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New ROV takes flight

Marine Exploration Services recently launched its new remotely operated vehicle (ROV), dubbed the Nova Ray, for underwater pipeline, tie back, route planning inspection or other duties.

Mimicking the look of a small, yellow manta ray, the ROV allows simultaneous dual-side-scan and forward-scan sonar while under tow, the only ROV with such capabilities, according to Andrew Tull, vice president for Marine Exploration. The digital, multifrequency sonar ensures up to 800 ft (244 m) of total coverage using 12-volt power and GPS interface features, with 10 to 15 megabytes of data storage per hour.

The machine's patented arcuate wing design reduces cable drag and allows the ROV to be towed by boat at speeds up to 9 knots, "which is three times faster than anything else out there," Tull said. The unit can self-propel up to 6 knots.

Variable thrusters under each wing allow movement forward, backward, up, down and side to side with a 360-degree point of action on a Z-axis. The unit can be "flown" while under tow or can hover in a specific position for close-up video or sonar.

"That capability allows us to do a one-pass inspection," he said. "With the box-like ROVs, you have to drop, take data, bring it back up and then repeat the process when something is missed. That costs time and money."

Marine Exploration's ROV uses two cameras simultaneously, forward and aft, to ensure accurate positioning and video and data capture, allowing complete inspections up to seven times faster. Also, the system operates 70% deeper than conventional underwater towed vehicles systems using the same cable length, due to its efficient ratio of 2.38 ft (0.7 m) of cable for every foot of depth.

"Our clients get quality data within hours, not weeks, so they can quickly make actionable decisions, usually with a 50% cost savings," he says.

The polyurethane-resin unit is lightweight, averaging about 70 pounds

including its airline carrier case, so no crane or special transport is required. It is 1,022 millimeters long and 997 millimeters wide. The ROV can be deployed on site within 24 hours and then assembled and launched in another 30 minutes — a lead time guaranteed by Marine Exploration's "Right Now Guarantee."

"These units are deployed from workboats as small as 20 to 35 feet (6 to 10.6 m), so there is no need for the 'moonpool' on a platform," Tull said. "The deployability is one of its best attributes."

The ROV itself is a system of modularization. If a customer has a specific task to be undertaken, such as an environmental or naval ordinance disposal survey, special-purpose laser positioning or other fixtures can be attached, Tull said.

The unit's robust and neutrally buoyant construction allows it to operate in water up to 1,000 ft (305 m) deep (which includes 60% of the pipelines in the Gulf of Mexico). Going forward, the company is working to develop enhanced models that will operate at 7,000 ft (2,135 m) and ultimately 15,000 ft (4,575 m).

The ROV is managed by a crew of master divers available to dive if necessary, and is controlled by GIS software and data supplied by customers and the US Materials Management Service. "We use those, in conjunction with our own proprietary as-built software, to map and chart the course to deploy appropriately," Tull said.

Replacement parts are carried with the unit, so up to 90% of any necessary repairs are completed on the fly, he said.



*The Nova Ray ROV.
(Image courtesy of Marine
Exploration Services)*