

## Frequently Asked Questions (FAQs)

Following is a list of frequently asked questions (FAQs) covering common problems encountered when operating the WMB-160/80F system. Note the Trouble Shooting section of this manual covers most of the typical operational problems, and this section should be consulted only after reading the Trouble Shooting section. Each FAQ question is numbered and answered in the following pages.

- 1) The system is transmitting too slowly, how can I speed it up?
- 2) Why does the range not change on the display when I move the Range Dial?
- 3) Why is no sea-floor profile generated in the 3-D or contour views after the system initially starts transmitting?
- 4) Why do gaps appear between the swath footprints in the contour and 3-D views?
- 5) The system has stopped transmitting without operator intervention. Why?
- 6) When I click the MODE button, or run a replay (demo) file I get no picture on the display. Why?
- 7) When I press the STBY button the button goes red and a number on it counts up, but there is no activity on the WASSP display. How do I fix this?
- 8) What does the error message that appears when I run WASSP mean? Is my WASSP system faulty?
- 9) Why is there a ring displayed just above the sea-floor? What causes these "ring" marks? How can I get rid of them?
- 10) What is the constant signal on the sonar/fish finder display?
- 11) Why is my WASSP system not tracking the sea-floor?
- 12) Why doesn't the sea-floor line up when I go over it again?
- 13) Why does the sea-floor move if my WASSP system is motion compensated?
- 14) The mode button animates as if pinging but nothing happens. What is wrong?

**Question 1 The System is transmitting too slowly, how can I speed it up?**

Remember that the WMB-160/80F system must acquire twice the depth of standard sounders to enable the full sea-floor profile across 120°. If the entire profile is to be captured, the ping rate will need to be at least half that of a standard single beam sounder.

Manually adjusting the range down will increase the ping rate significantly but will result in the loss of sea-floor information, including break up of the 3-D display after a point. If you are only interested in the centre beam of the triple beam display, the range control can be reduced to just over half the current depth in metres. The optimal range is twice the current depth in metres. The range control should normally be set to automatic (green digital display).

Other programs running at the same time as the WMB-160/80F program consume processing power and take processing time away from the WMB-160/80F system, slowing down the rate of transmission. For optimal performance, ensure the WMB-160/80F program is the only application running.

**Question 2 Why does the range not change on the display when I move the Range Dial?**

Double-click each viewing mode (sonar, single / triple beam, 3-D, contour, and sidescan) to reset the view so that automatic range control is re-enabled. The range continues to track the range dial while in this mode. If any zooming is done with the wheel mouse then automatic range control will be disabled again until you once again double-click on the appropriate view.

**Question 3 Why is no sea floor profile generated on the 3-D or contour views after the system initially starts transmitting?**

Check that the NMEA data input is being received and that the communications ports are configured correctly. If the range for data collection is too small, the system cannot acquire the sea-floor and cannot track the range automatically. Enter the manual range mode and set the range deep enough to acquire the sea-floor before returning to the automatic range mode. Also check that the Contour Map option is tracking the seafloor. See Page 17.

**Question 4 Why do gaps appear between the swath footprints on the contour and 3-D views?**

There are multiple possibilities here:

- ▶ The vessel may be travelling too fast to map the sea-floor in this depth of water.
- ▶ The range setting could be set much larger than necessary and as a result the system is transmitting slower than is optimal.
- ▶ The computer is giving processing power to another operation (other than the WMB-160/80F program) causing processing of sounding information to take longer as a result lowering the transmission rate of the WMB-160/80F system.
- ▶ The GPS data has come in at irregular intervals.
- ▶ The WMB-160/80F system has stopped. See Question 5.
- ▶ The GPS data source may have dropped out completely preventing the system from mapping the sea-floor data to its appropriate location. Ensure an isolation device is being used to convert the current loop NMEA to RS-232.
- ▶ The sea-floor detection may have briefly failed due to aeration or excess noise.

**Question 5 The system has stopped transmitting without operator intervention. Why?**

If time is taken from the system by another application for long enough, the WMB-160/80F system may restart transmission in a number of seconds. If the system does not restart, try stopping and then starting the system using the MODE button on the tool bar. If this does not work, try to restart the WMB-160/80F program and the transceiver. The most likely cause of this is a sudden power supply spike or drop.

**Question 6 When I click the MODE button, or run a replay (demo) file I get no picture on the display. Why?**

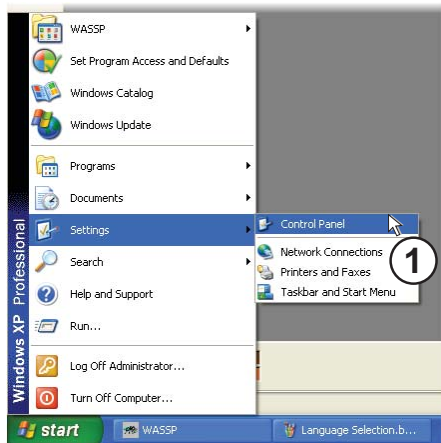
The WMB-160/80F is designed to run in 32-bit colour, with a minimum 1024x768 resolution. Check your display settings and change if required.

STEP	PROCEDURE	SCREEN
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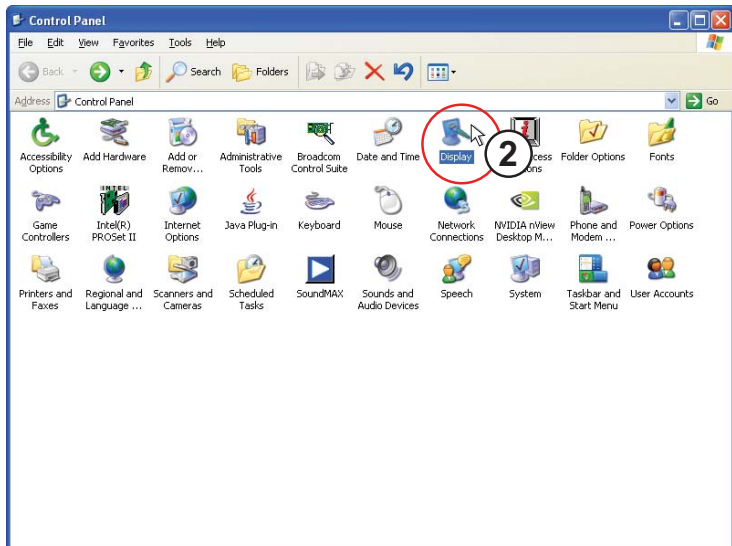
- Make sure your display options are correctly configured.

Right-click on the desktop and click **Properties**.

Or, click **Start > Settings > Control Panel**.



- In the **Control Panel**, double-click **Display**.

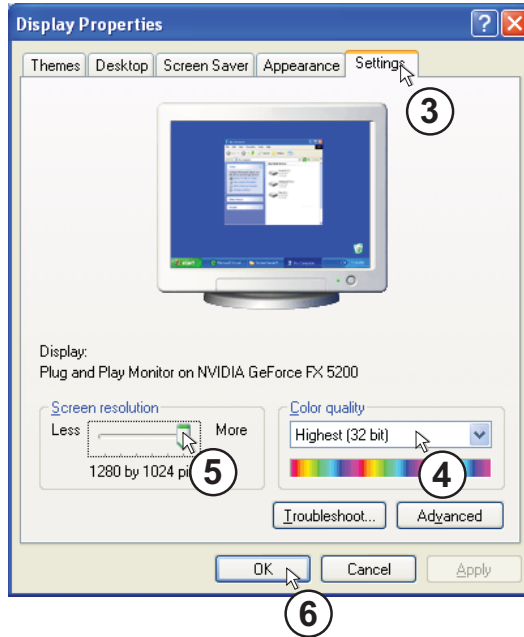


STEP	PROCEDURE	SCREEN
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- 3 In the **Display Properties** box, click the **Settings** tab.
- 4 In the **Colour quality** box, set the colour quality to 32-bit.
- 5 On the **Screen resolution** area slider bar, set the resolution to 1024 by 768 pixels.
- 6 Click **OK**.  
The new screen settings are applied.



**Note: Steps 5 and 6 are optional.**

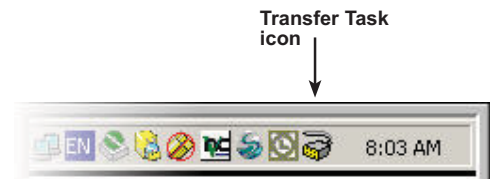


- 7 Return to the WMB-160/80F program.

**Question 7 When I press the Stby button, the button goes red and a number on it counts up, but there is no activity on the WASSP display. How do I fix this?**

First make the following checks of your WASSP installation:

- Check that the Transceiver power is ON and the green LED light on the front panel flashes every few seconds.
- Make sure the CAT5 network cable is connected at both the Transceiver and the PC ends (unplug and re-plug to make sure).
- Check that the Transfer Task application is running (look for the icon on the Start Bar at the bottom of your PC screen) and was running when you started WASSP. If not, restart WASSP after running the Transfer Task application.



**Question 8 What does the error message that appears when I run WASSP mean? Is my WASSP system faulty?**

Consult the list below for the cause/course of action if an error message is displayed in WASSP.

- **Cannot Find Tide TCD File:**

Use the tide function to search for a valid database file.  
Check file is present in directory. Reinstall if not present.

- **Error Loading TVG File:**

Check in the Windows Control Panel under Regional and Language Options, Regional Options, Customize, Numbers Tab, that the "Decimal Symbol" setting is set to a `.` rather than a `,` (comma)  
Check file is present in directory. Reinstall if unable to locate.

- **"Too Many Files With This Name. Aborted."**

This occurs when storing raw data using the data recorder if there are more than 1000 files of the same initial name in a directory. Change the name or directory if you wish to continue to save raw data files. NOTE unless you require the raw data for some purpose it is not recommended to record raw data files – these files are very large ( $\approx$  2Gb/hour) and will require careful management in order to prevent the Hard disk drive of your computer from becoming full. A computer with a full disk drive becomes unusable. Try to have at least 10 Gb of free drive space at all times to allow sufficient room for system file management.

- **Cannot set power levels. Power Level x invalid:**

This occurs when setting the power level settings when the depth values do not increase as the power levels increase. Check that every depth selection for each sequential power level is greater than the previous.

- **No Dongle Found In System. Please Plug Dongle In And Try Again.**

This error can occur if the USB device has not been detected by windows or the Dongle is not connected to the system. Remove the dongle if it is already in place and then reconnect it to the computer after a few seconds. Press the retry button. The system will operate in replay mode without a WASSPDONGLE but will not work in real time.

- **No License File Found On Dongle.**

The most likely cause of this error is that the WASSP dongle has been modified or the contents have become corrupted.

If the license file has been removed from the dongle the system will not operate.

Contact your dealer to source a new WASSPDONGLE – you will need to return your current faulty Dongle.

- **License File Is Corrupted.**

The licence file on the WASSPDONGLE has been modified in some way and is no longer valid. Contact your dealer to source a new WASSPDONGLE – you will need to return your current faulty Dongle.

**No Attitude: No Pitch:**

The system is configured to compensate for Pitch and there has been a gap of multiple pings where there was no Pitch data received. Check the Motion Sensor configuration in WASSP. Also check the Serial Port configuration in the WASSP Transfer Task and finally that the sensor itself is on and operating correctly.

• **No Attitude: No Heave:**

The system is configured to compensate for Heave and there has been a gap of multiple pings where there was no Heave data received. Check the Motion Sensor configuration in WASSP. Also check the Serial Port configuration in the WASSP Transfer Task and finally that the sensor itself is on and operating correctly.

• **No Attitude: No Roll:**

The system is configured to compensate for Roll and there has been a gap of multiple pings where there was no Roll data received. Check the Motion Sensor configuration in WASSP. Also check the Serial Port configuration in the WASSP Transfer Task and finally that the sensor itself is on and operating correctly.

• **LINK ERROR:**

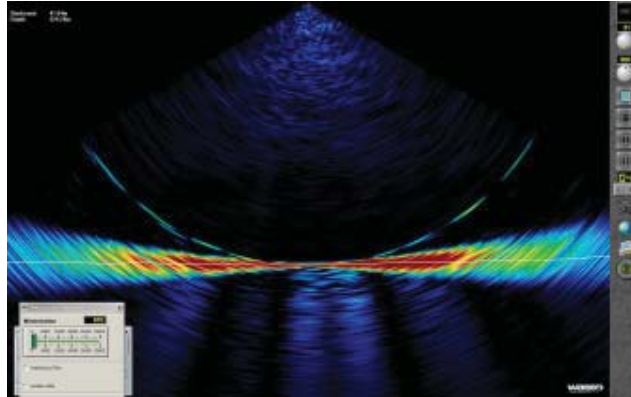
This error message indicates that there has been a data corruption internally in the Transceiver between the Receiver and the DSP. The WASSP system will not function at this point. Reset the power to the Transceiver – if the message continues to be shown return the system to your dealer for service.

- **TX PWR ERROR:** This warning informs the operator that the Transmitter did not reach full voltage during the system start up sequence - the most common cause for this is a low 24V power supply voltage/current. If the system appears to operate correctly after you see this message then this is not an issue. If the system does not appear to function then the error implies that the Transceiver Transmitter unit has failed - Contact your Dealer for further assistance.

- **CARRIER REF ERROR:** This error message indicates that there has been a failure in the synchronised internal timing chain of the Transceiver. If restarting the power to the Transceiver does not clear this error return the Transceiver to your dealer for service.

- **SERIAL FAILURE:** This error message indicates that an internal DSP board communications failure has occurred. The WASSP system will not function correctly at this point. Turn the power off/on at the Transceiver – if the message continues to be shown return the system to your dealer for service.

- **System Initialisation Failure:** This error implies that the system was not fully operational when the WASSP GUI was run. Shut down the shuttle P.C. and the Transceiver and do a complete re-start. If the error message continues to be shown, refer to the troubleshooting section on Page 76, or contact your your dealer for further assistance.

**Question 9 Why is there a ring displayed just above the sea-floor? What causes these 'ring' marks? How can I get rid of them?**

This ring is a by-product of the multi-beam technology of your WASSP system. It is supposed to be there but in practice we want to make it as difficult to see as possible. To avoid these rings confusing the sea floor tracking algorithms or being confused as fish marks the Minimisation feature allows these rings to be suppressed on the Sonar display. Care should be taken because hiding these rings will also make it hard to see any signals below them such as fish on the bottom.

When a signal arrives at the receiver it creates a shadow like effect that creates a ring of much weaker echoes, the stronger the signal the stronger the rings. Unfortunately the signal return from the sea floor is many orders of magnitude stronger than a fish echo and thus the shadow of weaker echoes can be comparable to fish targets.

**How do I know if I have a problem then?** When running with Auto Power By Signal (BLUE) and the power level is above 1 then the required minimisation should be 1500 or less. The lower this is the more chance of seeing fish below the ring but the more chance of the rings being visible on the Sonar display. If you are required to use a higher power level then it may well be impossible to hide them completely with Minimisation.

If you have the system working with no sign of these rings and then they start to appear and you have not changed the Minimisation settings then something has changed for the worse – keep reading.

a) Too much power – This is the most common cause of problems. When there is too much acoustic energy in signals returned from the sea floor they may distort. Distortion of the signals will cause ambiguity in resolving the position and thus create rings of very high amplitude. Unless in very shallow water Auto power by Signal mode will automatically try to select the highest power level that doesn't cause distortion. You may get the occasional strong return causing faint rings, but this is good so that you have as much power as practical for detecting fish.

b) Gain settings. This ring will appear more or less significant as the sonar gain is changed. The Normalise Display option will change the relative intensity.



- c) Shading of Receiver – Any difference across the receiver caused by marine growth or any other irregularity across the face of the receiver will contribute to a reduction in the discrimination of the WASSP system. This will lead to higher intensity rings.
- d) Reconnection Fault – If the cable from the Transceiver to the Transducer was disconnected and has been reconnected recently it is possible the receiver is connected incorrectly. Check the colour codes of Ethernet connections.
- e) Calibration – It is possible that the system calibration was disrupted by another sounder, close the WASSP GUI and re-run to allow the system to re-calibrate.
- f) Electronics Failure – If one or more central channels fail in the electronics this will increase the intensity of the ring.
- g) Configuration – Changes made in the Technician configuration could significantly change the system performance. Restart the WASSP GUI if you are unsure what state the system is in. The Configuration Manager has a Defaults option to load your default configuration settings if all else fails.

## Question 10

### **What is this constant signal on the sonar/fish finder display?**

There are many sources of noise, interference and general acoustic reflections which can make these displays difficult to use. A description of the different types of noise and ways in which you might be able to determine and eliminate them follows.

*Sonar/Sounder* – Other Sound producing devices will produce constant blips on the WASSP sonar display which will vary in intensity and size depending on the transmission power and angle of the system. If you wish to continue using your other sounders you can suppress this noise using the Interference Filter option.

*Aeration* – Air in the water around the transducer can cause transmitted signals to be absorbed or reflected prematurely resulting in false signal reports from the transducer.

*Biomass* – Large bodies of photo plankton can float through the sea covering very large areas. This may be the source of large areas of constant faint signal return through a region of the water column.

*Own Transmission* – WASSP shows all received signals starting from half way through the transmission pulse. Thus you should see a red or yellow ring at the top of the Sonar display. As power level and pulse width increase this signal return will be stronger and larger.

*Keel Reflection* – If the WASSP system is mounted in such a way that transmitted signals can reflect off the ships hull you may find that there is a constant strong return shown on the sonar display. This may happen even if the hull is just outside the 120degree transmission swath. If a strong signal follows the boat and is within the dimensions of the ship then this signal is probably a reflection off

your own ship. This will make it hard to detect fish at this depth but otherwise shouldn't affect the performance of your WASSP system.

*Electrical* – There are an almost infinite number of ways in which Electrical Noise can influence system performance. The first priority is that the system be well grounded – this means a large and preferably short grounding wire connects the Transceiver to the Power supply ground. WASSP is relatively protected by noise on Power supply sources but a very noisy supply could cause trouble. More likely causes of electrical interference are if noisy, high power machinery or wiring is run beside the transducer cable. Electrical noise is either constant, regular or transmit power dependant.

*Water Temperature Layers* – A thin faint horizontal line that is present ping after ping in the same place could be a temperature layer. The Sea is often layered with various temperature layers due to pressure and surface mixing. Often a reflection can be created at the depth where a significant change in water temperature occurs – causing an acoustic return.

*Prop Noise* – If the turbulent water flow off the props is directed onto the transducer face this could create aeration noise. Especially relevant for lower frequency models – it may be possible to pick up the prop noise as an acoustic source. For this reason it pays to mount the transducer some distance from the ships props. Prop acoustic noise will appear on the side of the Sonar display close to the prop and will look like a regular pulse or solid signal depending on the rotation speed.

*Vibration* – Shudders of vibration and vibrating mounting structures can induce significant noise. Additionally a vibration in mounting can cause motion compensation of the system to fail. Sharp jolts and vibrations will generate rings of high signal.

## **Question 11 Why is my WASSP System not tracking the Sea-floor?**

Any source of Noise mentioned in the answer to Question 9 above can cause the sea-floor detection to fail if it is bad enough. In some cases bad noise can cause the tracking to fail and it could take a number of pings for the WASSP system to re acquire the sea-floor. In some instances noted below and in bad cases of noise it may not be possible to automatically resume sea-floor tracking.

*Power* – If too much power is being used for the depth of water you are operating in, the sea-floor tracking signal could be noisy especially if there is enough power to cause signal distortion as the tracking algorithm may track the rings produced by this. Conversely, too low a power level may result in the signal levels from the sea floor being below the noise floor of the system and thus they will be ignored as noise. This will tend to cause the surface noise to be considered as a bottom detection candidate.

*Depth* – The WASSP system can acquire a sea floor profile swath 3.5 times the nadir depth but this requires the acquisition depth to be at least twice that of the maximum depth on that swath. WASSP takes this into account and when the Depth Dial reads 100m the system acquires to 210m. If the acquisition depth

is in manual mode or the system fails to track down with the sea-floor then you may need to manually increase the system range to allow it to re acquire the sea-floor.

*Fish* – Occasionally a very large dense school of fish can be detected as a mountain on the sea-floor. This should be easy to determine with a second pass over the area at a later time. This function also allows wrecks to show on the contour display as these are often similar in density to fish schools.

*GPS Position* – If there is no position the WASSP system will not output depth data and will cease to map the sea-floor.

*Minimisation* – The sea-floor tracking is affected by the Minimisation level; ensure this is set appropriately as described in the Installation Manual on Page 49.

## **Question 12 Why doesn't the sea-floor line up when I go over it again?**

There are several factors which can cause this to show on your WASSP display however remember that if the vessel is operating in a high sea state, your motion sensor may not be able to fully compensate for the vessel's movement:

*GPS Time Lag* – The standard Furuno SC-50 and SC-30 Heading sensors have a 1.2 second delay on GPS data. Ensure that any GPS delay is entered into the Ship Setup Configuration as this will cause large errors in depth.

*Motion Compensation* – To make good use of motion compensation we must ensure that the WASSP transducer and any Motion sensors are securely mounted and do not move at all. The dynamic and static accuracy of the motion sensor effectively determines the differences you can expect when you pass over the same area again.

*Sea State* – Motion Compensation is a complex process and makes some assumptions – the bigger the sea state and the smaller the boat the less reliable the sea-floor data will be as there is more reliance on the accuracy of measurements and the input from the motion sensors.

*Cornering* – Motion compensation is costly to do to the nth degree. Most low end Motion sensors have poor performance on corners due to the centripetal acceleration forces caused by a turn affecting the delicate balance of the sensor. Thus sea floor detections collected while the boat is turning are likely to be of lesser quality than those collected in a straight line.

*Water Temperature* – The water temperature and salinity affect the sound speed and thus the angle at which the sound moves through the water column. This causes the sea floor to curve up or down as noted in the operator manual. If the sea-floor exhibits a curve up or down on the edges, adjust the sound speed. Note: The surface water temperature will probably change during the course of a day.

*Tide Correction* – Tide is essential for matching up overlapping swaths. If you have disabled the Tide correction the swaths will rarely line up on your WASSP

displays. Ensure that the ZDA sentence is being collected and sent to the WASSP computer so it can determine the UTC time and use the correct tide correction value.

*Transducer Offsets* – The transducer, GPS and draft offsets need to be input into the WASSP ship setup configuration so that the motion induced errors in the sea-floor can be correctly compensated for.

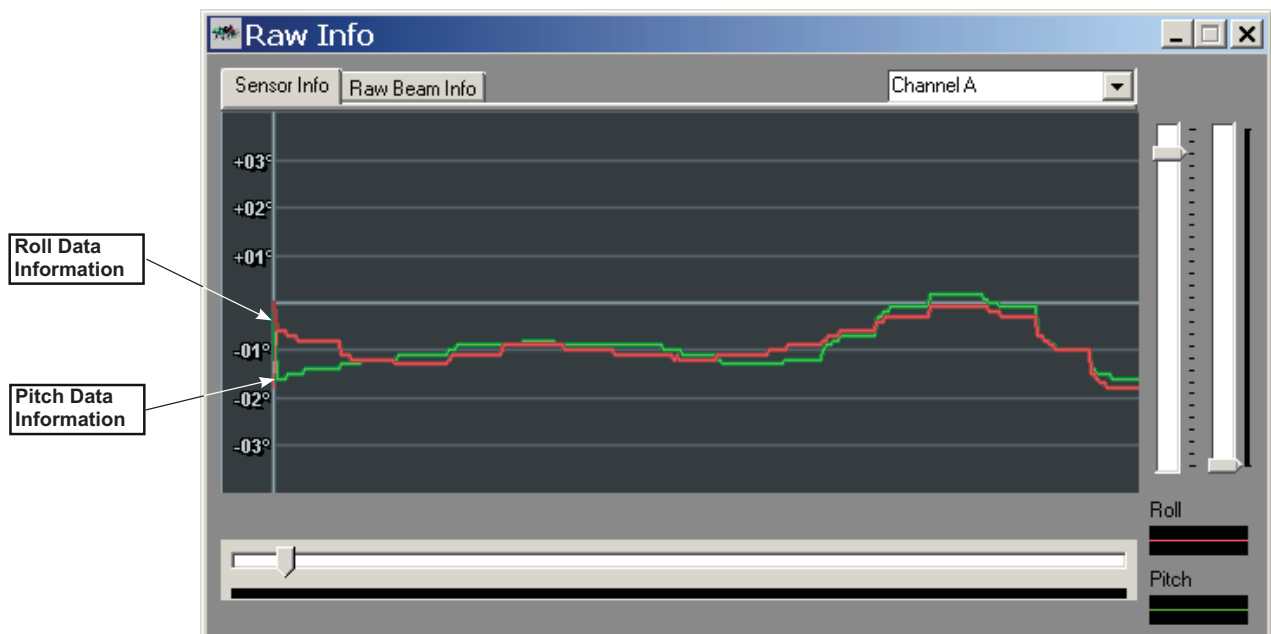
*Roll Offset* – If there is a fixed offset in the mounting of the transducer or Motion Sensor you will need to conduct a patch test to determine this error. Without this the roll correction will not work correctly.

### Question 13

#### Why does the Sea-floor Move if the system is Motion Compensated?

The Contour and 3D display are fully motion compensated. The other displays are only compensated for Roll to save on processing time and to avoid creating artefacts in the data. If the Sonar display is rotating then the Roll correction is not working. Remember too that if the vessel is operating in a high sea state, your motion sensor may not be able to fully compensate for the vessel's movement

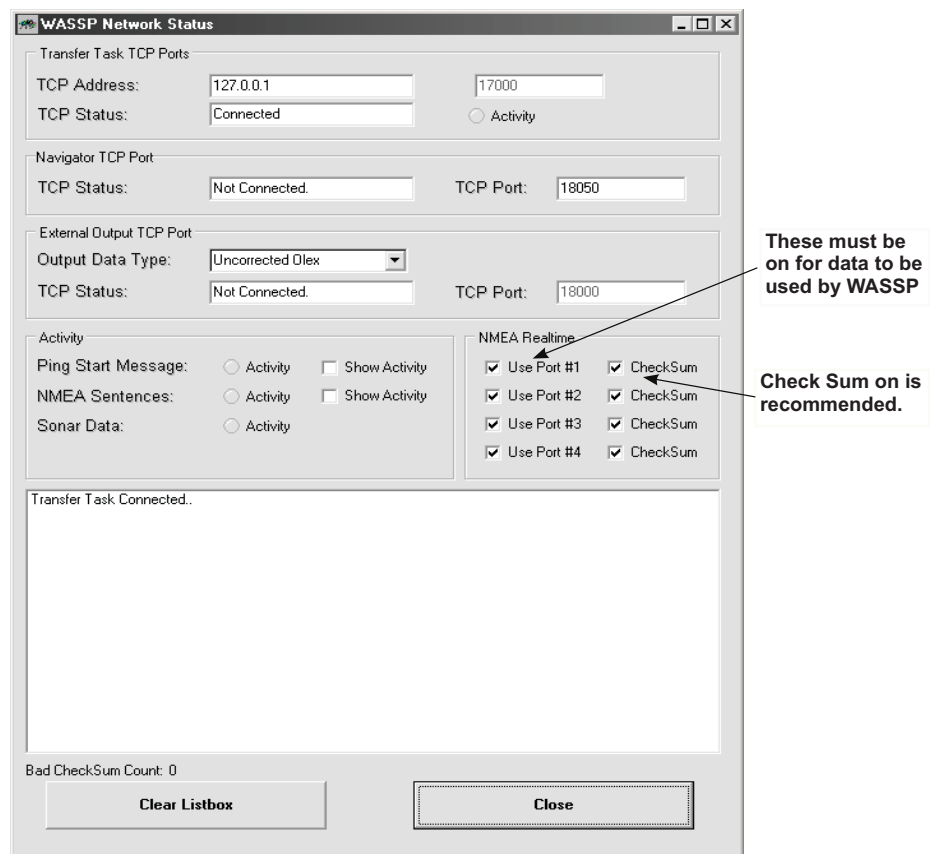
Check Roll Information is being received (Open the Raw Information Form and check the Roll Graph displays roll waveforms). You should see a red line on this display if the Roll information is being processed.



- Check that the device that you receive roll information from is on and that all your serial cables are still connected to your WASSP Computer.
- Check that the correct sensors are selected in the Ship Setup Form, this

configuration could have been inadvertently changed.

- Check that the Roll Configuration settings have not been changed. If the transducer array has been re-installed, the Swap Array setting could have changed in which case you will need to invert the Roll Configuration. When in doubt, use the values that were recorded in the Installation Manual at time of commissioning. If the roll offset is incorrect a slight roll of the display will occur. If the roll polarity is incorrect you will see a doubling of the actual vessel roll (i.e. compared with having the roll compensation disabled).



The screenshot shows the 'WASSP Network Status' window with the following settings:

- Transfer Task TCP Ports:** TCP Address: 127.0.0.1, TCP Port: 17000, TCP Status: Connected, Activity:
- Navigator TCP Port:** TCP Status: Not Connected, TCP Port: 18050
- External Output TCP Port:** Output Data Type: Uncorrected Olex, TCP Status: Not Connected, TCP Port: 18000
- Activity:** Ping Start Message:  Activity,  Show Activity; NMEA Sentences:  Activity,  Show Activity; Sonar Data:  Activity
- NMEA Realtime:**
  - Use Port #1,  CheckSum
  - Use Port #2,  CheckSum
  - Use Port #3,  CheckSum
  - Use Port #4,  CheckSum

Annotations in the image point to the 'CheckSum' checkboxes with the text: 'These must be on for data to be used by WASSP' and 'Check Sum on is recommended.' The window also shows 'Transfer Task Connected..' and 'Bad CheckSum Count: 0' at the bottom.

Finally if the sea floor is not uniformly flat you could see rapid changes in the sonar display with each ping as the ship moves across the sea floor. As there is no heave or pitch compensation on this display it will often move up and down and if the sea floor changes angle it will also appear to roll a bit. If you are unsure check that the seafloor remains flat on a flat piece of sea-floor and remember that a vertical shift is expected if there is vessel roll, pitch and or heave. These artefacts should be mostly removed when you look at the WASSP Contour display which is corrected for the measured attitude elements.

**Question 14 The mode button animates as if pinging but nothing happens. What is wrong?**

If you are looking at the Contour or 3D displays these will not update without GPS information, sea floor profile information and mapping is enabled. Check your GPS is on. This can be validated by checking the network input screen or transfer task diagnostic displays. If the seafloor line is not being traced on the Sonar display or the Mapping has been disabled then new data will not be added to the Contour Maps.

Increase the gain, and range. Can you see noise on the Sonar Display? If not, reset the power to the Transceiver, and reset the PC and retry. If this problem persists and there are no error messages, contact your dealer. If you are getting an error message or messages, look at the relevant information for the error message in the section of the FAQ.

Ensure that the Transducer has not been disconnected from the Transceiver, both the receiver cables and the transmit cables need to be connected in order for the WASSP system to operate. If problems persist after a full system shutdown and power up then contact your dealer.