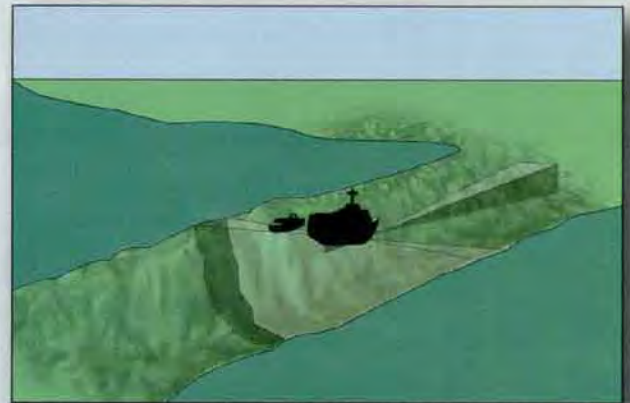
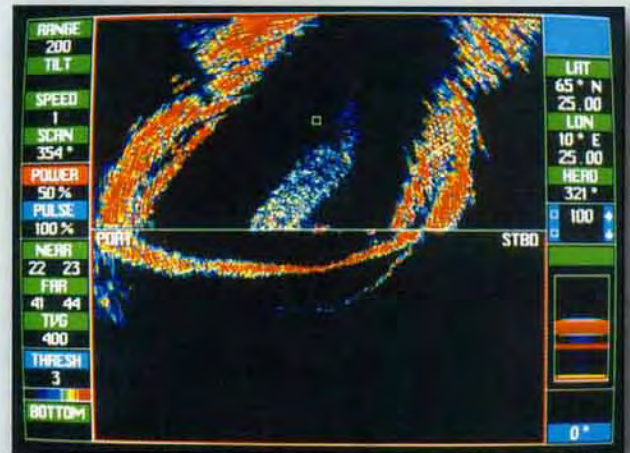


WESMAR

Series 3000 Sonars with
Advanced Profiling Features

WESMAR Scanning Sonars provide an impressive underwater detection capability for use in submarines and surface Vessels



The top screen above displays the WESMAR Scanning Sonar in Split Screen mode showing the acoustic return as the vessel navigates a narrow channel and another vessel passes to port. The profile of the channel is shown in the lower screen.

“Like having three sonars in one to provide an Ahead-Looking Echo Sounder”

- ▶ Scan ahead of vessel with PPI presentation.
- ▶ Independently profile the bottom, forward/aft or anywhere around the vessel.
- ▶ Additional contacts of interest may be vertically scanned instantly and displayed on a third “pop-up” profile screen.

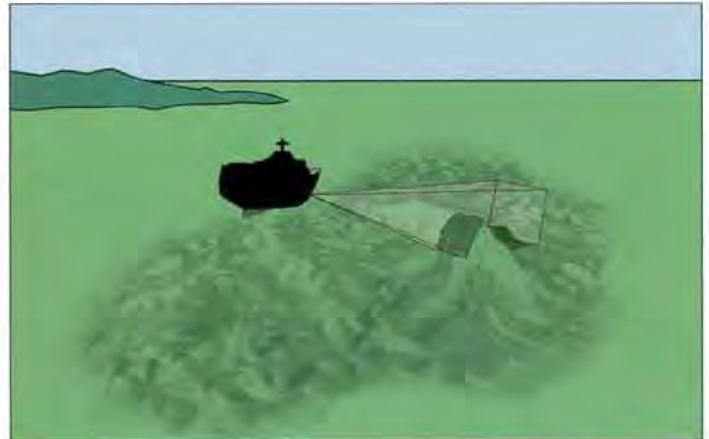
Vastly Improves Navigation Safety

WESMAR™ SERIES 3000 Sonars

Designed With Features That Respond to the Needs of the Military User

System Description

The SERIES 3000 scanning sonar is available in a variety of frequencies and with many options. Its applications include navigation, obstacle avoidance, mine detection, salvage, and underwater surveillance. WESMAR is continually enhancing the features of the SERIES 3000 and developing applications for this system. Also, WESMAR has provided customized systems for a variety of purposes. To match the environmental conditions and particular target size/strength, variables such as pulsewidth, color thresholds, TVG, and power level are selectable. The system comes standard with an hydraulic hoist, but is available without a hoist for submarine applications.



The WESMAR Scanning Sonar may be used to profile a pinnacle ahead of the vessel.

Applications

Submarines and Submersibles. WESMAR scanning sonars are typically used for navigation and obstacle avoidance in submarines and submersibles. They also are useful as a collision avoidance sensor to search for vessels while surfacing.

Surface Vessels. WESMAR scanning sonars are used in a variety of surface vessels for navigation and underwater surveillance. Typical vessels include coastal patrol boats, buoy tenders, salvage vessels, and small mincraft.



Cyclone Class Coastal Patrol Vessel

System Features

Compact Size. The WESMAR configuration is extremely compact because a single searchlight beam is utilized to provide full coverage. The beam focuses more transmitted power on the target, more direct path energy is returned and scattered noise is far less than with omni sonars. The electronics are also compact because many of the beam forming, tuning, and signal processing functions that other sonars perform in hardware, WESMAR performs in software.

High-discrimination. Special software and unique receiver/amplifier design enables difficult targets to be picked out of background clutter.

MILSPEC Critical Components.

Provides the extended performance and tight circuit tolerances required for military applications. Thermal drift is minimized.

New Focused Beam Technology

Provides High Definition and Long Ranges In Shallow Waters

Advanced Features

Focused Soundbeam. WESMAR's new focused beam technology is now available in 45 kHz and 110 kHz models. Having its genesis in research conducted for the U.S. Naval Research Laboratory, a specially designed transducer array is scientifically engineered to selectively fire the sound energy into a narrow beam with low sidelobes that provides a sharp, clear picture with extended ranges. Shallow water performance is dramatically enhanced.



Swedish Submarine

Increased Transmit Power. The focused beam transducer technology requires more individual transducer elements than earlier WESMAR technology. This permits an increase in transmit power. Coupled with the improved directivity of the focused beam, the same range performance can now be achieved with a higher frequency sonar. With the new technology, the 110 kHz system represents the optimum in frequency versus range.

High-Transmissivity Transducer Housing. Adding to the sensitivity of the new focused soundbeam, WESMAR has introduced a new transducer housing material that is highly transparent acoustically. Conventional transducer housings are a compromise between structural integrity and allowable attenuation of the sonar signal. WESMAR's new design is extremely rugged, with little attenuation, thereby substantially enhancing performance.

Power Boost. The pulsewidth selection is enormous; operators can choose from 3% to 100% of standard pulsewidths, plus power boost. Power boost instantly provides extra long pulse widths, dramatically extending ranges in most acoustic environments.

Separate Sonar Controls. The split screen formats utilize separate controls that can be programmed and preset to the operator's specifications. Range, Near

Gain, Far Gain, TVG, Thresholds, Scan Speeds, Sector Sizes, and numerous color enhancement features can be individually controlled through simple adjustments.

Instant Sector Change Mode.

A simple turn of the bearing knob instantly repositions the soundbeam on the target, improving the operator's ability to constantly monitor the target.

HEAVY DUTY, VIBRATION-RESISTANT HYDRAULIC HOIST.

To take full advantage of the enhanced performance of its "focused beam" technology WESMAR developed a rigid heavy duty hoistable to withstand higher sea state conditions and higher speed applications.



Series 3000 – Models & Specifications

Features	Model 3030-14	Model 3045-14	Model 3060-14	Model 3060-08	Model 3110-08	Model 3110-10	Model 3160-06	Model 3160-08
Acoustic Frequency	30 kHz	45 kHz	60 kHz	60 kHz	110 kHz	110 kHz	160 kHz	160 kHz
Source Level	226 dB	226 dB	230 dB	220 dB	230 dB	230 dB	225 dB	226 dB
Beam Dimensions (VxH deg)	10x12	10x10	dual 5x7, 9x14	9x14	5x7	5x7	7x7	5x8
Soundome dimension (DxH in)	14x23	14x19	14x23	8x21	8x21	10x13	6x17	8x21
Maximum range scale (m)	8000	8000	3000	1800	1600	2000	1200	1600
Advanced Profiling "AP"	Available	Available	Available	Available	Available	Available	Available	Available
Focused Beam "FB"	Not Available	Available	Not Available	Not Available	Not Available	Available	Not Available	Not Available
Pulsewidth	Note 1	Note 1	Note 1	Note 1	Note 1	Note 1	Note 1	Note 1

Notes:

1. Pulsewidth is selectable or automatically adjusted with changes in the range scale. Power boost is provided in "AP" and "FB" models.
2. The advanced profiling features are provided in "AP" and "FB" models.
3. Heavy duty hull package, increased transmit power and high-transmissivity soundome are provided in "FB" models only.

Computer Console. Provides operator interface to control sonar parameters.

Soundome Assembly. Consists of an oil-filled transducer housing, containing the transducer array and scan and tilt mechanisms.

Soundome Cable. Connects soundome to preamplifier.

Hydraulic Hoist Assembly. Configured with a flange for mounting to a seachest, a stainless steel soundome tube, and hydraulic hoist mechanism with limit switches. Hoist size varies with sonar model.

Junction box. Normally mounted to hoist assembly, contains sonar system preamplifier and/or transmitter/receiver circuitry, depending on model.

Interconnect Cable. Connects computer console to junction box.

VGA Monitor. Stand-alone monitor, displays sonar return, system parameters, setup menus.



Sub-Sonar Features. The SERIES 3000 sonars may be configured with sub-sonar features for use in submarines and submersibles. These features consist of pressure-compensated soundome, water-blocked underwater soundome cable and underwater-mateable soundome connector.

Multiple Display Windows. WESMAR "AP" systems provide an impressive array of display options. These are easily accessed and include full screen PPI display, full-screen bottom profile, full screen video sounder, split screen forward PPI/ bottom profile, and a "pop-up" screen for vertically scanning a target instantly.

WESMAR® Defense Products Company
A division of Western Marine Electronics

14120 NE 200th Street, Box 7201 Woodinville, WA 98072 USA
Tel 425-481-2296 Fax 425-481-8451 E-Mail: defense@wesmar.com
www.wesmar.com/defense