

## 7. Frequently Asked Questions (FAQs)

Following is a list of frequently asked questions (FAQs) covering common problems encountered when operating the WASSP System 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.

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### 7.1 The System is transmitting too slowly, how can I speed it up?

Remember that the WASSP System must acquire twice the depth of a single beam sounder to enable the full seafloor 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 seafloor 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 WASSP System program consume processing power and take processing time away from the WASSP System system, slowing down the rate of transmission. For optimal performance, ensure the WASSP System program is the only application running.

### 7.2 The system has stopped transmitting without operator intervention. Why?

If time is taken from the system by another application for long enough, the WASSP System may restart transmission in a number of seconds. The WASSP PC is a dedicated system and should not be used for other applications.

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 WASSP System program and the transceiver. The most likely cause of this is a sudden power supply spike or drop.

### 7.3 When I press the Transmit button, nothing happens and 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 BTxR power is ON and the LED light on the front panel flashes every few seconds.
- Make sure the network cable is connected at both the BTxR and the WASSP PC ends (unplug and re-plug to make sure).
- Check that the Processing Module 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

Processing  
Module icon



## 7.4 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.

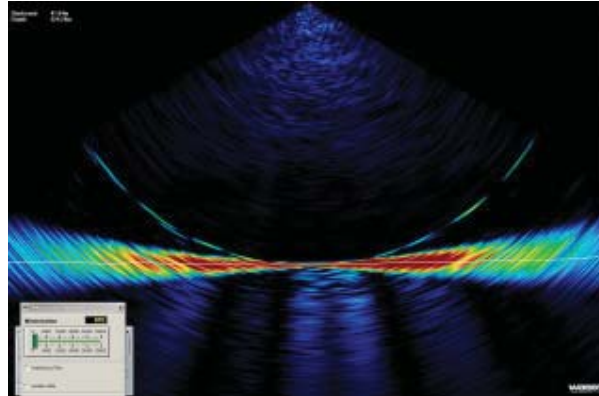
- **License File Is Corrupted.** The licence file on the WASSPDONGLE has been modified in some way and is no longer valid. Contact your dealer to source a new WASSPDONGLE – you will need to return your current faulty Dongle.
- **No Attitude: No Pitch:** The system is configured to compensate for Pitch 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 WASSP PC and the BTxR 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 dealer for further assistance.

## 7.5 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 multibeam 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 seafloor 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 seafloor 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 seafloor 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.
- 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 BTxR 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.

## 7.6 What is this constant signal on the sonar/single beam 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.

*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 120 degree 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.

## 7.7 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 seafloor 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

seafloor tracking.

*Power* – If too much power is being used for the depth of water you are operating in, the seafloor 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 seafloor 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 seafloor 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 seafloor then you may need to manually increase the system range to allow it to re acquire the sea-floor.

*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 seafloor tracking is affected by the Minimisation level; ensure this is set appropriately as described in the Installation Manual.

## 7.8 Why doesn't the Seafloor 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* – Ensure that any GPS delay is entered into the Ship Setup Configuration as this will cause large errors in depth. See Installation Manual.

*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 seafloor 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 seafloor 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 seafloor to curve up or down as noted in the operator manual. If the seafloor 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 seafloor can be correctly compensated for.

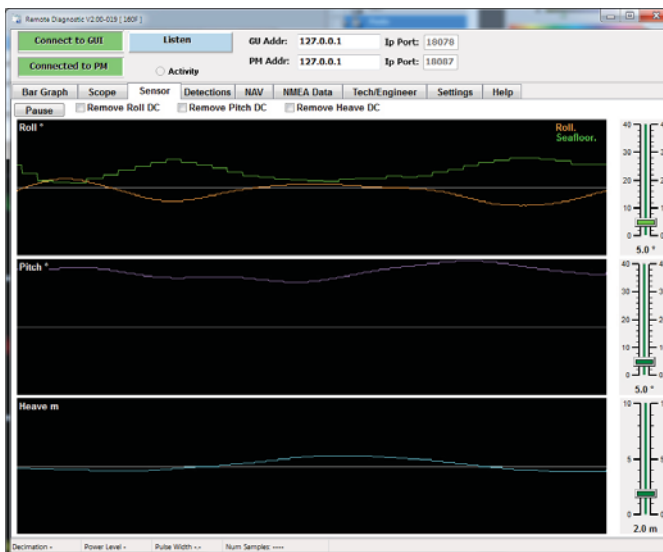
*Roll Offset* – If there is a fixed offset in the mounting of the transducer or Motion Sensor you will need to conduct a patch test to determine this error. Without this the roll correction will not work correctly.

### 7.9 Why does the Seafloor move if the system is Motion Compensated?

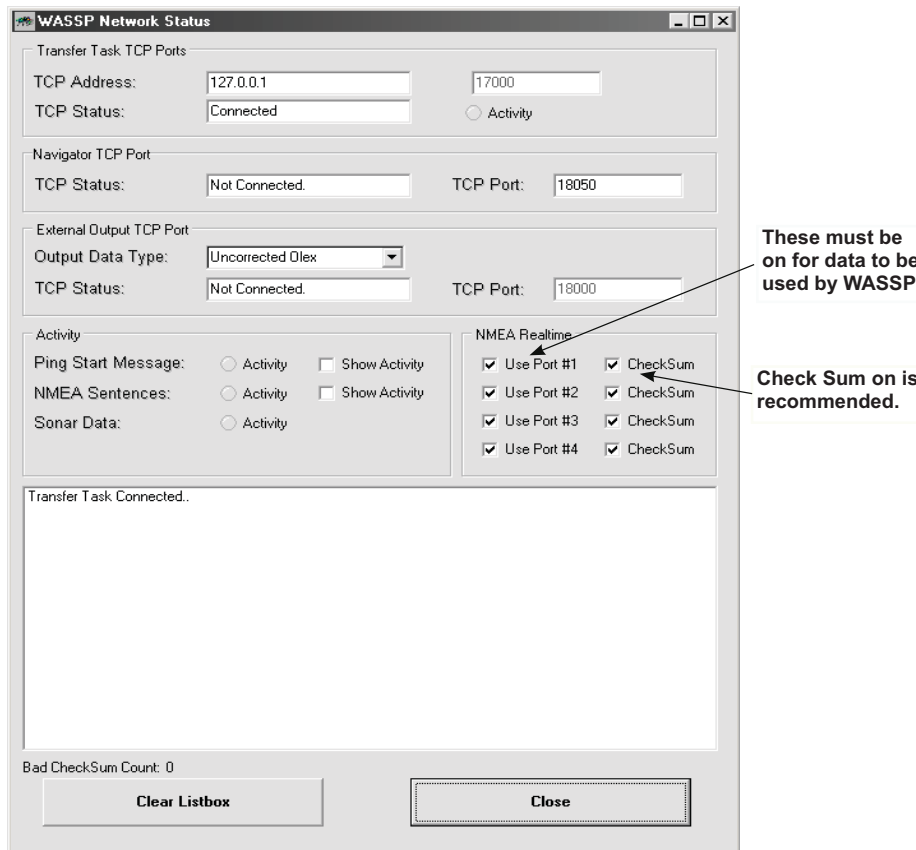
The views are only compensated for Roll to save on processing time and to avoid creating artefacts in the data. If the Sonar display is rotating then the Roll correction is not working. Remember too that if the vessel is operating in a high sea state, your motion sensor may not be able to fully compensate 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).
- ▶ Use the WASSP Network Status screen to check that you have not disabled the Serial port. Check that the serial port with the attitude data is being used.







Finally if the seafloor 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 seafloor 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 seafloor 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.

### 7.10 The mode button animates as if pinging but nothing happens. What is wrong?

Check your GPS is on. This can be validated by checking the network input screen or transfer task diagnostic displays.

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 BTxR, 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.