

Divers Go Deep with Propulsion Devices

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Swimming and diving, particularly in rough waters, can be demanding work. Special operations divers need to stay fit to do their jobs as they conduct reconnaissance or remove obstacles in hostile waters. In some cases, that means using a special transport device to get to work instead of expending the energy it would take to swim there.

In response to Navy and Marine Corps requirements, several companies have developed diver propulsion devices, either large diver propulsion vehicles or smaller swimmer transport devices (STD). USSOCOM currently acquires swimmer transport devices from STIDD Systems, Inc., under a nine-year firm fixed-price contract. STIDD, based in Greenport, NY, has provided USSOCOM with 28 devices to transport SOF combat swimmers whenever the distance is too far for a quick swim, according to a notice from the command.

According to a USSOCOM spokesperson, "Naval Special Warfare combat swimmers have the capacity to unobtrusively observe or attack targets proximate to enemy littoral or inland waterways. Combat swimmers are transported to the mission area by a variety of surface and subsurface insertion and extraction vessels. Once separated from the insertion platform, the combat swimmer must depend on his training, self-contained resources and strength to complete the transit. Typical combat swimmer missions the swimmer transport device will support the harbor and shore reconnaissance, littoral reconnaissance in support of fleet over-the-shore operations, insertion and extraction operations, ship attack and neutralization of harbor defense systems. The swimmer transport device supplements the combat swimmer ability to transport him and his mission-essential equipment from the insertion platform to the target area and return to the extraction platform. Most importantly, it allows combat swimmers to transit longer distances, deliver increased payloads, limit exposure time to cold water, minimize excessive exertion and fatigue, maximize endurance and increase time available in the mission area."

The STIDD swimmer transport device met or exceeded all requirements established in the swimmer transport device operational requirements document, according to USSOCOM. "However, USSOCOM is always interested in battery technology that can significantly improve range and speed

performance while decreasing life-cycle sustainment costs of these transport devices." The command has undertaken an effort to convert the traditional silver-zinc batteries on the devices to lithium-ion battery systems to boost the length of time the units can travel.

STIDD

The USMC recently awarded STIDD Systems a contract to provide Diver Propulsion Devices (DPD) to Marine Amphibious Reconnaissance units. The Marines have an acquisition objective of over 300 DPDs in support of the USMC underwater reconnaissance capability (URC) requirement. A USMC official stated that the "STIDD DPD is a mission critical platform that along with other components of URC will ensure Marines can successfully execute expeditionary reconnaissance by detecting any natural or man made obstacles or barriers that would hinder deployment of the Expeditionary Fighting Vehicle or other landing craft".

"The STIDD DPD enhances the combat swimmers ability to transport him and his mission-essential equipment from the insertion platform to the target area and return to the extraction platform. Most importantly, it allows combat swimmers to transit longer distances, deliver increased payloads, limit exposure time to cold water, minimize excessive exertion and fatigue, maximize endurance, and increase time available in the mission area" said Walter Gezari president and CEO of STIDD.

USSOCOM also currently acquires DPDs (USSOCOM call their version the Swimmer Transport Device, or STD) from STIDD under a nine-year firm fixed-price contract. STIDD has provided USSOCOM with 28 DPDs to transport SOF combat swimmers to and from the Advanced SEAL Delivery System (ASDS) whenever the distance is too far for a quick swim, according to a press release from the command. The STIDD DPD met or exceeded all requirements established in the operational requirements document, according to USSOCOM.

"Typical combat swimmer missions the STIDD DPD will support are harbor and near-shore reconnaissance including electronic hydrographic mapping, littoral reconnaissance in support of fleet over-the-beach operations, insertion and extraction operations, ship attack and neutralization of harbor defense systems. All of these missions require operators to carry a variety of communication equipment, weapons



The STIDD DPD, weighing in at 159 pounds complete, is easily carried by two persons.

(STIDD photo)

and other equipment common to combat support operations", said Gezari.

The Authorized for U.S. Navy Use (ANU)-certified DPD is powered by a specially designed lithium-ion battery system called the Massive Unit Small Cell Lithium-Ion Energy System (MUSCLES). MUSCLES Li-Ion is the only diver propulsion device lithium power system to receive NAVSEA 8310 Safety Approval and NAVSEA 9290 Sub-safe certification for transport and deployment aboard U.S. Navy ships and nuclear submarines. It provides a minimum of 250 operational cycles per battery and requires only eight hours to recharge, according to STIDD Systems.

The DPD, coupled with the MUSCLES battery system, is 88 inches long when deployed or 55 inches when stowed for transport. The DPDs are equipped with depth gauges, a magnetic compass and light stick tubes to illuminate instruments.

Built of marine-grade aluminum alloy, the DPD weighs 159 pounds. Each device can carry two fully equipped combat swimmers and up to 100 pounds of cargo at speeds of over three knots for over two hours, with a range of over five nautical miles.



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