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TECH FILE

For Unmanned Ultra-Lightweight Boats

Seakeeper Gyro

Zyvex Technologies claims that its Piranha USV (unmanned surface vessel) is the largest boat of its kind built from nano-enhanced materials. Constructed entirely of Arovex, a nanotube-reinforced carbon fiber, the 54-ft boat weighs less than 9,000 lbs and can carry up to 15,000 lbs over 2,500 miles or more. The Piranha USV is equipped with one M7000A Seakeeper Gyro in order to stabilize the vessel. "Stability is especially important on a vessel intended for unmanned operations," said Zyvex director of defense applications Mike Nemeth. "The Piranha is so lightweight that the Seakeeper's impact on the stability is amplified. Since we were able to develop the Piranha from a clean sheet design perspective, we had the opportunity to incorporate the latest systems without compromising other requirements."

The Piranha USV is designed to perform a wide range of applications, such as surface surveillance, anti-piracy, search and rescue, submarine warfare, mine countermeasures and harbor patrol. "The Seakeeper has exceeded expectations during the initial sea trials," said Nemeth.

Piranha USV Specifications:

Length	53.4 ft
Width	10.5 ft
Empty weight	<8000 lbs
Full load displacement	<23,000 lbs
Draft	2 ft
Fuel capacity	1400 gal
Fuel type	Diesel
Maximum speed	45+ knots
Cruise speed	25 knots
Range @ cruise speed	2800+ nm
Cruise endurance	96+ hrs
On station endurance	40+ days
Silent loiter ability	120+ hrs
Payload capacity	15,000+ lbs

- Mk 54 Torpedos
- RGM-84 Harpoon Missiles
- AGM-114 Hellfire Missiles
- 7.62 Stabilized Machine Gun
- MCM Towing Capability
- Internal Active/Passive SONAR



The Piranha USV in sea trials
Inset Left: The M7000A Seakeeper Gyro.