



Whosoever can hold the sea has command of everything. -Themistocles (524-460 B.C.)

Mine warfare is one of the most cost-effective ways to wage war or defend a territory. Naval mines, in particular, are a relatively inexpensive means for a force with limited military means to stand toe-to-toe with a superior adversary with greater capabilities.

As an example, in 1945, at the end of World War II, the Navy had more than 500 ships and 33,000 officers and men in their Pacific minecraft fleet alone. Five years later, due to budget cuts, a general lack of interest in mine warfare, bad intelligence, and poor planning, 250 ships carrying a 50,000-man amphibious assault force was forced to loiter for five days past the intended D-Day for the invasion of Wonsan, Korea. The reason? The Navy had let its minesweeping force dwindle to the point where they only had seven sweeps, three of which were sunk, available to clear the way for the invasion force. By contrast, the landing in Okinawa 5 years prior required more than 100 sweeps.

Rear Admiral Allan E. Smith, the Advance Force Commander, speaking of this catastrophe, said, "We have lost control of the seas to a nation without a Navy, using pre-World War I weapons, laid by vessels that were utilized at the time of the birth of Christ."<sup>2</sup>

"Sea mines and MCM (mine countermeasures) have played a significant role in every major armed conflict involving the United States since the Revolutionary War."<sup>1</sup> The U.S. Navy has a predictable pattern, proven again and again throughout its history, of neglecting mine warfare until a need arises to dust off the lessons learned and forgotten and, once again, admit that mine warfare should be held in higher regard.

As Admiral Kidd said just prior to the clearance operation in Haiphong harbor in 1973, "Minesweeping seems to acquire sex appeal once every 25 years [when a crisis occurs]. The intervening hiatus is quite a hurdle to overcome."

In 1987-88, Operation Earnest Will, the American effort to protect Kuwaiti-owned tankers from Iranian attack, also known as the Tanker war, saw Iran lay approximately 150 mines in the Strait of Hormuz; one of which exploded under the supertanker MV *Bridgeton*. Less than a year later, an Iranian copy of a Russian mine that was designed in 1908 and cost \$1000 almost sunk the U.S. frigate USS *Samuel B. Roberts*. Her repairs cost \$57 million.

During the buildup to Operation Desert Storm, the Iraqis laid 1157 in the waters off of Kuwait which ultimately resulted in the cancellation of an amphibious landing into Kuwait, and also took two U.S. warships out of the fight for the duration of the operation. The first, USS *Tripoli*, struck a \$1000 Iraqi produced LUGM-145 moored contact mine which caused her to lose a third of her fuel and cost \$10 million to repair. Hours later, USS *Princeton* was hit by two \$10,000 Italian Manta bottom mines which severely damaged her and put her out of commission as the Air Warfare Commander responsible for protection of the rest of the ships in the area, including USS *Tripoli*, until she could be towed out of the minefield. She eventually wound up in drydock in Dubai, UAE for repairs which ultimately cost in excess of \$100 million.

<sup>1</sup>Chairman, U.S. Joint Chiefs of Staff, Barriers, Obstacles, and Mine Warfare for Joint Operations, Joint Publication (JP) 3-15 (Washington, DC: CJCS, 26 April 2007), IV-1.

<sup>2</sup>LCDR Arnold S. Lott, *Most Dangerous Sea* (Annapolis, MD: U.S. Naval Institute, 1959), 270.

After Desert Storm, nine countries worked together for nine months to clear the naval mine threat in the Persian Gulf.

Unfortunately, after the first Gulf War, some of the lessons learned faded due to events that required EOD forces to focus on other areas such as operating away from the sea in forests, mountains and deserts. Currently, as the threat of rogue nations such as North Korea, Iran and its proxies continue to dominate the headlines, the focus swings, once again, back to the areas of mine warfare and mine countermeasures.



Much of what we know about the functioning and employment of modern mines was gleaned during the first Gulf War by recovering and reverse engineering mines laid by Iraq. This was accomplished, in part by EOD technicians manually and explosively stripping mines that had been neutralized, raised towed and beached.

The first Gulf War proved that the ability to remotely and explosively strip naval mines was crucial to gaining intelligence foreign mine functioning and enemy tactics. Today, the last of the sailors that helped develop those techniques are still on active duty but some of the lessons learned are fading.

In an effort to assist in keeping those skills alive and well practiced, Point One developed the Mine Countermeasures Exploitation and Stripping System (MCME&S). A system used for practicing explosive stripping techniques and remote rigging and removal of mine componentry without having to source real or exercise mine shapes. It includes modular replicas of mine components that were designed to reflect actual weights and shapes. It has been used in training to practice explosive stripping techniques at a fraction of the cost of sourcing actual training shapes.

Pictured below, a unit experiments with different stripping techniques on the Manta Variant configuration of the MCME&S. The simulated Manta sensor package is designed to mimic design characteristics found on the actual Italian mine to facilitate charge placement and remote rigging.

