



US Coast Guard
Response Boat - Medium (RB-M) Acquisition Project
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Notes about the RB-M

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What can the RB-M do? A worthy successor to the Coast Guard's workhorse

41' UTB	Tale of the tape	RB-M
40' 8"	Length	44' 10 1/2"
13' 5"	Beam	14' 7 3/4"
4' 1"	Draft	3' 4"
26 knots	Speed	42.5 knots
300 nautical miles at 18 knots	Range	250 nautical miles at 30 knots
100 tons	Towing	100 tons
8' seas, 30 knot winds	Weather limitations	8' seas, 30 knot winds
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Designed for action

Improved design and performance

- Deep-Vee, double chine hull balances performance and stability
- Low freeboard for embarkation and disembarkation of personnel
- Self-fendering for boarding and towing
- Side recovery wells and stern recovery deck for reaching people and objects from the water
- Overhead windows in pilothouse increase visibility
- Twin marine diesel engines with waterjets
- Joysticks for steering and speed on armrests of coxswain's seat
- Tighter turning radius
- Improved stopping and starting
- 24 VDC, 12 VDC, and 120/240 VAC electrical generating and distribution system ensures continuous power from engines while keeping batteries charged

Electronics integrates the parts

- Integrated navigation and sensing systems compliant with international radio-telephony standards
- Integrated communications system accessed from wireless crew communications equipment
- Infrared imaging capability for enhanced visibility
- Engineering monitoring and controls at the engineer position with engine room camera
- Detroit Diesel Electronic Controls (DDEC) IV for engine system diagnostics and analytics

Designed for people

Ergonomics for endurance

- Four shock mitigating crew seats
- Climate control system for consistent interior cooling and heating
- Forward sweep of the pilothouse windows prevent heat buildup from the sun and increase usable overhead space
- AC power for appliances
- Microwave oven to provide hot meals

Safety enhancements

- Self-righting
- Mission capable in eight-foot waves and 30-knot winds
- Mission survivable in 12-foot waves and 50-knot winds
- First boat in the Coast Guard to meet hearing safety standards
- Emergency stop in 12 seconds from 40 knots
- Secure seating for every crewmember

How did we get here? Strategic planning and detailed execution

Why did the 41' Utility Boat (UTB) need replacing? Worked hard and put away wet

- Material condition. 5 yrs left on engines, 10 yrs on hull
 - Already completed mid-life upgrades
 - Engines and equipment no longer supportable
 - Recurring engine problems
 - Leaky fuel system
 - Electrical wiring not up to current codes
 - Structural cracks
 - Corrosion
- Safety issues. Age evident in increased mishaps
 - Engines overheat
 - Seal failure almost flooded the boat
 - Mast failures - broken and fallen to the deck
 - Damage from loss of engine control while mooring
- Seakeeping and ruggedness
 - Limited to 10' Seas
 - Ineffective self-fendering. Must manually deploy fenders for coming alongside
- Suitability for more missions
 - Increased effectiveness in more missions
 - Enforcement of Laws and Treaties (ELT)
 - Defense Operations (DO)
 - 26 knots vs. 42.5 knots.
 - 26 knots not fast by modern standards.
 - Supporting more missions requires more speed
 - UTB hull form and structure not suitable for higher speeds, eliminating engine upgrade option
 - Limited navigation and communications capability. Need interoperability and situational awareness
- Crew Fatigue.
 - Lack of seating. 2 seats for 4 crew
 - Climate control. No interior climate control for excessively warm days

What were the options? No silver bullet

- Build/buy a new fleet
 - Options range from a COTS to custom design
 - Coast Guard has proven experience
- Leasing
 - Never been done for large fleet
 - 24/7 contractor support cost could be prohibitive
 - Contractor support in extreme weather and armed situations may not be available
 - Liability risk by taking boats into extreme weather and armed situations
- UTB service life extension. Material, capability, and safety shortcomings would increase the cost of a service life extension
- Do nothing/status quo. Would soon result in not being able to accomplish missions

What was the approach? Build a system, not just a boat

- True multi-mission platform to meet projected needs as well as current needs
- Leverage modern technology. 30 years of marine industry advances include newer hull forms, propulsion systems, fendering systems, and navigation and communications equipment
- Use a "best value" balanced approach. Align requirements against initial capital investment and long term operational expense
- Provide life cycle support. Not just parts support, but all logistics, including training, maintenance, repair and future upgrades.
 - Leads to increased operational availability
 - The boat is the easy part. Personnel at stations support boats and crews means the project must provide more than just the boat and related training. It must provide the support infrastructure to keep it operational.
- Standardize the fleet to streamline operations and reduce costs

Who are the players? Team RB-M

Government

- CG-3, USCG Asst Commandant for Operations. Sponsor and champion. Responsible for funding and operational requirements. Decides delivery locations.
- CG-9, USCG Asst Commandant for Acquisition. Provides program management oversight
- CG-4, Engineering and Logistics. Support offices consisting of:
 - CG-44, Office of Logistics. Coordinating the transformation of Coast Guard logistics to which RB-M support will be aligned
 - CG-45, Office of Naval Engineering. Provides naval engineering technical expertise

Commercial

- Marinette Marine Corp. Prime contractor. Full service shipyard in Marinette, WI
- Kvichak Marine Industries. Design agent and aluminum boat builder in Seattle, WA
- ITT Corporation. A top US defense supplier in multiple categories in New York. Supporting IT integration.
- Gradient eLearning, a division of Planning and Learning Technologies, Inc. (Pal-Tech®) in Arlington, VA. Developing the Interactive Electronic Technical Publication (IETP).
- E/worthy. IT integrator in Long Island, NY.