

STILETTO

Demonstrating the Future of Naval Craft in the Littoral



Fast • Agile • Shallow Draft • Shock Mitigating • Stable • Large Payload • Low Wake
High ROI • Innovative • Rapid Production • Scalable • Littoral Centric • Adaptable

The Stiletto, a Twin M hull vessel, is 80 ft in length with a 40 ft beam providing a rectangular deck area equivalent to a conventional displacement craft 160 ft in length. The vessel's draft fully loaded is 3 ft and is designed for a speed of 50-60 kts. Its superior performance is based on M Ship Co.'s proprietary, globally patented technology, recapturing the bow wave using its energy to create an air cushion for more efficient planing.

M Ship Co. was responsible for the design and construction of the vessel made solely of carbon fiber for reduced weight and increased stiffness, the largest vessel ever built in the U.S. of this advanced material. It will be delivered to the Office of Force Transformation to establish scalability of the M hull technology.

M Ship Co. has designed a family of such vessels to qualify for the full range of missions contemplated for operations in the littoral or coastal zone. These will offer significant advantages over conventional displacement or planing craft based on the U.S. military's new littoral missions where efficiency, low cost, innovation, higher payload fraction, agility, shock mitigation, shallow draft and stealth are the new priorities for the next generation naval craft.

The M Ship Co. creates and develops transformational solutions for the maritime industry by applying creative design & physical science with talented people in a work environment that inspires innovation, integrity, respect and responsibility.

www.mshipco.com



M Hull—Various
 Length—5-20 ft.
 Beam—2-10 ft.
 Draft—0-2 ft.
 Speed—10-50 kts



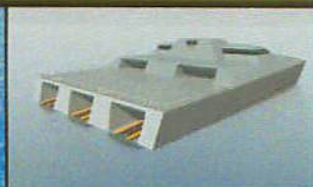
M Hull—Single
 Length—40 ft.
 Beam—15 ft.
 Draft—2.5 ft.
 Speed—40+ kts



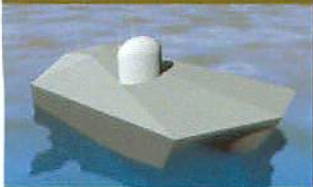
M Hull—Twin
 Length—80 ft.
 Beam—40 ft.
 Draft—3 ft.
 Speed—50+ kts



M Hull—Tri
 Length—160 ft.
 Beam—100 ft.
 Draft—4 ft.
 Speed—70 kts



M Hull—Tri or Quad
 Length—200-250 ft.
 Beam—100+ ft.
 Draft—5 ft.
 Speed—50+ kts



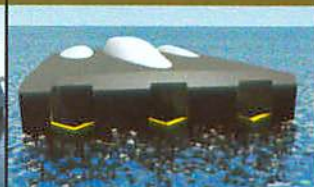
USV



C4ISR PATROL



SOF MISSIONS



FLOATING WING



MISSION PLATFORM

M SHIP CO.

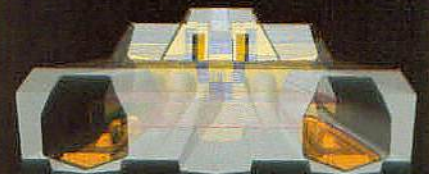
Innovation, Collaboration and Speed to Market



M Hull Prototype
Demonstrating
Low Wake

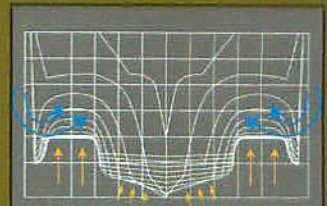
M Ship Co. and its M technology provide a broad-reaching solution to the future requirements of naval surface warfare by developing unique ship designs, working with nontraditional builders and partnering with traditional defense contractors. The future challenges of Littoral and Expeditionary warfare—where higher performance, faster build cycles and lower costs are essential to success—require that the ship design and construction process evolve from the "Industrial Age" to the "Information Age." Innovation, collaboration and speed to market need to replace sameness, hierarchy and infrastructure. Economies of scale need to give way to economies of networks where collaboration and partnerships provide the competitive advantage. The Stiletto, a product of the collaboration between OFT/OSD and M Ship, demonstrates this opportunity.

Innovation Creating Unforeseen Opportunities



The M-hull design is a non-conventional, captured-air design which transitions automatically and efficiently through hydrostatic, hydrodynamic and aerostatic lift modes with increasing speeds. It transcends the limitations of conventional hull form categories with a drag curve that is almost linear eliminating the typical drag hump across the entire lift range. Other advantages over conventional craft are listed below:

- **HIGH PAYLOAD FRACTION**—High lift-to-drag ratio for efficient propulsion and elimination of the hull speed limit of conventional displacement craft as it operates on a self generated air cushion.
- **LOW COST**—Reduced fleet costs based on higher reliability of construction, operation & maintenance without dependence on mechanical lifting vanes or air fans.
- **LOW INFRASTRUCTURE**—A simple hull form allowing carbon fiber construction avoiding the costly infrastructure required for conventional metal craft (The assembly of required panels can be accomplished in any open warehouse with completion of a Stiletto type vessel possible in approximately 6 months. This could greatly accelerate expansion of the new fleet required for littoral operations).
- **STABILITY**—A stable rectangular platform for weapon launching at any speed based on air lift in outboard planing tunnels.
- **EXCEPTIONAL AGILITY**—Capable of a high speed tight flat 360° turn with less than 10% loss of vessel speed.
- **SUPERIOR SHOCK MITIGATION**—in rough water as the fine entry bow generates an increased bow wave on contacting chop. This impacts on the ceiling of the planing tunnels, cushioning the downward movement of the bow.
- **SHALLOW DRAFT**—for high speed operations close to the shore (Stiletto draft fully loaded – 3ft).
- **NO BOW WAVE**—The bow wave is eliminated at all speeds protecting shore based structures - a feature particularly advantageous for high speed passenger or cargo ferries operating in restricted water ways.
- **LOW WIDE DECKS**—The overall profile of the vessel is reduced by lowering the decks enhancing the potential for radar and visual stealth and allowing launching and retrieval of satellite craft while underway.



Efficient propulsion at all speeds

Loitering with **displacement** lift

Cruising with **planing** lift

Sprinting with **aerodynamic** lift

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