U.S. COASTAL SHIPWORKS
CONCEPT SHIP DESIGN

SPC-HWMLB
HEAVY WEATHER MOTOR LIFEBOAT



TECHNICAL OVERVIEW

PRINCIPAL DIMENSIONS	
Length Overall (m)	15.7
Maximum Beam (m)	4.5
Navigation Draft (m)	1.5
Displacement (t)	18.7
PROPULSION	
Service Speed (kt)	15
Maximum Speed (kt)	25
Installed Power (kW)	594
OPERATIONAL CHARACTERISTICS	
Endurance (hr)	72
Service Range (NM)	500
Fuel Capacity (L)	2000
COMPLIMENT	
Crew	6
Minimum Crew	4
Survivors	30
Absolute Total	34

U.S. Coastal Shipworks

Custom Design & Support for Coastal Vessels

DESIGN OVERVIEW

SPECIAL PURPOSE CRAFT, HEAVY WEATHER MOTOR LIFEBOAT:

The SPC-HWMLB is a concept stage vessel, designed to adapt the combined needs of the USCG 47-MLB and 52-MLB into a modern, efficient service boat.

By using the 47-MLB as a parent vessel, and comparing design decisions with a parametric analysis of similar vessels, the concept design implements modern design solutions while leaning on tested practices. These considerations, along with Bureau Veritas rules and other regulations, allow for the design of an effective vessel in line with client requirements and industry standards.

Some key features of the SPC-HWMLB concept vessel are detailed below:

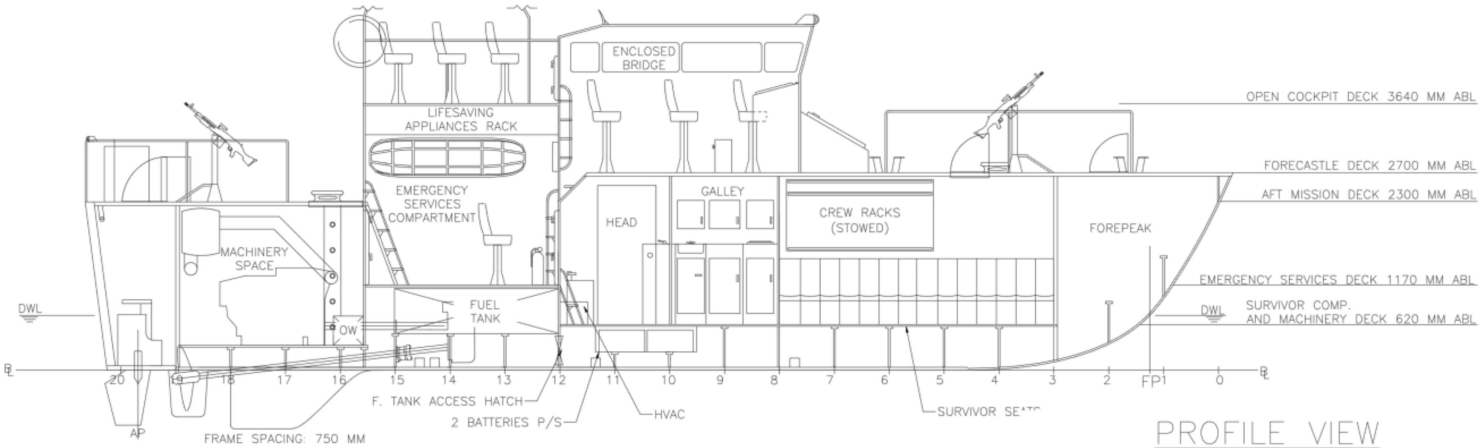
-Meets client provided zero fossil fuel requirements through the implementation of hydrotreated vegetable oil.

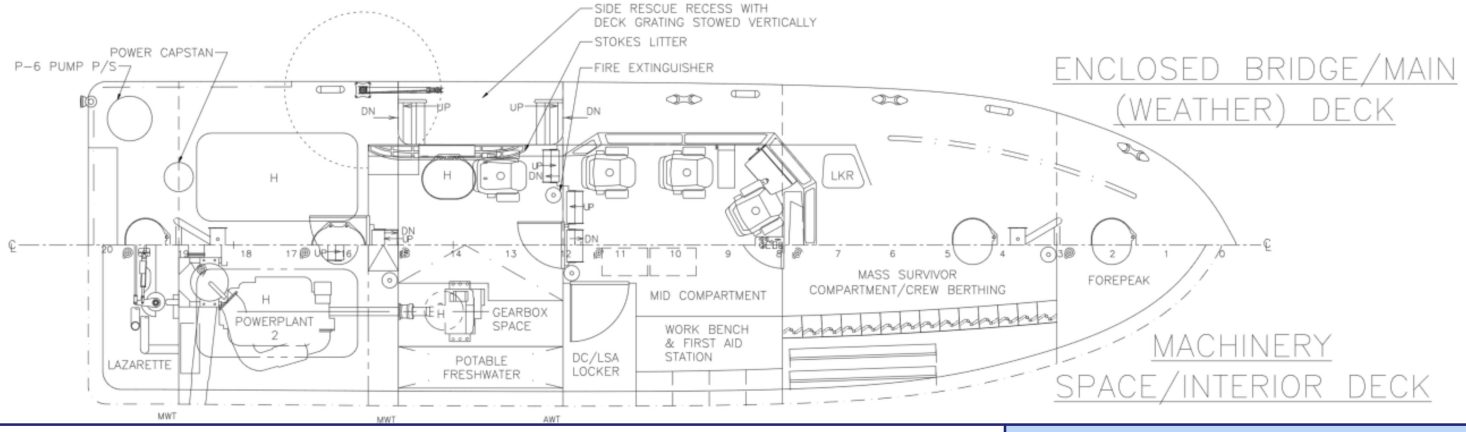
-Buoyant compartments, low VCG, and hull shape resulting in self-righting capabilities.

-Hard chine, transom stern, and flared bow yield high performance while preserving operational characteristics in rough weather.

-Expanded forward survivor compartment allows for higher survivor count.

-Increased capacity for fuel and other consumables allows for long-duration operations farther from shore.





Principal Dimensions:

-Length Overall	15.7 m
-Length at Waterline	14.5 m
-Length Between Perpendiculars	13.8 m
-Maximum Beam	4.5 m
-Design Draft	0.7 m
-Appendage Draft	1.5 m
-Total Depth	7.7 m
-Displacement	18.7 t

Transit Characteristics:

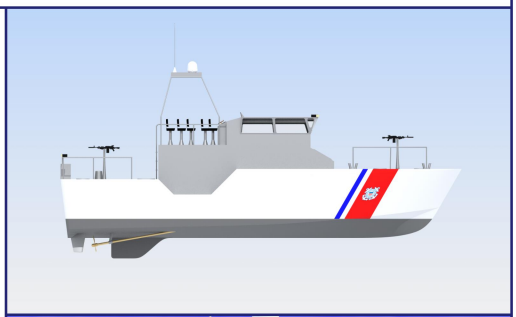
-Maximum Speed	25 kt
-Service Speed	15 kt
-Cruising Speed	8 kt
-Range at Srv. Speed	500 NM
-Endurance	72 hr
-Fuel Capacity (HVO)	2000 L

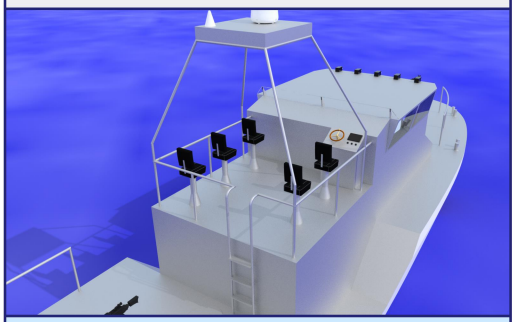
Mission Systems:

-Seating for compliment of up to 30 survivors
-1x P/S Each 2200N Davits
-Tow line with spare line & power capstain.
-1x P/S Each P-6 pumps
-First Aid Equipment
-2x M240B machine guns & small arms locker

Propulsion and Powering:

-2x 297kW Cummins QSM11M355 CON Diesel Engines (HVO Ready)
-2x Michigan Wheel Machine Pitch 3 Blade 762mm NiBrAl Propeller
-Dual V-Drive Transmission
-Engine Mounted Alternators







U.S. Coastal Shipworks

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OUR TEAM



Caleb Brockett

Adamstown, MD

CAREER GOALS:

Small Craft
Production Engineering

WORK EXPERIENCE:

Outfitting / FRP - United States Marine, Inc.
Engine Cadet - USS John L. Canley
Engineering Intern - Norton Consulting Engineers
Engineering Intern - United States Marine, Inc.



Aidan Cavanaugh

Smyrna, GA

CAREER GOALS:

Commercial Ship
Operations & Management

WORK EXPERIENCE:

Fitter - Austal USA & Brooklin Boat Yard
Deck Cadet - MTM Kobe
R&D Intern - Shipglide Inc.
Jr. Naval Architect - Shipwright LLC



Andréj Klema

Ellicott City, MD

CAREER GOALS:

U.S. Navy Nuclear Officer

WORK EXPERIENCE:

Fitter - General Dynamics Electric Boat
Navigation Consultant - U.S. Coast Guard & U.S. Navy
Jr. Naval Architect - THOR Solutions
Nuclear Engineering Tech. - Portsmouth Naval Shipyard



Allison Toohey

Lutherville, MD

CAREER GOALS:

Small Boat Design

WORK EXPERIENCE:

Outfitting / FRP - United States Marine, Inc.
Engine Cadet - M/V American Pride
Engineering Intern - Voith Turbo Marine



Harrison Weinberg

Great Neck, NY

CAREER GOALS:

Performance Boats

WORK EXPERIENCE:

Production - Brooklin Boat Yard
Engine Cadet - USS John L. Canley
Engineering Intern - Combatant Craft Division Carderock

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In addition to the design team, this vessel saw significant contribution form our volunteer industry mentors. We would like to extend a special thanks to Chris Barry, Chris Cart, Avery Fanning, Ben Fisher, Debabrata Ghosh, Andrew Moeller, Darren Monzingo, Ian Mutnick, and David Shepard for their invaluable contributions!