



LOCKHEED MARTIN
We never forget who we're working for®

Nulka
Anti-Ship Missile Self Defense System



The Nulka decoy system is an integral part of the ship self defense system against active RF anti-ship missile attacks on most U.S. Navy ships.

The Nulka decoy system is an integral part of the ship self defense system against active RF anti-ship missile attacks on most U.S. Navy ships. Nulka is currently being installed on Australian and Canadian ships. This system has been highly effective in sea trials and modeling. Its incorporation into a ship's layered defense system is essential in providing ship survivability under high stress conditions in the littoral and open ocean environments.

Because of the characteristics of the decoy payload and the system's fast reaction time, the Nulka system is highly effective against current and new generation anti-ship missiles (ASMs). The system is effective over a full 360 degrees around the defended ship. The effectiveness of the decoy is wholly independent of ship maneuvers even

in the most extreme environmental conditions.

This decoy weapon system can be commanded automatically or manually by the ship's EW system or weapons control system. On receiving an ASM threat warning, the relative missile(s) angle of arrival and ship's positional data are used to preprogram the decoy via the Decoy Launch Processor (DLP). The DLP computes the best launcher to use and an optimized flight path for the selected decoy. The flight path data is communicated to the decoy Flight Control Unit prior to launch. At launch, the decoy payload immediately begins to engage the ASM seeker.

The decoy payload simulates a radar return from a large ship overlapping the "target" signal. The decoy provides a larger, more attractive target to the missile

consistent with the ASM's range and angle tracking and moves slowly away from the ship, thus defeating the threat.

The decoy operates autonomously after launch. The flight trajectory and decoy orientation are maintained by the Flight Control Unit in conjunction with thrust control of the rocket motor exhaust and a Spin Control Unit.

MK 234 MOD 1 Decoy

- Sealed in canister for long storage life
- Extensive self-test to assure availability
- Fast warm up for short reaction time
- Autonomous after launch
- Effective against all modern ASMs with radar seekers
- Single decoy effective against multiple ASM's
- Effective in all weather

Nulka Decoy Payload

The Nulka Payload has demonstrated exceptional performance against various ASM seekers and seeker simulators during sea trials and captive-carry testing. It also demonstrates excellent reliability and storage life.

Because of its inherent high gain and high effective radiated power (ERP), it protects large ships against ASMs with radar seekers. This capability, when combined with fast reaction time, also makes it effective against those ASMs which employ late seeker turn-on. In addition, the broad bandwidth capability and its independence from specific seeker characterization allows effective operation against all current and new generation ASM seekers.



High effective "end to end" self-testing is incorporated for pre-launch assurance of payload operability. The payload consists of an electronics mid-body section and modular receive/transmit antenna sub-assemblies. The electronics section is compartmentalized, for electromagnetic interference considerations into receiver and transmitter sub-assemblies. The antennas contribute to overall gain and provide sufficient angular coverage to engage multiple ASMs. The receiver detects and amplifies all in-band signals and, through programmable signal processing, rejects own force emitter signals. The high power transmitter provides the microwave output signal. Each sub-assembly derives its power from a highly reliable thermal battery.

Nulka is highly effective against current and new generation anti-ship missiles (ASMs).

Operational Features

- Broadband to encompass all current and new generation ASM seekers
- High gain and effective radiated power for large ship protection
- Fast warm up for short reaction time
- Self-contained signal processing for compatibility with own force emitters
- End to end self test to assure availability
- Length: 78.7 inches
- Diameter: 7.9 inches
- Weight: 148.8 lbs.

Technology Features

Antenna assembly

- broadband horns
- state-of-the-art isolation
- modular

Receiver assembly

- hybrid microwave circuits
- autonomous signal processing
- built-in protection for high power inputs
- high gain with state-of-the-art gain stability

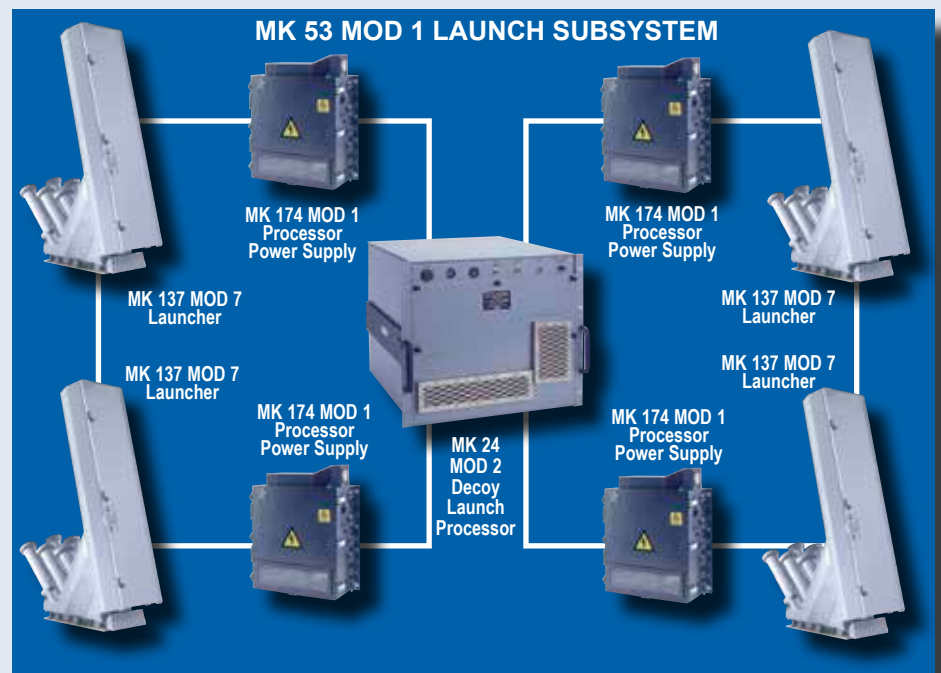
Transmitter assembly

- high power
- high gain
- high frequency inverted power supply



MK 53 MOD 1 Decoy Launch System

- Multiple launchers per ship
- Two decoys / launcher
- Automatic or manual operation
- Only ASM bearing needed for launch
- Decoy Launch Processor (DLP) computes optimum flight path and launch time
- Processor Power Supply (PPS) provides firing circuits and communication link



Lockheed Martin
Mission Systems & Training
300 M Street, SE
Washington, D.C. 20003, USA
www.lockheedmartin.com/mst/product_contacts

Copyright ©2011 Lockheed Martin Corporation
All rights reserved
PIRA #MAN200612001