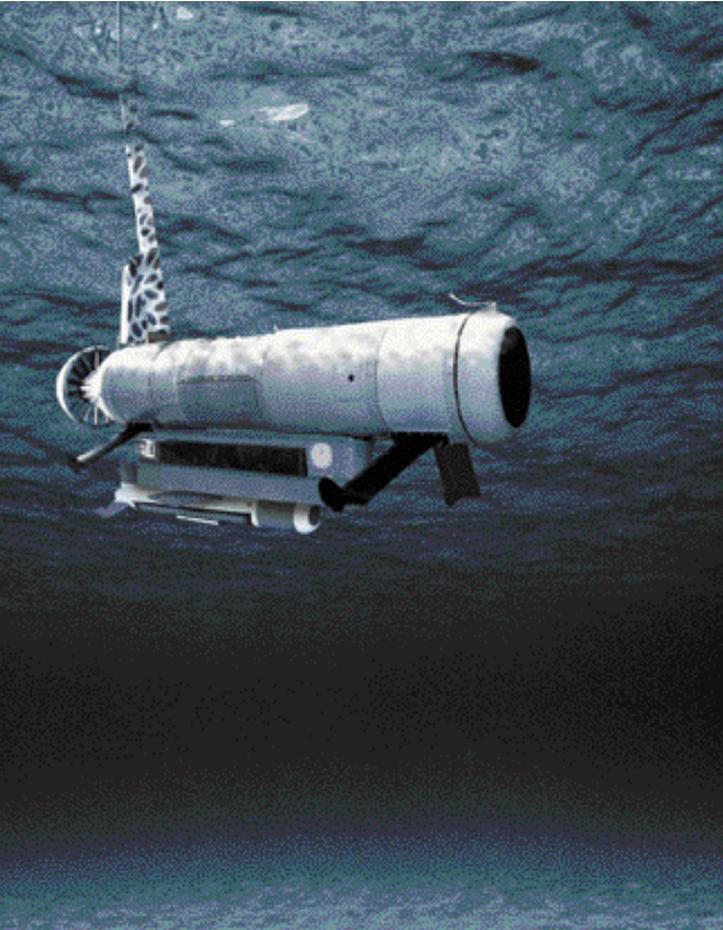


## ➤ Mine Countermeasures: From the Stern Gate through the Beach...



During ship-to-objective maneuver, the Marine Corps relies upon the Navy to provide movement to the beach. Regardless of future vertical-lift capabilities, some forces, equipment, and supplies will have to cross the beach. In specific areas of national strategic interest, the assault force will not be able to simply detect and avoid contiguous waters and landing beaches fouled by mines and obstacles. In these areas, suitable landing beaches are limited – and adversaries know precisely where they are.

Navy deep-water MCM capabilities reside primarily in a triad of surface mine countermeasures (SMCM) ships, airborne mine countermeasure (AMCM) helicopter squadrons, and underwater mine

countermeasure (UMCM) Explosive Ordnance Disposal (EOD) Detachments and marine mammal systems (MMS).

The MCM systems will conduct large area, long-endurance MCM operations from deep water to the vicinity of the 40-foot depth contour, which marks the beginning of very shallow water.

The Navy is engaged in an effort to augment the triad with MCM systems placed aboard carrier battle group (or CSG) and Amphibious Ready Group (or ESG) ships.

### DISCUSSION

Naval expeditionary forces require an effective mine warfare capability to open and maintain sea lines of communication and to operate within the littoral battle space. With respect to mine countermeasures (MCM), they require a family of capabilities that encompasses mine detection, location, neutralization, marking, and data dissemination. These capabilities will allow naval expeditionary forces to detect and avoid mines and obstacles when possible, and breach when necessary.



Designed to provide an organic capability to detect, avoid, or neutralize mines within operationally acceptable timeline and with acceptable levels of operational risk, this next generation of systems includes the Remote Minehunting System (RMS) and the Long-term Mine Reconnaissance System (LMRS).

A range of factors – the physics of ship draft requirements, sensor physics, system operating limits, diver physiology, mine characteristics, the extremely dynamic environment, the requirement for covert operations, to name but a few – renders deep water systems almost entirely unsuitable for very shallow water (VSW; water depths of 40 feet to about 10 feet), surf zone (SZ; depths of about 10 feet to the beach), and beach zone (BZ) operations. Hence, the Navy must field a specialized family of capabilities to contend with mines and obstacles in the VSW/SZ/BZ realms. Currently, Navy Special Clearance Team-1 (NSCT-1), a 180-man unit composed of Navy divers, Navy SEALs, EOD, Marine Recon divers, unmanned underwater vehicles, and marine mammals are capable of low-visibility mine detection, reconnaissance and clearance operations in waters from 10 feet of depth against defended beaches. In the far term (around FY 2011-2015), the Navy is pursuing a science and technology effort to develop air-delivered munitions designed to destroy mines and obstacles.

## **MARINE CORPS POSITION**

A family of MCM systems that allows naval expeditionary forces to detect VSW/SZ/BZ mines and obstacles, avoid them when able, and breach them when necessary, must be fielded as soon as possible. The most critical MCM deficiencies exist in the surf zone and the beach zone, where detection and neutralization capabilities are extremely limited. Very shallow water capabilities must be enhanced to increase capacity, improve responsiveness, and eventually remove the man from the minefield.