u>Ob's Map (offline)</u>** - Ship observations are plotted and displayed on a world map that is included in TurboWin+. Observations over the past 3 months are displayed.



**<u>Ob's Map</u> (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.





<u>Statistics</u> (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

INFO

# C EUMETNET





### <u>Calculator</u> - 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 incorrect 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 \*\*

call sign	Seawater temp	Present weath	
lasked call sign	True wind dir	Past weath. 1st	
Date & Time obs	True wind speed	Past weath. 2nd	
Position	(Wind) wave per	CI	
Course & Speed	Date and Time	Cm	
Pressure (read+ic)	obs: June 15, 2017 12.	00 UTC Ch	
Pressure (MSL)	(system: June 15, 2017 (system: June 15, 2017	11.58 UTC) 6.58 LT) Total cloud cov	
Pressure tendency	Yer	Amount CI (Cm)	
Char. press. tend.	Zna swell air	h lowest cloud	
ir temp	2nd swell period	Icing	
Vet-bulb temp	2nd swell height	Ice	
)ew point	Visibility	Observer	
	when minimised see system tray	on the text labels or fields	

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 lcon to move from screen to screen. **You can also select** Next Form Automation by clicking on the icon





# Individual Screen Input Icons

File Input Output Maintenance	Themes Amver Graphs Dashboard Maps Info	
🕚 🛦 🖚 째 🖟 🕚	<u>₩×↑₽₽₽₽₽₽₿</u> ^§	



# 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**

		longitude	
degrees 45	minutes 20   North South	degrees minutes 075 15	o East ● West
course made good d	plot position o	on Google Maps (internet) speed made good	during last 3 hrs (knots)
<ul> <li>stationary</li> </ul>		00	0 21-25
023 - 067	0 203 - 247	0 1-5	0 26 - 30
	248 - 292	0 6 - 10	O 31 - 35
068 - 112	O LIO LOL		
<ul> <li>068 - 112</li> <li>113 - 157</li> </ul>	0 293 - 337	• 11 - 15	0 36 - 40

- 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

r	neta data (Maintenance> Station data)		
	does the reading indicate Mean Sea Level pressure	🖲 yes 🕠 no	
	barometer reading (hPa) 1010.7	[860.0 - 1070.0]	
	instrument correction (ic)** (hPa) 0	[-4.0 - 4.0]	
	current deepest draft (metres)	(0.0 - 50.0)	
	content as a port and (manacy	face count	

- 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.

	pressure tendenc	y, during last 3 hrs (hPa)	2.5	[0.0 - 50.0]	
pressure higher than 3 l	hrs ago	pressure lower than 3	hrs ago	pressure the same	as 3 hrs ago
	1000-	-1000-	1000	1000-	
○ (a = 0)	🔾 (a = 1)	(a = 5)	🔾 (a = 6)	(a = 0)	(a = 4)
0 (a = 2)	  (a=3)	(a=7)	→ (a = 8)	(a=5)	
		O not determ	ined		

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.



	sling psychrometer     marine screen	
wet-bulb (*C) 25.7 [-50.0 - 50.0]	state wet-bulb wet-bulb not frozen frozen wet-bulb	exposure (Maint → Station data) ⊙ intake ◯ bucket
RH (%) 75.1 [0.0 - 100.0]	insert RH only if wet-bulb not available or if RH automated	hull contact sensor trailing thermistor "through hull" sensor radiation thermometer bait tanks thermometer

- 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.

M.C. al	C	0 D:	
wind	Speed	& Dire	ction

실 Wind		_ 🗆 X
	source (Maintenance> Station data)	
	Sestimated; true speed and true direction	
	measured; apparent speed and apparent direction (OFF THE BOW, clockwise)	
	O measured; true speed and true direction	
	wind dir. (degr) 180 [variable, calm, 1 - 360]	
	wind speed (knots) 15 [0 - 200]	
	ship's ground course (degr)* [stationary, 1 - 360]	
	ship's ground speed (knots)* [0.0 - 50.0]	
	ship's heading (degr)** [1 - 360]	
	* for the actual time of the wind observation	
	** insert only if heading differs from ground course	
	max. height deck cargo above summer load line (metres) 24 [0 - 100]	
	difference between summer load line and water line (metres)* -8 [-10 - 50]	
	*negative if summer load line is below water line	
	Back OK Cancel Help Stop	

## \*\* 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

Bf	sea (metres)*		meter	feet
0	0.0	period (sec) 4 [confused, 0 - 50]		,
1	0.1		2	7
2	0.2	height (metres) 2 [confused, 0.0 - 49.0]	3	10
3	0.6		4	13
4	1.0		5	16
5	2.0		6	20
6	3.0	swell system(s)	7	23
7	4.0	O Duell and determined	8	26
8	5.5	O Swell hot determined	9	30
9	7.0	O No swell	10	33
10	9.0		11	36
11	11.5	Confused swell or indeterminable direction	12	40
12	14.0	One swell discorrable	13	43
* prob	able mean sea	One swell discernable	14	46
height	in the open sea	Two swells discernable	15	50
romote	for land			

- 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

	meter	fee
direction (dear) 270 [1, 260]	1	3
direction (degr) 270 [1-300]	2	7
period (sec) 7 [1 - 50]	3	10
	4	13
height (metres) 1 [0.5 - 49.0]	5	16
	6	20
	7	23
	8	26
	9	30
	10	33
2nd swell system	11	36
	12	40
	13	43
direction (dear)	14	46
(1-360)		
(1 - 360)	15	50
period (sec) [1 - 360]	15	50
period (sec) [1 - 50]	15	50

- 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.

Visibility

For more information on reporting Swells, refer to the NWS Observing Handbook No. 1

🛓 Visibility		_ 🗆 X
	<pre>&lt; 50 metres () &lt; 0.03 nm 50 - 200 metres () 0.03 - 01 nm 200 - 500 metres () 0.1 - 0.3 nm 500 - 1000 metres () 0.3 - 0.5 nm () 0.5 - 1.1 nm () 1.1 - 2.2 nm () 2.2 - 5.5 nm () 5.5 - 11 nm () 11 - 27 nm () &gt; 27 nm</pre>	
when the visibility is not un	nform in all directions it should be estimated in the direction of least visibility	

- If the reported visibility is below 5 nm, then you <u>MUST REPORT</u> 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		- 0
ast weather shall be selected	such way that Past weather and Present weather together give as complete a description as possible of the weather in the time	interval
oncerned. For example if the	pe of weather undergoes a complete change during the time interval concerned, Past weather shall describe the weather preav	ailing
erore the type of weather inc	areu by Present Wesuler	
ne period covered by Past w	ther shall be: Six hours for observations at 0000, 0600, 1200 1800 UTC; three hours for observations at 0300, 0900, 1500, 2100 L	ITC;
te hour for observations at (	J0, 0200, 0400, 0500, 0700, 0800, 1000, 1100, 1300, 1400, 1600, 1700, 1900, 2000, 2200, 2300 UTC	
	thunderstorm(s), with or without precipitation	
	shower(s)	
	snow or rain and snow mixed	
	for an ice for an thick base (visibility < 0.5 pm)	
	sandstorm, duststorm or browing show	
	sky covering > 0.5 throughout period	
	sky covering > 0.5 and <= 0.5 during parts of period	
	sky covering <= 0.5 throughout period	
	please check all applicable weather conditions	

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

Clou	uds – Low	Height 0	– 6,500 FT	0 – 2 KM	
🛓 Clouds low					_ 🗆 ×
		***		J.	
⊙ CI1	C	CI2	() CI3		
⊖ Cl4	0	CI5	○ CI6		
A. A.					
⊖ CI7	C	CI8	⊖ CI9		
🔘 no cloud	Is CI		🔿 not	determined	
	click on the ap	propriate thumbnail	I for more cloud photo	s	
	Back OK	Cancel	Help	Stop	

- 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 – Mic	dle Height	6,500 - 23,000	FT 2 – 7 KM	
🔺 Clouds mid	1dle				
		¢	4 - L-1		
		⊖ Cm1	○ Cm2	O Cm3	
0	Cm4	○ Cm5	○ Cm6	○ Cm7	
11			The term of the de		
0	Cm7	○ Cm7	⊙ Cm8	⊖ Cm9	
0	no clouds Cm	click on the appropriate th	numbnail for more cloud pho	O not determined	
	Bac	к ОК	Cancel Help	Stop	

- 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)

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

<u>Altostratus</u> & <u>Altocumulus</u>: 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	
🛓 Clouds high					
	and the second second	- 2			
	O Ch1	O Ch2	Ch3		
		144444 . Mart Hanna		10	
	O Ch4	⊖ Ch5	O Ch6		
	○ Ch7	Ch8	⊖ Ch9		
	🔿 no clouds Ch click o	n the appropriate thumbnail for n	O not de nore cloud photos —	termined	
	Back	OK Cancel	Help	Stop	

- 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

otal cloud cover	amount of CI (or Cm if CI not present)	height of base of lowest cloud
O cloudless	0/8	cloudless 🔘 cloudless
O 1/8	O 1/8	0 - 50 m 🔘 0 - 150 ft
O 2/8	2/8	50 - 100 m 🔘 150 - 300 ft
O 3/8	) 3/8	100 - 200 m 🔘 300 - 600 ft
O 4/8	O 4/8	200 - 300 m 🔘 600 - 1000 ft
5/8	O 5/8	300 - 600 m 🔘 1000 - 2000 ft
0 6/8	0 6/8	600 - 1000 m 🔾 2000 - 3000 ft
0 7/8	○ 7/8	1000 - 1500 m 💿 3000 - 5000 ft
8/8 (compl. overcast)	0 8/8	1500 - 2000 m 🔘 5000 - 6500 ft
O obscured	O obscured	2000 - 2500 m 🔘 6500 - 8000 ft
O not determined	O not determined	>= 2500 m 🔘 >= 8000 ft
		not determined $\bigcirc$ not determined

- 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

sumame		full initials*	rank	discharge book**	
Smith		DES	2/M	· · · · · · · · · · · · · · · · · · ·	
Jones		ADJ	3/M		
Craig		RTC	C/M		
,			**discharge book or seama	n's card number, if applicable	
	e.y. A.D.		discharge book of seama	in a card number, in applicable	
		sinale	e click row to select observer		
		doubl	a aliak aall ta ina ad naw data		
			DITTER CALL IN TISAT TIAW CALL		

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

all sign	HGXTEST	Seawater temp	27.2 °C	Present weath.	haze
tation ID		True wind	140 ° / 15 kts	Past weath. 1st	snow, or rain and snow mixed
ate & Time obs	9 March 2020 18.00 UTC	Apparent wind		Past weath. 2nd	snow, or rain and snow mixed
sition	29° - 30' N 091° - 12' W	(Wind) wave per	4 sec	СІ	2 (code)
ourse & Speed	068 - 112° 11- 15 kts	(Wind) wave ht	3 metres	Cm	7 (code)
ressure (read+ic)	1023.1 hPa	1st swell dir	100 degr	Ch	4 (code)
ressure (MSL)	1026.7 hPa	1st swell period	9 sec	Total cloud cov	6/8
ressure tendency	0.4 hPa	1st swell height	2 metres	Amount CI (Cm)	4/8
har. press. tend.	8 (code)	2nd swell dir		ht lowest cloud	1000 - 1500 m (3000 - 5000 ft)
ir temp	28.5 °C	2nd swell period		Icing	
/et-bulb temp	22.7 °C	2nd swell height		Ice	
ew point	19.7 °C	Visibility	5.5 - 11 nm	Observer	

# 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.
  - Select Obs by E-Mail (default)
  - E-Mail will open up with the observation (BBXX) in the body of the E-Mail, addressed to shipobs@noaa.gov
  - Verify E-mail address: **Shipobs@noaa.gov**
  - If correct, send E-Mail.
- 2. If TurboWin+ does not recognize your E-mail client
  - Select **Obs to Clipboard**. This will copy your observation to the computer clipboard.
  - Open up your e-mail client, and then paste the observation (BBXX) into the body of the e-mail.
  - Address e-mail to **Shipobs@noaa.gov**
  - If correct, send E-Mail.
- 3. If your E-mail client is located on another computer
  - 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.
  - 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.
  - 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. \*\*
  - Address e-mail to **Shipobs@noaa.gov**
  - If correct, send E-Mail.

# **INMARSAT C**

### 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.

TurboWin+	Theres Area	Oracha Daabha	and Mana Info				
e Input Output Mainte	nance Themes Amver	Craphs Dashbo	ard Maps Into				
A CORMAND		<u> </u>		APR AWSR			
Call sign	HGXTEST		Seawater temp 27.2 °C		Present weath.	haze	
Station ID			True wind 140 ° / 1	5 kts	Past weath. 1st	snow, or rain and snow mixed	
Date & Time obs	9 March 2020 18.00 UT	P Save	Apparent wind			snow, or rain and snow mixed	
Position	29° - 30' N 091° - 12' V	Look In:	Documents			2 (code)	
Course & Speed	068 - 112° 11- 15 kts	MintakaCo	ommander 1+ 3.0.9			7 (code)	
Pressure (read+ic)	1023.1 hPa	TurboWin	+ 3.1.2 + 3.2.0 JPMS		4 (code)		
Pressure (MSL)	1026.7 hPa	TurboWin	+ 3.30 JPMS + 4.0 JPMS		6/8		
Pressure tendency	0.4 hPa					4/8	
Char. press. tend.	8 (code)	File <u>N</u> ame: Files of Type:	All Files		T	1000 - 1500 m (3000 - 5000 ft	
Air temp	28.5 °C	_,,		Save	Cancel		
Wet-bulb temp	22.7 °C			June			
Dew point	19.7 °C		Visibility 5.5 - 11	nm	Observer		
	ad	lding data: input r	menu, popup menu, toolbar	icons or click on the text la	abels or fields		-
BBXX HGXTEST 09	184 99295 70912 41697 61	415 10285 20197	40267 58004 70577 84274	22223 00272 20406 310// 4	0904 80227=		
		TurboWin+ ,	, last received barometer data vi	a USB: 09-Mar-2020 18:13:08	UTC		

- 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.

Satellite	SAC	Operator	Station Name	сссс	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	

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



# 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

### <u>IMMT</u>

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.

TurboWin	n+ message	×
?	Uploading log files should be undertaken when it is intended to return the stored log files to the National Meteor Do you wish to proceed	ological Service.
		Yes No

- 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></master.wff1234@globeemail.com>
То:	Steve.Jones@noaa.gov (your servicing PMO)
Subj:	meteo logs OCEAN SAILOR
please attac	h 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. , <u>ATTACH</u> 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 Amver Maritime Relations Office USCG Battery Park Building 1 South Street, 2nd FL New York, NY 10004-1499 U.S.A. Phone: 212- 668-7764 Fax: 212- 668-7684 E-Mail: benjamin.m.strong@uscg.mil

## 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.)

Amver Sailing	j Plan							
vessel	name	NWS HOUSTON	1		call sign	HGX1	IMO number	1234567
time of depar	ture [UTC] day	24 [01-31]	hour 22 IC	10-231 mir	ute 12 [00-59]	month MAR	[3 letters]	
				,				
current cours	e	045 [001-360	Ŋ					
speed (remai	nder voyage)	19.8 [nn.n e.g	. 09.5]					
departure	port	ТОКҮО			lat [dd-mm N/S]	35-36 N Io	on [ddd-mm W/E]	139-46 E
destination	tron	LOS ANGELES			lat (dd-mm N/S)	33-43 N	n (ddd-mm W/F)	118-17 W
1C5CITECOT	pore	LOGANGELLO			lat [dd mini two]	33 43 14	m [add min mc]	
TA destinati	on [UTC] day	03 [01-31]	hour 13 [(	)0-23] min	ute 00 [00-59]	month APR	[3 letters]	
1 2 3 4 5	RL GC RL GC RL	19.8 21.0 20.0 18.8	34-48 N 42-00 N 42-00 N 34-22 N	139-54 E 180-00 E 160-00 W 120-47 W	24 28 30 03	08:50 04:00 00:30 05:00		
* option	al ** of the next turni	ng point *** only re	equired if lay over		all times in UTC			
radio guard*		43778910	ſ					
medical*		🗌 none		nurse	PA	MD		
relay*		JASRE	P 🗹	AUSREP		MAREP		

### Example:

-'	e:
	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	ļ,
you <u>DO NOT</u> have to submit a Position Report (PR) **	

vessel name	NWS HOUSTON	call sign HGX1	IMO number	1234567
time of position [UTC] day	01 [01-31] hour 01 [00-23]	minute 12 [00-59] month	DEC [3 letters]	
current position	35-00 N lat [dd-mm N/S]	135-23 W Ion [ddd-mm	W/E]	
current course	120 [001-360]			
speed (remainder voyage)	16.1 [nn.n e.g. 09.5]			
destination* port	LOS ANGELES	lat [dd-mm N/S] 33-43 N	lon [ddd-mm W/E]	120-47 W
ETA destination [UTC]* day	03 [01-31] hour 23 [00-23]	minute 10 [00-59] month	DEC [3 letters]	
radio guard*				
radio guard* relay*	V JASREP V AUSRE	P 🗹 CHILREP	MAREP	
radio guard* relay* Remarks*	☑ JASREP ☑ AUSRE	P 🗹 CHILREP	MAREP	

### 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.



- **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.)

Amver Dev	viation Report								_ 🗆 ×
vessel	name	NWS HOUSTON			call sign	HGX1	IMO number	1234567	
time of pos	ition [UTC] day	29 [01-31]	hour 12 [00-23	minute	00 [00-59]	month NOV	[3 letters]		
current po	sition	42-00 N lat [	dd-mm N/S]		166-54 W	lon [ddd-mm W/E]			
current co	urse	090 [001-360]							
speed (ren	nainder voyage)	17.5 [nn.n e.g. (	9.5]						
destinatior	port	LOS ANGELES			lat [dd-mm N/S]	33-43 N Ion	[ddd-mm W/E]	120-47 W	
ETA destin	ation [UTC] day	04 [01-31]	hour 10 [00-23	] minute	00 [00-59]	month DEC	[3 letters]		
route	method [RL,GC.	. speed* [knots	lat** [dd-mm N/	lon** (ddd-mm	ETA [day]	ETA [hh:mm]	ETD*** [day]	ETD*** [	nh:mm]
1									-
3									P
4									
6									Y
* op	tional ** of the next turn	ing point *** only re	quired if lay over	all	times in UTC				
radio guar	j*	43691	167						
relay*		JAS	REP 🗹	AUSREP		EP 🗹 MAI	REP		
Remarks*	REDUCED SPEED DU	E TO WEATHER							
optional	AMVER web site	E-ma	il Clipboard	Cance	I Impor		only	import saved Sa	ailing Plans

#### Example:

e	
	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.)

-	Amver Arrival Report							_ 🗆 X
	vessel	name	NWS HOUSTON		call sign	HGX1	IMO number 1234567	
	destination	port	LOS ANGELES		lat [dd-mm N/S]	33-43 N Ior	n (ddd-mm W/E) 129-47 W	
	arrived [UTC]	day	03 [01-31]	hour 22 [00-23]	minute 00 [00-59]	month DEC	[3 letters]	
- 28								
-	relay*		JASREP	AUSREP	CHILREP	MAR	EP	
1	-							
	Remarks*							
	* optional <u>AMVER</u>	R web site	E-mail	Clipboard	ancel Import		only import saved S	Sailing Plans —
	* optional <u>AMVER</u>	R web site	E-mail	Clipboard C	ancel Import		only import saved S	Sailing Plans

### Example:

	A/NWS HOUSTON/HGX1/1234567//
	K/LOS ANGELES/3343N/12047W/032200Z DEC//
	Y/JASREP/AUSREP/CHILREP/MAREP//
	Z/EOR//
1	

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.

Appendix A

# 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 <u>are accurate</u>. 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

![](_page_41_Picture_14.jpeg)

Click Next to start the installation process

### Appendix A

![](_page_42_Picture_2.jpeg)

Click the radial button to accept license agreement (Royalty free license to use software)

![](_page_42_Picture_4.jpeg)

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"

![](_page_42_Picture_9.jpeg)

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

Mrtaka Duo USB       OMC-140 AWS LAN         Mrtaka Star WFi       Vasala HMP155 USB         Mrtaka Star WFi       Vasala HMP155 USB         Vasala PTB220 senal       once         Vasala PTB230 senal       once         EUCAWS AWS senal       once         Instrument port settings       Zod instrument port settings         Base per second       57600         data bits       parity         parity       none         port number       AUTCMATICALLY         AUTCMATICALLY       port number	meteo instrument		2nd meteo instrument		GPS	
Linstrument port settings  Linstrument port settings  DPS port number  DPS port settings  DPS port number  DPS port settings  DPS port settings  DPS port settings  DPS port settings  DPS port number  DPS port number  DPS port number  DPS port number  DPS port settings  DPS port settings  DPS port settings  DPS port number  DPS port number DPS port number  DPS port number  DPS port number  DPS port number  DPS port number  DPS port number DPS port number DPS port number  DPS	Mintaka Duo US8 Mintaka Star USB Mintaka Star WiFi Vaisala PTB220 ser Vaisala PTB330 ser EUCAWS AWS ser none	OMC-140 AWS LAN OMC-140 AWS serial	Mintaka StarX WFi     Vaisala HMP155 USB     enne		GPS (NMEA 0183)     enne	
bits per second     57800     bps     bits per second     bits per second       data bits     data bits     data bits     port number       parity     none     parity     parity       stop bits     1     stop bits     1       port number     AUTOMATICALLY     port number     use FAMC sentence (recommended)	t instrument port setting	ŝ	2nd instrument port settings		GPS port settings	
data bits 8 0 0 data bits 0 0 port number 0 use FAIC sentence (recommended) 0 use FAIC sentence (recommended) 0 use FAIC sentence 0 port output of 0 port output o	bits per second	57600	bps	T	bits per second	7
parky none parky of the stop bits of the	data bits	8	data bits	*	port number	7
stop bits 1 • stop bits • • • • • • • • • • • • • • • • • • •	panity	none	parity	7		
port number AUTOMATICALLY  port number  use RMC sentence (recommended) use GGA sentence	stop bits	1	stop bits			
use RMC sentence (recommended)	port number	AUTOMATICALLY	port number			
					U use RMC sentence (recon	imended)
Especially for laptops, set all the energy saving settings, display excepted, to 'never'		Especia	lly for laptops, set all the energy saving	settings, display excepted	i, to 'never'	

Appendix A

-	Input the following setting	s
	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 o	r serial port): Select "none"
	GPS port settings: lea	ve 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.

![](_page_43_Picture_7.jpeg)

- > Wait 2 minutes then click on the Pressure Icon
- Mintaka pressure reading will automatically be inserted. Click Ok

d	oes the reading indicate Mean Sea Level pres	sure	🔾 yes 💿 r
	barometer reading (hPa)	1021.5	1860.0 - 1070.01
	instrument correction (ic)** (hPa)	0	[-4.0 - 4.0]
	current deepest draft (metres)	9	[0.0 - 50.0]

After running for 3 hours the Mintaka pressure tendency reading will automatically be inserted.

- Appendix A
- 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.

) 1 🚥 🛥 厂 P	
Call sign	TESTHGX
Masked call sign	
Date & Time obs	3 July 2017 16.00 UTC
Position	22° - 30' N 092° - 12' W
Course & Speed	
Pressure (read+ic)	1017.4 hPa
Pressure (MSL)	1020.8 hPa
Pressure tendency	1.0 hPa
Char. press. tend.	5 (code)
Air temp	
Wet-bulb temp	
Dow point	

## **Possible Problems**

Call sign	TESTHGX	Seawater temp Present weath	
Masked call sign		True wind dir Past weath. 1st	
Date & Time obs		True wind speed Past weath. 2nd	
Position		(Wind) wave per Cl	
C TurboWin+	ROMETER] COM4, serial co	n port not available (jssc.SerialPortException: Port name - COM4; Method name - openPort(); E	xception type - Port not found.)
C TurboWin+	ROMETER] COM4, serial co	n port not available (issc.SeifalPortException: Port name - COM4; Method name - openPort(); E	ixception type - Port not found.)
C TurboWin+	ROMETER] COM4, serial co	n port not available (issc.SerialPortException: Port name - COM4; Method name - openPort(); E	ixception type - Port not found.)
C TurboWin+	ROMETER] COM4, serial co	n port not available (issc. SerialPortException: Port name - COM4; Method name - openPort(). E	ixception type - Port not found.)
C TurboWin+ P P Char. press. tend. Air temp Wet-buib temp	ROMETER] COM4, serial co	n port not available (issc. SerialPortException: Port name - COM4; Method name - openPort(). E           2nd swell dir         h lowest cloud           2nd swell geriod         Licing           2nd swell height         Lice	xception type - Port not found.)
C TurboWin+ P P Char: press.tend. Air temp Wet-bulb temp Dew point	ROMETERJ COM4, serial co	n port not available (issc. SerialPortException: Port name - COM4; Method name - openPort(). E	xception type - Port not found.)

### 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:

pressure graph

> (1) In the system tray, right click on the TurboWin+ icon

then select

PP

![](_page_45_Figure_8.jpeg)

> (2) On main TW+ page, click on Graphs and select Sensor data pressure.

![](_page_45_Picture_10.jpeg)

7-day barograph pressure trace will be displayed.

![](_page_45_Figure_12.jpeg)

- 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.

![](_page_45_Figure_15.jpeg)

## 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 -	Туре	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

![](_page_47_Figure_2.jpeg)

# 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"

![](_page_48_Picture_4.jpeg)

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

meteo instrument		2nd meteo instrument		GPS
<ul> <li>Mintaka Duo USB</li> <li>Mintaka Star USB</li> </ul>	OMC-140 AWS LAN	Mintaka StarX WiFi     Vaisala HMP155 USB		GPS (NMEA 0183)
Mintaka Star WiFi	0			0
Vaisala PTB220 seria	1	C		
Vaisala PTB330 seria	1			
EUCAWS AWS seria				
bits per second	57600	bps	<b>T</b>	bits per second
t instrument port settings		2nd instrument port settings		GPS port settings
Dits per second		ups		
data bits	8	data bits	Y	port number
parity	none	parity	Y	
stop bits	1	stop bits		
port number	AUTOMATICALLY	port number	T	
				O use RMC sentence (recommended)
				Use GGA sentence
	Especially t	for laptops, set all the energy saving	settings, display excepte	d, to 'never'
	Lopecially			

• Input the following settings

1<sup>st</sup> meteo Instrument: Select Mintaka Star USB

1<sup>st</sup> instrument port settings

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

2<sup>st</sup> meteo Instrument: Select Mintaka StarX WiFi 2<sup>st</sup> 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.

![](_page_49_Picture_19.jpeg)

### **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

![](_page_50_Figure_8.jpeg)

- 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.

![](_page_50_Picture_13.jpeg)

## **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.

![](_page_51_Picture_9.jpeg)

![](_page_51_Picture_10.jpeg)

( 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 2<sup>st</sup> meteo Instrument select "none".
- Verify the instrument port settings for 1<sup>st</sup> 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.

Password JWS01

50

# **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).

TurboWin+		
File Input Output I	Maintenance Themes Amver Gra	aphs Dashboard Maps Info
Call sign	HGXTEST	Seawater temp

EMOS automated hourly observations will consist of the following elements:

Date & Time UTCShip Call SignShip Lat/LongShip Course & SpeedSea Level PressurePressure TendencyAir TemperatureDew 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.

**<u>Configuring TW+ 4.0.x for Auto Transmit</u>** 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:

Maintenance	Themes Amver	Graphs [
Station data	L	
Email settin	gs	
Log files set	ttings	
Obs format	setting	
Serial / USE	3 / LAN device settir	ngs
WOW / API	R / APTR / AWSR s	settings
Server setti	ngs	
GUI settings	5	
Observers.	2	
Captains		
Move log file	es to (USB) disk	
Move log file	es by Email	
Show all ma	aintenance data	
Export all m	aintenance data	
Import all m	aintenance data	

### Appendix C

## E-Mail Settings

LL] address recipient	shipobs@noaa.gov	cc*	Email subject	Weather Observation
ORMAT 101]***	• obs in body • o	bs in attachment		
MTP HOST]* ship email addr.		server	password**	port** 587
MAIL]* your Gmail address		Gmail app password		● TLS ○ SSL
AHOO]* your Yahoo address		Yahoo app password		● TLS ○ SSL
onal ** c red for: 'Maintenance -> Move lo	often not required	*** consult your PMO		
s email recipient		a studies		

### [ALL]

address receipt: Email Subject: shipobs@noaa.gov 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 T	ransmit
	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.

Appendix C

### WOW and AP(&T)R and AWSR Settings

Ovv (vvealner Observation vvebsite)		AP[&T]R (Automated Pressure [& Temperature] Reports)
publish on WOW, see: wow.metoffice.gov.uk		✓ report pressure [& temp] auto. (barometer* + GPS)
WOW site ID		1 hour     0 3 hours     6 hours
WOW pin		* recommended: static head or flexible tube to measure outside pressure
reporting interval		AWSR (Automatic Weather Station Reports)
5 minutes (barometer connected)		report all measured data automatically (AWS connected)
10 minutes (barometer connected)     15 minutes (barometer connected)		O 1 hour O 3 hours O 6 hours
O 60 minutes (barometer connected)		AP[&T]R / AWSR send method
		Server Met Center*      GMail**
		U SMTP host** U Yahoo Mail**
VOW and AP[&T]R		* Maintenance -> Server settings ** Maintenance -> Email settings
normal steaming draft (metres, e.g. 12.6)	8 [0.0 - 50.0]	

### 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+.

Appendix C

🛃 Serial/USB or LAN con	inection settings			2	- 0 :
1st meteo instrument		2nd meteo instrument		GPS	
<ul> <li>Mintaka Duo USB</li> <li>Mintaka Star USB</li> <li>Mintaka Star WiFi</li> <li>Vaisala PTB220 se</li> <li>Vaisala PTB330 se</li> <li>EUCAWS AWS seri</li> <li>none</li> </ul>	<ul> <li>OMC-140 AWS LAN</li> <li>OMC-140 AWS serial</li> </ul>	<ul> <li>Mintaka StarX WiFi</li> <li>Vaisala HMP155 USB</li> <li>none</li> </ul>		<ul> <li>○ GPS (NMEA 0183)</li> <li>● none</li> </ul>	
1st instrument port setting	gs	2nd instrument port settings		GPS port settings	
bits per second	57600	bps Ciris R	Y	bits per second	7
data bits	8	data bits	*	port number	7
parity	none	parity	<b>*</b>		
stop bits	1	stop bits	Ŧ		
port number	AUTOMATICALLY	port number	T		
				Use RMC sentence (reco	immended)
	Especially for	aptops, set all the energy saving s	ettings, display excepte	ed, to 'never'	
		ОК Са	ancel		

### Serial/USB or LAN Connection Settings:

• Input the following settings

1<sup>st</sup> meteo Instrument: Select Mintaka Star USB

### 1<sup>st</sup> instrument port settings

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

2<sup>st</sup> meteo Instrument: Select Mintaka StarX WiFi

2<sup>st</sup> 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+.

Call sign	HGXTEST	Seawater temp	Present weath.	
Station ID		True wind	Past weath. 1st	
Date & Time obs	7 February 2020 16:00 UTC	Apparent wind	Past weath. 2nd	
Position	29° - 28' N 95° - 05' W	(Wind) wave per	сі	
Course & Speed		(Wind) wave ht	Cm	
Pressure (read+ic)	1013.7 hPa	1st swell dir	Ch	
Pressure (MSL)	1016.59 hPa	1st swell period	Total cloud cov	
Pressure tendency	1.1 hPa	1st swell height	Amount CI (Cm)	
Char. press. tend.	1 (code)	2nd swell dir	ht lowest cloud	
Air temp	22.9 °C	2nd swell period	Icing	
Wet-bulb temp	14.1 °C	2nd swell height	Ice	
Dew point	7.1 °C	Visibility	Observer	

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.

Call sign	HGXTEST	Seawater temp	29.7 °C	Present weath.	haze	
Station ID		True wind	180 ° / 15 kts	Past weath. 1st		
Date & Time obs	7 February 2020 16.00 UTC	Apparent wind	-	Past weath 2nd		
Position	29° - 28' N 95° - 05' W	(Wind) wave per	3 sec	С	2 (code)	
Course & Speed		(Wind) wave ht	3 metres	Cm	6 (code)	
Pressure (read+ic)	1013.8 hPa	1st swell dir	150 degr	Ch	8 (code)	
Pressure (MSL)	1016.63 hPa	1st swell period	8 sec	Total cloud cov	6/8	
Pressure tendency	0.9 hPa	1st swell height	2 metres	Amount CI (Cm)	3/8	
Char. press. tend.	1 (code)	2nd swell dir		ht lowest cloud	1500 - 2000 m (5000 - 6500 ft)	
Air temp	22.9 °C	2nd swell period		lcing		
Wet-bulb temp	14.1 °C	2nd swell height		lce		
Dew point	7.1 °C	Visibility	5.5 - 11 nm	Observer		
	25 minutes	to go before next autom	ated upload, you can now	add observation data		

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.

File	Input Output Mainte	enance Themes Amver Graphs Das	shboard Maps	Info
0	A 63 🔽 🖟	∿ <b>⊆∦≠</b> ≁⊕⊕⊴	<u>`₽₿(</u>	Statistics (internet) Calculator
	Call sign	HGXTEST	Seawater	System log send System logs
	Masked call sign		True wind	About
	Date & Time obs	10 December 2019 17.00 UTC	Apparent w	vind

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  $^\circ\text{C}$ 

21-Nov-2019 01:00:04 UTC [APR] air temp at sensor height = 22.9  $^\circ\mathrm{C}$ 

21-Nov-2019 01:00:04 UTC [APR] wet-bulb temp at sensor height = 18.5  $^\circ\text{C}$ 

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.

P Tu	ırboWin+			
File	Input Output M	laintenance Themes Amver G	raphs Dashboard Maps Info	
0	A 63 🔤	<u> </u> ° <b>∿ <u>C H</u> ≥ <del>↑</del> </b>		
	Call sign	HGXTEST	Seawater temp	

**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.

Appendix D

# THRANE & THRANE (Sailor) INMARSAT Procedure

- 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**

- At the MAIN MENU highlight APPLICATION option and Press <ENTER>. Select ADDRESS BOOK and Press <ENTER>. Select NEW in Address Book and Press <ENTER>.
- At the EDIT ADDRESS section type in NEW NAME of file. (Example name: WEATHER OBS) and Press <ENTER>.
  - 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)
  - At the Bottom of the screen a Box will appear to enter the SPECIAL ACCESS CODE. Enter the number 41 and Press <ENTER.</li>
  - Set the **BIT to 7**, if it is not already done and Press <ENTER>.
  - $\circ$  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.
- 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.** 
  - 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.

Appendix D

# FURUNO INMARSAT Procedure

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- 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**

- 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**

- 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.
  - o A window will appear saying: SUCCESSFUL SENDING MESSAGE.
  - The lower left corner of the screen will show the STATUS of the message.
- 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.

Appendix D

# JRC (Japan Radio Company) INMARSAT Procedure

- 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.

![](_page_62_Figure_1.jpeg)

![](_page_62_Figure_2.jpeg)

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.

#### Appendix F

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