

WESMAR™ WEB

Underwater Swimmer and Submersible Vehicle Detection System

The **WESMAR WEB** system detects underwater threats, alerts operational personnel, and displays threat track information so that a coordinated response can be initiated.



***Protect Harbors, Combatants,
Auxiliary Vessels and Shore Side
Facilities from Underwater Attacks***



The WESMAR™ WEB

“Waterside Electronic Barrier”

The WESMAR WEB detects combat swimmers, underwater terrorists, and submersible intrusion vehicles with active sonars, arrayed in configurations specifically designed to protect valued assets. The WESMAR WEB was demonstrated in a US Navy/Canadian Navy Exercise in August 2000 and it was 100% effective in detecting and tracking divers using both open circuit and closed circuit scuba. System detections automatically trigger visual and audible cues allowing minimal manning. Our command display presents the complete, real time, evolving tactical picture. Proprietary software, derived from field experimentation against experienced, determined penetrators, has been upgraded based upon feedback from combat operators of systems installed for three years in actual hostile zones.

The WESMAR WEB is rugged, reliable, and battle tested. The system can be deployed, recovered, reconfigured, and redeployed to meet a broad spectrum of protection needs. The system can be palletized and air shipped to trouble spots. The system is moderate-to-low cost and reliably detects underwater intruders. Protect harbors, harbor entrances and approaches, anchorages, pier areas, combatants, auxiliary vessels, and coastal approaches to high value facilities with the WESMAR WEB!

The WESMAR WEB Works!

WESMAR has been a world leader in active surveillance systems and continuously involved in their development and testing since the 1980's. The current configuration of the WESMAR WEB is an improved version of currently deployed systems at three sites in a far eastern country. These deployed systems have been installed for three years and are now in continuous use for detecting underwater intruders.

- The WEB is real — not a concept!
- The WEB is deployed — not on the drawing board!
- The WEB is battle tested — not model tested, laboratory tested, or test tank tested!

The Web Is Combat Ready

► Ready Now!

WEB components are mature products derived directly from WESMAR's commercial operating shipboard systems. Production engineering and manufacturing controls have been established. Production can be immediately integrated to produce WEB components along with our commercial products.

- Research and development is complete!
- Prototype and development models are complete!
- Model testing and reengineering are complete!
- The WEB system can be installed and working in a matter of weeks!

Low Cost!

WESMAR is particularly sensitive to cost as an independent variable, and we focus on “providing the greatest detection capability with the least development risk, at the lowest cost in the shortest time.”

► “COTS”

Defense program managers' clamor for maximum use of commercial off the shelf (“COTS”) in new developments — some programs even require it! The WEB fully meets the “COTS” test. WESMAR has thirty-four years experience in producing state of the art sonars for fish detection and navigation. These commercial sonar products are our primary business. To remain competitive in this national and international market against often-subsidized foreign competition, our technology has led the industry. Defense products derived from our competitive commercial market enjoy:

- State of the art technology
- Rapid insertion of new technologies
- Low or no development costs
- Low cost installation and maintenance
- Low cost final products

► Rugged

WESMAR commercial products must perform under the harsh maritime environments and handling dictated by the commercial fishing industry. Critical WEB components are further improved to minimize thermal drift in the electronics and to provide better performance and tighter circuit tolerances.

► Low Overhead Cost

WESMAR is a commercially based business in a highly competitive commercial market. We adapt commercially based products to defense needs. We hold down development costs, overhead and infrastructure. We deliver leading edge technology at low cost.

Ready Now for Rapid Deployment and Installation...

Palletized for Direct Shipment to High Threat Zones

► Low Total Ownership Costs (TOC)

WESMAR has the full range of expertise necessary to support the WESMAR WEB throughout its life. WESMAR experts work with customers to survey areas to be protected and propose effective system configurations. WESMAR has expertise for supervising installation of the WEB using WESMAR, contracted, and government furnished labor. Training, Maintenance, and Supportability are not “after thoughts” with the WEB. Training courses have been developed and conducted at both the WESMAR facility and on-site in customer facilities. Maintenance and Supportability packages can be easily defined based on experience and customer needs. WESMAR maintains a fully capable Original Equipment Manufacturer (OEM) maintenance capability to serve our world wide product base. Logistic “Illities” costs are relatively modest. Keeping life cycle costs low for both commercial and defense customers is a primary concern. You can rely on long term factory and spare parts support from WESMAR.

The WEB is a software based system, allowing it to be easily improved and upgraded.

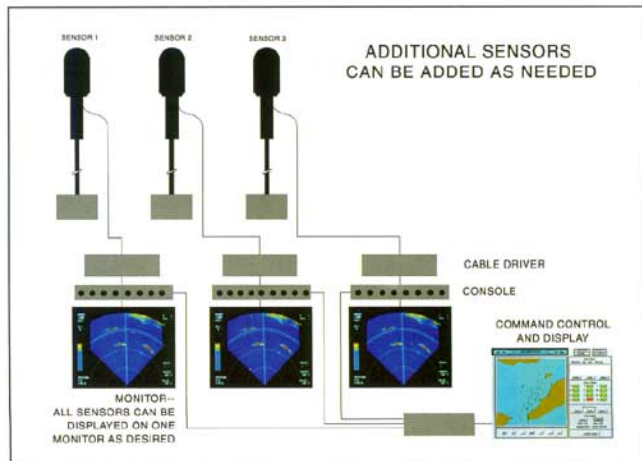
Portable/Reconfigurable/Reusable

The WESMAR WEB may be deployed in fixed harbor or coastal installations, or it may be used as portable equipment by individual ships or in response to temporary threats at specific sites. It is suitable for “pack up” kits and air shipment. If a particular system deployment is no longer needed, the system can be recovered and redeployed in any of a number of possible configurations for entirely different threat scenarios.

Minimum Manning

The WEB system includes a Command, Control & Display system (C2D) that monitors the status of all sensors from a single display and provides graphical data fusion to present a comprehensive tactical picture. The WEB can detect even the most stealthy intruders. To provide a constant lookout, these sensors are continually computer monitored to identify those targets that exhibit threatening characteristics and to provide alarms when threats are detected. Sensor search sectors can be remotely adjusted

from control stations allowing improved tracking of threat contacts. The C2D improves the operator's ability to manage the sensor contacts and rapidly provide accurate information to response forces. The C2D allows the integration of the data from the WEB active acoustic barrier with data from other sensors, such as radar, visual cameras, infrared sensors, and passive acoustic sensors. This data correlation feature can enhance the value of the active acoustic barrier and provide a complete detection capability in a multi-threat environment.



Typical Three Sensor System

Modern WESMAR Plant On Four-Acre Site Close to Seattle



WESMAR is located in the community of Woodinville, Washington, just 20 miles northeast of Seattle, in an 80,000 square foot building on 4 acres, close to major freeways and waterside testing facilities. This modern, high tech facility was built in 1996, and houses WESMAR's adminis-



trative, corporate and sales offices, plus its complete design, manufacturing and testing facilities, including an in-house automated machine shop to ensure the company's extreme standards of quality are met.

System Specifications

Operating Frequency	Available in different frequencies from 60 kHz to 170 kHz. Multiple sensors of varying frequency can be utilized in close proximity without acoustic interference.
Pulse Width	Operator selectable from .05 to 40ms or automatically adjusted for range scale.
Horizontal Beamwidth	Varies from 7 to 14 degrees, depending on frequency of sonar.
Vertical Beamwidth	Varies from 5 to 10 degrees, depending on frequency of sensor.
Transducer Mounting Depth	Standard sensor operates to 50 feet. Capable of depths to 1000 feet with optional pressure-compensation system.
Maximum Cable Length	Standard cable operates to 2000 meters. Capable of distances in excess of 5000 meters with low-impedance cable. Available with signal repeaters for special long distance applications beyond 5000 meters.
Synchronization	Transmit cycles of multiple sensors may be synchronized by connecting consoles with RG-58 coaxial cable and selecting this menu option. Acoustic interference of same-frequency sensors and potential "cross-talk" between adjacent sensors are eliminated.
Cable	Low-cost marine-grade coaxial cable carries all power, control signals, and sonar data, utilizing Manchester II coding scheme.
Fiber Optic Interface	Available as a system option for high-noise environments.
Shallow Water Capability	The WEB has been used successfully in water depths as shallow as 4 meters.
Commercial off-the-shelf	The WEB can be exported to most countries on WESMAR's US Department of Commerce License.

WESMAR™ Defense Products Company

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