

# **Wreck Finder**

## **Professional**

### **◆ Wreck Finder**

**Instruction Booklet (For use in  
addition to Sidescan 3D  
instructions)**

**ECHOPILOT**  <sup>TM</sup>

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# ECHOPILOT™

Thank you for purchasing this Echopilot instrument.

Your new EchoPilot instrument has been manufactured to the highest standards by the dedicated staff of a company with many years of experience in marine electronics. You have invested in the most up to date technology available and in a product rigorously tested in the laboratory and at sea.

All goods of our manufacture are backed by a 2 year warranty. Expert advice and guidance is always available by Telephone 01425-476211/2 - just ask for customer service. If you are outside the UK you can still call us or any of our overseas distributors. We welcome the opportunity to talk to our customers.

**Nobody enjoys reading manuals, but please continue to read this one! Installing your instrument correctly is vital to get the maximum performance, pleasure and safety from your equipment, so please take the time to read the instructions.**

## **Please observe the following warnings:**

**Please do not cut the transducer cables** - they are fine threaded multi-core cable matched to the transducer.

**Please do not remove the transducer plug from its cable** - if a hole is too small make the hole bigger! Any join in the cable will reduce sensitivity / performance.

# **Wreck Finder Operating Instructions**

## **Introduction to the Wreck Finder**

The Wreck Finder is based on the EchoPilot Sidescan 3D and uses real-time 'FLS' technology and a military-based classification system to aid the user in locating wrecks.

The Wreck Finder includes all the functionality of the Sidescan 3D but also has extra features for the purpose of wreck detection. These features are as follows:-

### **Confidence Indicator**

The Confidence Indicator is displayed in both 2D and 3D modes and gives the user a 'confidence' value between 0 and 100. The higher the value, the higher the likelihood of a wreck being present in the sonar beam.

### **Score Display**

The Wreck Finder automatically stores high confidence levels and the GPS location at which the high levels occur. A confidence level greater than 85 which is present for at least four seconds will automatically be stored. It is the peak value that is stored. The ten most recent scores are stored within the set.

Note: GPS positions can only be stored if a GPS device is connected to the Wreck Finder via its NMEA interface. If not, the score will be stored but a latitude and longitude of 0 degrees will also be stored.

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## **Display Modes**

The Wreck Finder differs slightly from the Sidescan 3D in the selection of display modes as follows:-

- If using a sideways looking transducer, 'Left' or 'Right' transducer should be selected from 'Sidescan Options' in the menu to match the transducer installation.
- Display Modes 'FLS' (forward looking), '2D Side' or '3D Side' are selected from the 'Display Options' menu. This facilitates the changing of modes from forwards to sideways view when two transducers are fitted.
- The 3D display now includes the current GPS position in the bottom left or bottom right corner of the screen. This is only if a GPS device is fitted.
- The 'Score' display has been added to the 'Display Options' menu and allows automatically stored confidence levels/GPS positions to be viewed. The last ten confidences/GPS positions are stored in memory and are viewed over two pages. The first page (P1 in top left hand corner) displays the five most recent memory positions and the second page (P2 in top left hand corner) - the remaining five positions. Scrolling between pages is achieved with the **UP/DOWN** arrow keys.

## **Using the Wreck Finder**

### **The Confidence Level**

The confidence level is obtained by extracting 'features' from returned sonar echoes. These features are compared to a 'classification template' within the unit containing feature values of wreck and non-wreck targets. A confidence level is returned by the classifier, based on the matching of the extracted features to the features within the template.

The more consecutive pings that can be obtained from the target, the more accurate the classification will be. Feature values are averaged over five pings so ideally, five or more consecutive pings from the target are required for a successful classification.

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## **The Sonar Display**

Both 2D and 3D modes are available on the Wreck Finder.

2D mode provides a real-time, two-dimensional picture of the sea bed and gives a detailed representation of the received sonar echoes. 2D mode can be used with both a forward looking transducer or a sideways looking transducer and provides the best method of displaying wrecks on the screen.

3D mode provides a three-dimensional history of the sea bed by using the real-time 2D data to build up a historical picture. 3D mode is designed for use with a sideways looking transducer and can be used to give an indication of the sea bed shape.

## **Tips On Using The Sonar Display**

- 3D mode can be used for locating wrecks in less than 20 m of water. Wrecks that stand up more than 4 or 5 m from the sea bed should be visible on the 3D display. In depths of more than 20 m, accuracy starts to diminish as the resolution decreases at greater depths. 2D mode is recommended for a more detailed look at the wreck.
- Stability of the transducer affects the performance of the classifier. A forward facing transducer is generally more stable (particularly in deeper water) and will give a better classifier performance.
- The confidence level may occasionally fluctuate to a higher value and then quickly return to a lower value when it appears that the sonar display has not changed. This is caused by occasional poor sonar echoes in between good ones. The sonar display does not show these poor echoes due to its persistence function.

# Wreck Finder Operating Instructions

## Wreck Finding

Locating wrecks should be carried out using both the sonar display and the Confidence Indicator. High confidence levels are generally backed up by some indication on the sonar display that a wreck is present.

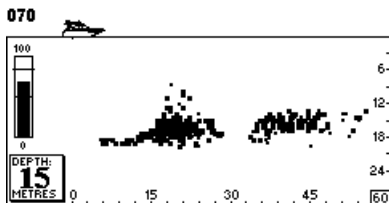
If a confidence level is consistently high around a certain area, then closer inspection may be required with 2D mode selected and an appropriate range. As previously mentioned, a forward facing transducer will provide greater stability.

If the sonar display shows something interesting which could possibly be a wreck, then further passes with the sonar should provide good confidence levels.

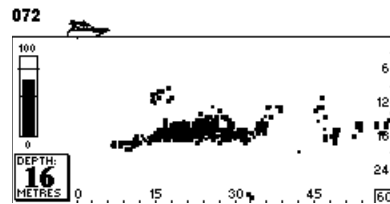
With practice and experience with different targets, the user will learn how to use both the Confidence Indicator and the sonar display together to provide a useful tool for finding wrecks.

## An Example

The following screen shots were taken from the Margaret Smith (a 100 ft sand barge) in the Solent, Hampshire, England. The wreck lies in 18 m of water and stands up about 6 m from the sea bed.

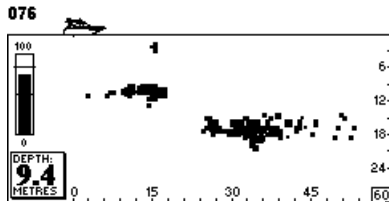


*Approaching the Wreck. The Margaret Smith just appearing on the display. Confidence level is increasing.*

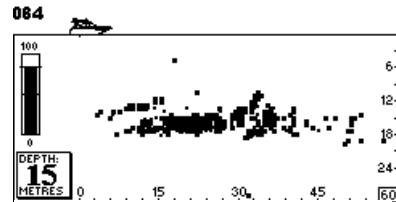


*Moving closer to the wreck. Confidence level increases again.*

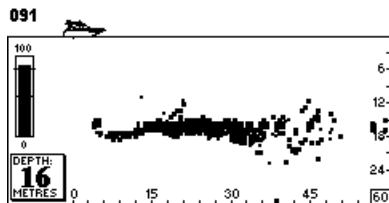
## Wreck Finder Operating Instructions



*Wreck now much clearer on the sonar display. Notice the sonar shadow between the top of the wreck and the sea bed.*



*The wreck shown from a different angle. A higher confidence this time.*



*Can just see another part of the wreck sticking up from the sea bed. Again, a good confidence level.*

**Happy Wreck Hunting!**







