

TACTICAL AIR INITIATED LAUNCH (TAIL) SYSTEM

THE CHALLENGE

Special Operations Forces needed reliable, quiet access to structures from a short standoff distance, and their existing grappling gun did not meet operational requirements.

THE SOLUTION

Battelle engineers designed, developed, tested, and produced the new Tactical Air Initiated Launch (TAIL) system.

The TAIL system uses compressed air obtained from a diver's standard SCUBA tank to drive a piston down its 2-inch-diameter barrel. The front of the piston acts as a sabot, holding a grappling hook attached to a line. At the end of its travel, the piston is brought to a stop and the grappling hook continues toward its target. When the piston stops, it traps the compressed air, which vents quietly through a diffuser. Containing the piston decreases the noise of launching the grappling hook. The piston can be removed to enable the TAIL to throw any object that fits into its barrel.

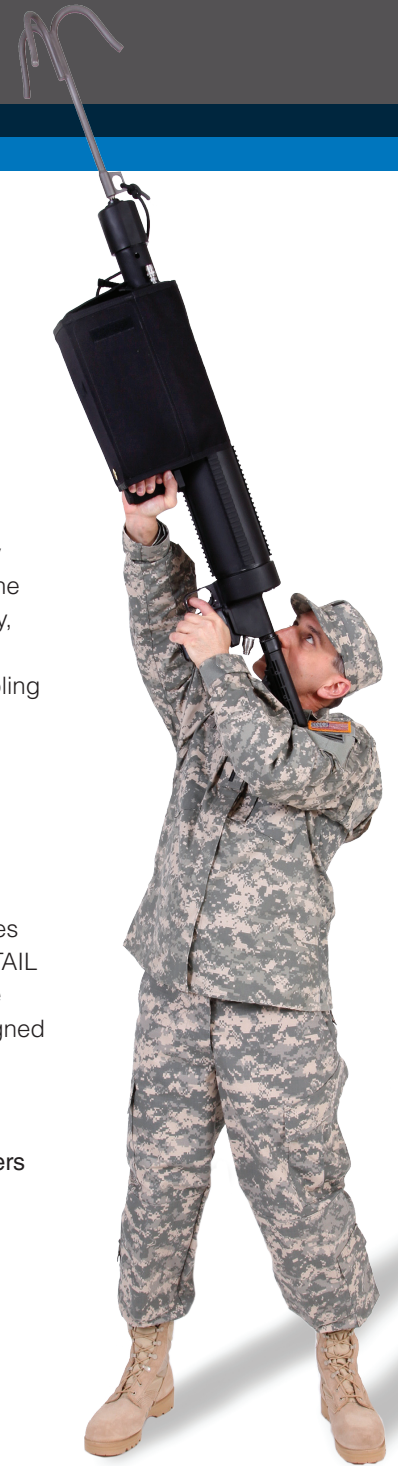
Using its maximum air pressure of 300 psi, the TAIL can fire a standard 2-pound titanium grappling hook towing a 6-millimeter Kevlar® line over an obstacle 100 feet high at a standoff of 60 feet.

Unlike its predecessor, the TAIL enables the operator to adjust the vertical range by reducing the air pressure used to launch the hook. The shoulder stock, trigger assembly, and forward grip match those of current Special Operations Forces weapons, enabling users to quickly become comfortable with the TAIL.

THE BENEFITS

The TAIL enables an operator to fire a grappling hook in a tactical environment without the noise or explosives safety issues associated with powder-driven units. The TAIL is lighter, quieter, more powerful, and more versatile than its predecessor, and is designed for ruggedness and easy maintenance.

The TAIL, in service with Naval Special Warfare forces, was featured on **MythBusters** "Superhero Hour" (episode 86) and the Military Channel "Rangers" episode.



Every day, the people of Battelle apply science and technology to solving what matters most. At major technology centers and national laboratories around the world, Battelle conducts research and development, designs and manufactures products, and delivers critical services for government and commercial customers. Headquartered in Columbus, Ohio since its founding in 1929, Battelle serves the national security, health and life sciences, and energy and environmental industries. For more information, visit www.battelle.org.

800.201.2011 | solutions@battelle.org | www.battelle.org

Battelle and its logos are registered trademarks of Battelle Memorial Institute. © Battelle Memorial Institute 2017. All Rights Reserved.

ID 217 01/17

BATTELLE
It can be done