

MK 54 Lightweight Torpedo



The MK 54 is the only lightweight torpedo capable of striking any target in the world's oceans, regardless of water depth.

Benefits

- Counters both shallow-water and open-ocean threats
- Provides effective defense from surface to full-operating depth
- Upgrades easily from MK 46 via MK 54 Upgrade Kit
- Delivers the lowest total cost of ownership of any modern torpedo
- Incorporates into any modern navy worldwide
- Deploys from surface ship, helicopter or fixed-wing aircraft
- Leverages extensive and continuous U.S. Navy in-water testing and analysis

New Threats to Counter

In today's changing high-tech world, new, more potent threats are emerging. Slow, quiet, diesel submarines, for example, are now operating in shallow-water, littoral areas. As a result, lightweight torpedoes designed to defeat high-speed, nuclear-powered submarines in open-ocean environments are ineffective.

Navies now need a lightweight torpedo capable of delivering a devastating blow to submarine threats in both deep and shallow water — and in various acoustic environments. That torpedo is the U.S. Navy's MK 54.

Leveraging Modern Torpedo Technologies

The MK 54 can be deployed from a surface ship, helicopter or fixed wing aircraft to track, classify and attack underwater

targets. It uses sophisticated processing algorithms to analyze the information, edit out false targets or countermeasures, and then pursue identified threats.

The MK 54 program leverages the most modern torpedo technologies from the MK 50 and MK 48 ADCAP (advanced capability) programs. It also utilizes the proven MK 46 warhead and propulsion subsystems. The result is a low-cost weapon that meets all performance requirements for littoral warfare.

Easily Upgradeable From MK 46

Featuring many improved capabilities, the MK 54 is the next-generation of the MK 46 torpedo. In fact, navies with MK 46 models in their inventory can easily convert them into MK 54 torpedoes using the low-cost MK 54 Upgrade Kit.

The kit, which is easily installed in-country, replaces yesterday's components with state-of-the-art digital technology. Moreover, the MK 54 can be incorporated into any modern navy with minimum conversion costs because it is compatible with over 20 launch platforms.

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Repeatedly Tested and Proven

The MK 54 has proven itself in an exhaustive series of in-water and simulation runs against the world's most sophisticated targets. Time and again the MK 54 found and attacked its target in spite of environmental conditions, threat maneuvers and countermeasures. With proven capability against submarine targets, the MK 54 is the most tested torpedo in the world.

State-of-the-Art Components

Sonar — Has evolved from the technology demonstrated in the MK 50, which was proven through thousands of at-sea runs conducted against real submarines in countered scenarios and all environmental conditions. The sonar nose construction provides low array self-noise; the acoustic array and digital beamformer provide superior performance in littoral areas; and the transmitter flexibility and dual-band receiver provide extensive and effective volume coverage.

Guidance and Control Section — Combines proven MK 48 and MK 50 torpedo technologies with the latest commercial-off-the-shelf (COTS) processing power (14 gigaflops) in an expandable open architecture. This processing power, coupled with the best of the MK 48 ADCAP and MK 50 detection, editing and tracking algorithms, provides an effective weapon in both littoral and open-ocean water.

Warhead System — Consists of the MK 103 Mod 1 Warhead and the MK 20 Mod 0 Exploder. The Warhead System has been deployed on U.S. Navy ships, aircraft and helicopters for over 26 years with no safety incidents.

Propulsion System — Combines the best of the reliable MK 46 Propulsion System with proven hardware components and technology from the MK 48 ADCAP and MK 50 torpedoes. This provides a highly reliable, variable-speed weapon with full performance over the depth and speed ranges of interest.

General Operational Characteristics

- Sea State 6+
- Launch Platforms
 - Ships: CG-47, FFG-7, DD-963, DDG-51 and any Surface Vessel Torpedo Tube (SVTT) (or equivalent launcher) equipped ship
 - Aircraft: P3-C, S-3B, SH-60 and various non-USN aircraft
- Targets: All diesel-electric and nuclear submarines
- Depth: Effective from surface to full-operating depth of any current submarine
- Countermeasure Resistance: Demonstrated Counter-Countermeasure (CCM) capability

Specifications

Length:	271 to 287 cm
Weight:	276 to 293 kg
Diameter:	32 cm



Raytheon's torpedo history spans more than 40 years of design, development, production, test and in-water proving experience.

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