L3HARRIS®
FAST. FORWARD.

ADVANCED UNDERSEA PROPULSION

From deep sea to deep space, L3Harris propulsion powers defense across multiple domains.


L3Harris SCEPS concept illustration.

OUR ROLE

L3Harris provides a full range of propulsion and power systems for next generation torpedoes. Our portfolio includes the groundbreaking Stored Chemical Energy Propulsion System (SCEPS) technology, new electric propulsion systems and deep throttling Otto-fueled propulsion systems. We have the production infrastructure and agility to support our customers' needs in an evolving geo-political environment.

SCEPS

L3Harris is at the forefront of advancing SCEPS technology to power the U.S. Navy's next-generation torpedoes. Home to the industry's only SCEPS production facility, L3Harris is well positioned to manufacture this advanced torpedo propulsion system for years to come.

SCEPS uses a boiler to generate heat, creating steam to drive the turbine that propels the torpedo to intercept its intended target.

SCEPS-powered torpedoes enhance the Navy's capability to deliver both offensive and defensive weapons to their target in contested waters.

ELECTRIC PROPULSION

Recent advances in battery technology and electric motor power density are enabling the development of electric propulsion systems with performance that meets many torpedo mission requirements. L3Harris has established an electric torpedo propulsion testbed for assessing the applicability and efficiency of high power density batteries, motors and controllers for a variety of torpedo sizes and missions.

OTTO FUEL

Otto fuel is a traditional propellant that has been used to power torpedoes since the 1960s. It is a monopropellant chemical mixture that fuels the torpedo's propulsion system using a thermodynamic combustion cycle.

L3Harris has developed novel combustor technology that significantly increases the efficiency of Otto fuel-based propulsion systems and provides deep-throttling capabilities, which enable torpedoes equipped with this technology to support a wide variety of mission requirements.


An exercise Mk 54 torpedo is launched from the Arleigh Burke-class guided-missile destroyer USS Roosevelt. U.S. Navy Photo.

The appearance of U.S. Department of Defense (DOD) visual information does not imply or constitute DOD endorsement.

BENEFITS

PROPULSION SYSTEMS

- Full range of propulsion and power systems for next-generation torpedoes
- Industry-leading SCEPS technology with exclusive production facility
- Advanced boiler SCEPS for high-performance torpedo propulsion
- Enhanced Otto fuel efficiency with novel combustor technology

PROGRAM CONTRIBUTIONS

- Power plant and integrated afterbody provider for Navy's CRAW MK 58 torpedo
- SCEPS prototype delivery for MK 54 MOD 2 Lightweight Torpedo advancement
- Offensive and defensive capabilities support with CRAW torpedo systems
- Undersea Propulsion Manufacturing Center of Excellence based in Orlando, Florida

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PROGRAMS

COMPACT RAPID ATTACK WEAPON

L3Harris powers the Navy's Compact Rapid Attack Weapon (CRAW) MK 58 torpedo as part of the Raytheon Missiles & Defense team. The company provides the power plant system and tail assembled into an integrated torpedo afterbody for the next generation CRAW torpedo.

CRAW can be used offensively against enemy submarines and can serve as a defensive weapon to eliminate incoming torpedoes.

MK 54 MOD 2 ADVANCED LIGHTWEIGHT TORPEDO

L3Harris is on contract to deliver SCEPS prototype afterbody assemblies for an advanced propulsion system for the MK 54 MOD 2 Advanced Lightweight Torpedo. The MK 54 lightweight torpedo is the primary anti-submarine warfare weapon used by Navy surface ships, fixed-wing aircraft and helicopters.

PRODUCTION CAPABILITIES

L3Harris' Center of Excellence for Undersea Propulsion Manufacturing, based in Orlando, Florida, includes the only SCEPS manufacturing capability within the U.S. industrial base and plays a key role supporting the Navy's next generation torpedoes.

The guided missile destroyer USS O'Kane fires an Mk 54 exercise torpedo.

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1025 W. NASA Boulevard
Melbourne, FL 32919

L3Harris.com