

## Article 10 FORWARD SOUNDERS

A forward scanning sounder is a valuable electronics addition to enhance your navigations package and one you will wish you had long ago.

A conventional sounder shows the depth of water directly under your boat but is of no value as to what lies ahead.

A forward sounder has many advantages

- It will give the water depth under your boat the same as a conventional depth sounder but has the capabilities of showing you the depth of water ahead of the boat. Usually 5 to 7 times foreword relative to the depth of water you are in.
- It will do a vertical scan forward of the boat from the bottom to the water surface. This will show obstructions such as shoals, debris such as floating logs, and even schools of bait fish.
- Some models also perform a horizontal scan as well as a vertical scan. The horizontal scan will show what is to the side of the boat. This will allow you to see the sides of a narrow channel or passage to help you stay in the deep water in the center.

Interphase Technologies ([www.interphase-tech.com](http://www.interphase-tech.com)) have perfected the foreword sounding technologies with their SE-200 search engines.

These units consist of one or two transducers, a processor box and a display a display of your choice. A 7" color display is available or it can be connected to any chartplotter that has video or VGA inputs such as the Raymarine E series or the Furuno Navnet 3D displays. It also works well on flatscreens from Nauticomp or any VGA display.

The unit can be used on multiple displays which allows one unit to be used on an upper and lower station with an optional keyboard for the remote display.

## How does it Work

The transducer consists of 8 phased array elements which allow it to scan from the surface of the water to the bottom creating an image on the screen similar to a radar image. Any objects such as debris or submerged objects will cause a return signal to the transducer and show up on the screen. This technology was first used in ultra sound devices in the medical field.

## Installation

The location of the transducer is critical for maximum performance. The in hull unit needs a clear flow of undisturbed water and should be located close to the keel and in the back third of the hull so it does not get air turbulence when the boat is on plane.

## Capabilities

The units can be purchased to provide various capabilities based on individual requirements.

### A/ Long Range Forward Vertical Scan Color Sonar

Using a single transducer producing a color image on the display unit the unit will scan a forward beam, vertically, from the surface to the bottom. It will show shallow water, hazards, fish and other submerged objects in the water directly ahead of the boat. The transducer has a beam width of 12 degrees giving good forward coverage. It also will give conventional bottom depth at the same time and can be used in a

split screen mode showing what is under boat as well as forward. The unit has the capabilities of a forward vertical scan up to 1200 feet (dependent on speed, depth and water conditions).

#### B/ Long Range Forward Vertical Scan and 90-degree Forward Horizontal Scan

This is true Dual Axis scanning sonar. It will provide all the features of the above unit plus has the ability to scan a horizontal scan to sweep over a 90 degree sector in front and to the sides of the vessel. This unit is great for navigating through narrow channels, rocks and also for finding fish. The transducer has two sets of phased array elements. One for vertical and one for horizontal.

#### C/ Long Range Vertical Scan and 180 Degree Scan Forward Horizontal Scan

This unit provides all the capabilities of the above but includes two transducers. These transducers are synchronized to provide a full 180 degree forward horizontal scan. Installing a transducer on each side of a deep keel vessel will prevent "keel shading" that you would get with a single unit. This is the ultimate unit to provide the most navigation data.

### Professional Sonar Units

For the person who requires the ultimate in underwater sonar applications then there are units available from Furuno ([www.furuno.com](http://www.furuno.com)) these units are a true sonar unit and suitable for boats over 40 ft. The units are very useful for a serious fishing as well as

determining what is in the surrounding area. The Furuno Searchlight Sonar Model CH-250 is the basic unit. This unit consists of a 10.4 inch color screen, transceiver and a hull unit. The unit has a range up to 3500 ft. The hull unit consists of a tube glassed into the hull and contains a transducer that is retractable and has a travel of 250 mm when in use. The unit projects under the hull when operating and retracts when the boat increases in speed. The display unit has 8 to 16 colors depending on echo strengths. The unit has 8 operation modes including a half or full circle scan, zoom, vertical scan, vertical sounder, the combination of full or half circle with vertical scan, full circle with history, full circle with strata and full circle with video plotter.

This unit is for the professional fisherman and mainly used at slower speeds. When the boat is up on plane the unit will retract and will be non operational.

## Conclusion

You should first determine what your requirements are before you make a purchase. Some boats cannot accommodate dual transducers. The transducers are large and you have to have a look and make sure the transducer is not going to cause problems with other intakes such as engine pickups. The transducer location is critical and needs to be professionally installed. Once you have checked out what is required and get a unit of your choice you will find the foreword sounder to be an excellent addition to your electronics