Laser shoots down drones at sea (w/ Video)

July 21 2010, by Lin Edwards

The Phalanx Close-in Weapon System. (Credit: Raytheon)

(PhysOrg.com) -- An infrared laser developed by Arizona company Raytheon Missile Systems has been demonstrated shooting down incoming drones over the ocean off the coast of California.

The video of the demonstration, taken at an off-shore US Navy test range 120 km west of Los Angeles, was released on July 19th at the biennial International Air Show at Farnborough in the UK. The 32-kilowatt solid-state laser was mounted on a warship gun turret and was shown blasting a remotely piloted unmanned aerial vehicle (UAV)

until it caught fire, lost control, and plummeted into the sea. In all, four UAVs were shot down in the seagoing tests.

Raytheon's vice president Mike Booen said the demonstration was a world first with ship-borne lasers shooting down threats from the air at "military significant distances." Firing a laser at sea is much more difficult than firing from land because it is mounted on a ship, which is moving and rolling with the waves, and it is also in a humid environment heavily laden with salt air.

The US Navy and coastguard's standard defense system, the Phalanx Close-In Weapon System, currently overcomes the problem by using a high caliber, radar-guided Gatling gun that is able to counteract the ship's movements to track and shoot down incoming objects. The Gatling has been used for over 30 years and is capable of firing up to 4,500 rounds of 20-mm ammunition per minute.

The Navy's new system for defeating close-in air and surface missiles or drones is known as LaWS (Laser Weapon System) and is paired with Raytheon's Phalanx. The system comprises six lasers that focus on the target simultaneously, delivering energy high enough to cause it to catch fire. Range data is provided to the laser system by Phalanx radio-frequency sensors, and Phalanx electro-optical sensors acquire the targets and track them.

Editor of Jane's Defense Weekly, Peter Felstead, said the laser marks the beginning of a new era in missile defense technology, since lasers are becoming smaller and more effective and can be used to destroy a wide range of threats from the air, from mortars to missiles.

Raytheon said the laser system tests are continuing, but the system is unlikely to be ready for deployment until 2016.