

# **JULIET** **MARINE** **SYSTEMS, INC.**



***Innovations in High Performance Marine Technology***



## Juliet Marine Systems

Juliet Marine Systems (JMS) is an innovative marine technology company dedicated to advancing high performance watercraft. JMS has solved the technical challenge of controlling small waterplane area twin hull (SWATH) vessels at high speed and is commercializing active drag reduction technology. Headquartered in Portsmouth NH, home to many historic Naval innovations, JMS is dedicated to delivering class-leading performance to commercial and defense applications while continuing to innovate and advance the state-of-the art in high performance marine systems.

### Our Technology

JMS has developed two different technology solutions, SWATH control and drag reduction.

Our SWATH control allows us to operate a hull form that is typically hard to control, smoothly and safely at speed. Our forward mounted propellers and digital control system make this possible. Much like electronic stability control helps modern cars stay on the road as they move faster or into slippery conditions, our system uses computers to make decisions to keep the vehicle moving safely.

Drag reduction allows us to reclaim energy wasted by conventional propulsion - the trail of bubbles you see behind power boats - and redirect it to reduce drag. We can actively manage movement of air around our hulls and we do so without pumps, fuel or moving parts. As air is much less dense than water it is desirable to have air around as much of the hull as possible. Similar to turbo chargers on car engines, which use exhaust gas to drive improvement in engine performance, we harness otherwise wasted energy for positive purposes. Our privately funded technologies are protected by current and pending patents.

#### Drag reduction through gas generation



**SWATH control using proprietary traction propellers, hybrid drive, transmissions and control surfaces**

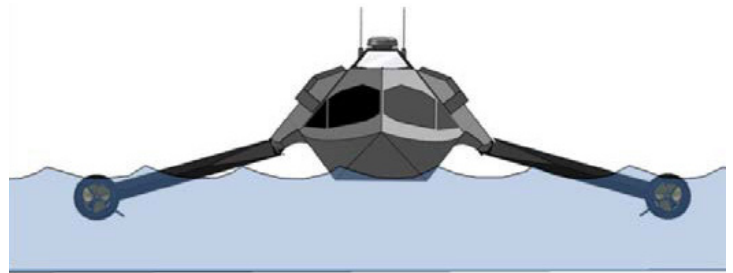
# GHOST

GHOST is a reconfigurable high-speed small waterplane area twin hull (SWATH) vessel that delivers significant advantages over alternative vessels in this size class (35-45 feet length overall).

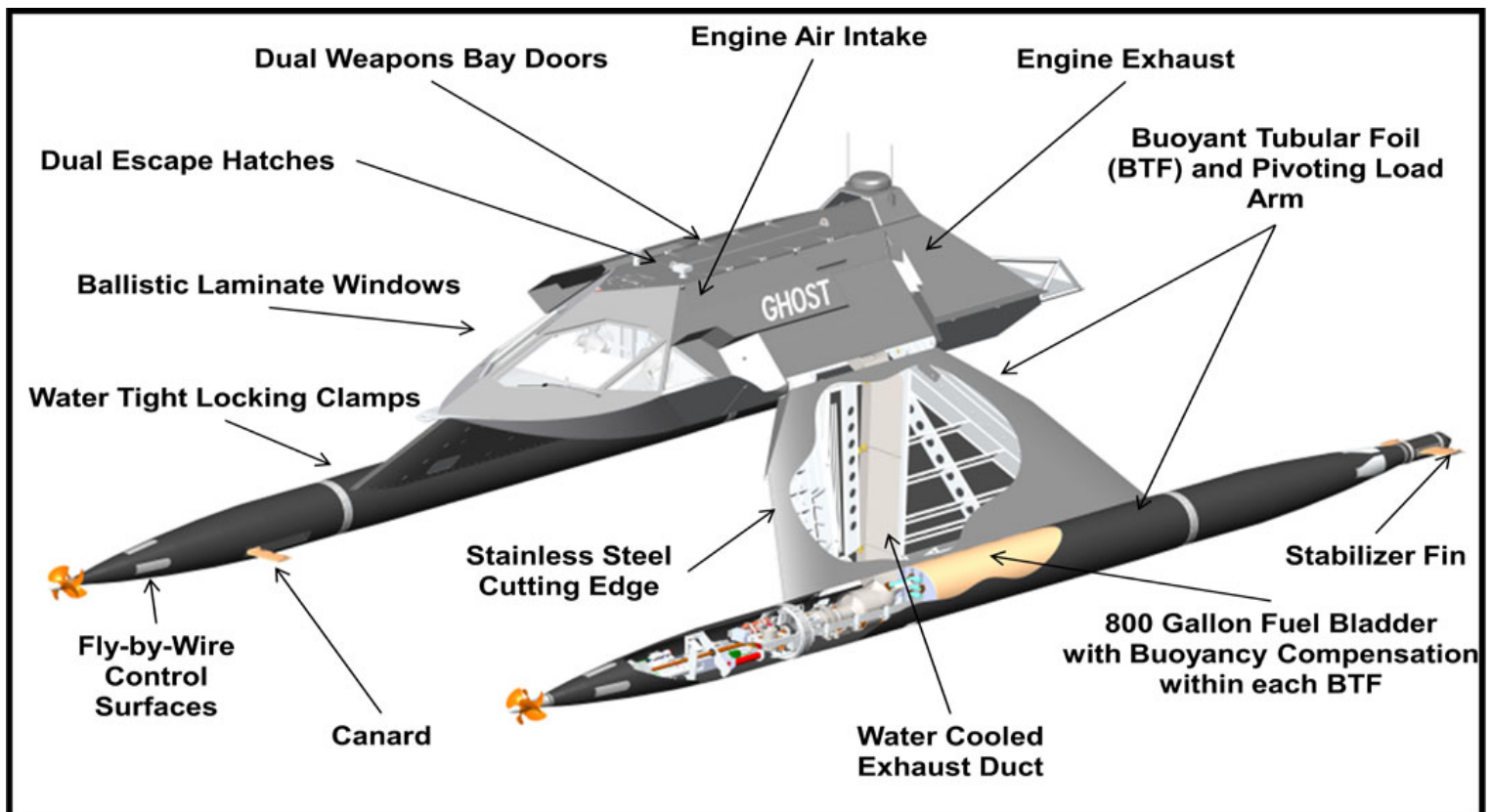
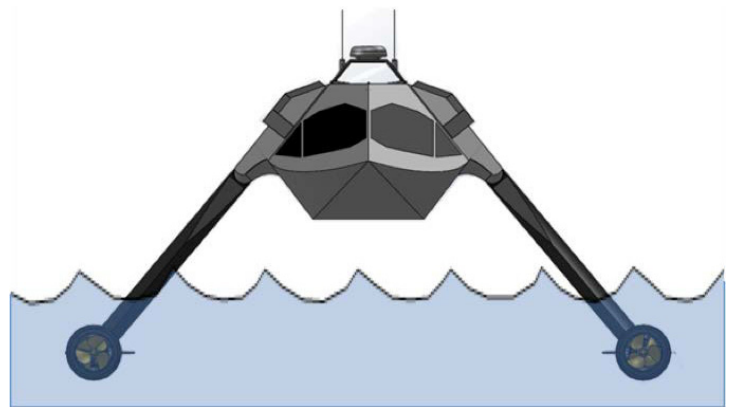
- Inherent shock avoidance for reduced personnel injury/fatigue and improved mission performance
- Shallow draft for coastal operations
- Optional low radar and visual signature
- Tactical speed and maneuverability even in high sea states
- Hybrid turbine and electric drive for both high speed operations and long loiter times
- Optional active drag reduction increases speed with no added fuel, power or moving parts required
- All digital bridge allows for easy conversion to unmanned operations
- Modular mission payload bay with numerous military and commercial configuration options

# Reconfigurable SWATH

Slow & Shallow



High Speed & Sea State



# Exceptionally smooth ride



## GHOST Ride Quality

GHOST's stable, shock avoiding hull provides significant advantages:

- Reduced crew stress, fatigue, sea sickness and injuries
- Higher speeds in elevated sea states
- Improved tactical capabilities - stable sensors, better weapons accuracy

Ride quality video available online: <http://www.julietmarine.com/news.htm>

## Specifications *Scalable*

Parameter	Current GHOST Vessel	Future Generation
Crew	2	2
Passengers	16	18
Maximum Speed	Current 32.5 knots, +5% with drag reduction	70 knots +
Max wave height at full speed	6 to 8 Feet	6 to 8 Feet
Power	2 x 1800 HP Gas Turbines	2 x 3000 HP Gas Turbines
Empty Weight	22 Tons	22 Tons
Design Payload	4 Tons	5 Tons
Fuel Weight	6.4 Tons (1700 US Gallons)	8.2 Tons (2200 US Gallons)
Range Envelope	350-500 Miles	450-700 Miles
Max. Weight	32.4 Tons	35.2 Tons
Length	62 Feet	62 Feet
Width	Variable 25 to 40 Feet	Variable 25 to 40 Feet
Draft	Variable 4 to 6 Feet	Variable 4 to 6 Feet



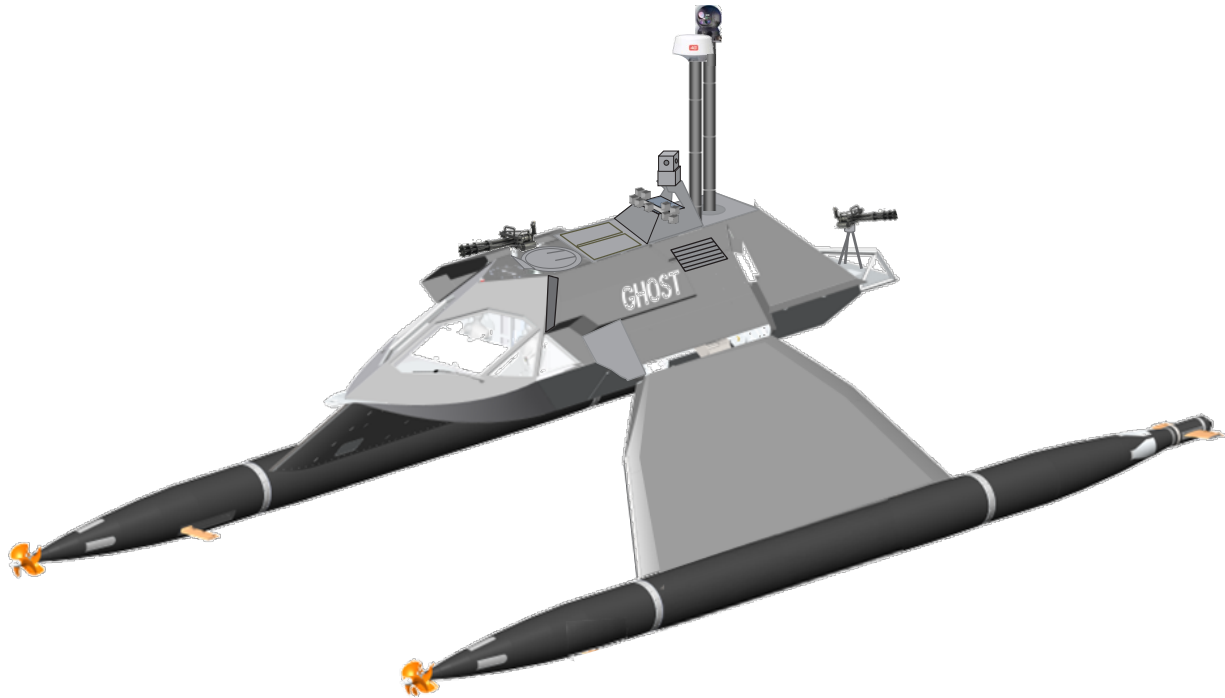
**Digital Bridge**



**Modular Mission Bay**

# GHOST Applications

GHOST and its variants are suitable for many defense, civilian government, recreational and commercial applications. The modular payload bay enables customer specific systems to be integrated during construction or after delivery. The example shown here demonstrates how the current GHOST design can be configured for fleet security requirements. Alternative versions include fast ferry/offshore personnel vessel, safety law enforcement and luxury yacht. Please contact JMS to discuss your specific requirements.



## Defense: Intelligence Surveillance & Reconnaissance – Fleet Security



### Defense

- Fleet defense
- Special Operations
- ISR



### Safety / Law Enforcement

- Search & Rescue
- Drug/migrant interdiction



### Recreation

- Motor yachts
- Personal water craft



### Commercial

- High speed ferry
- Offshore supply vessel

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