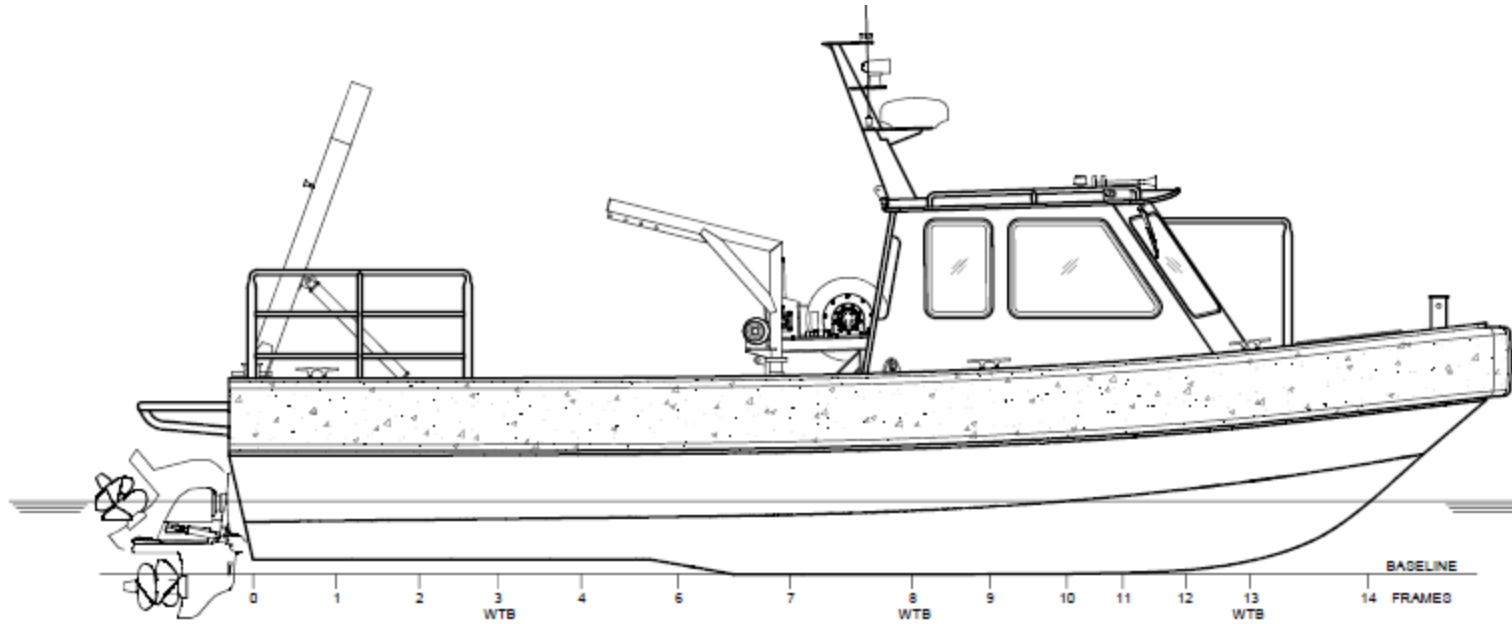
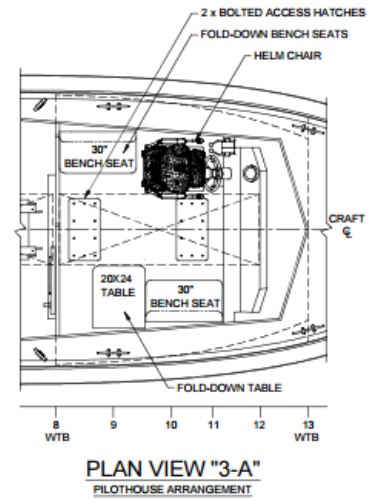
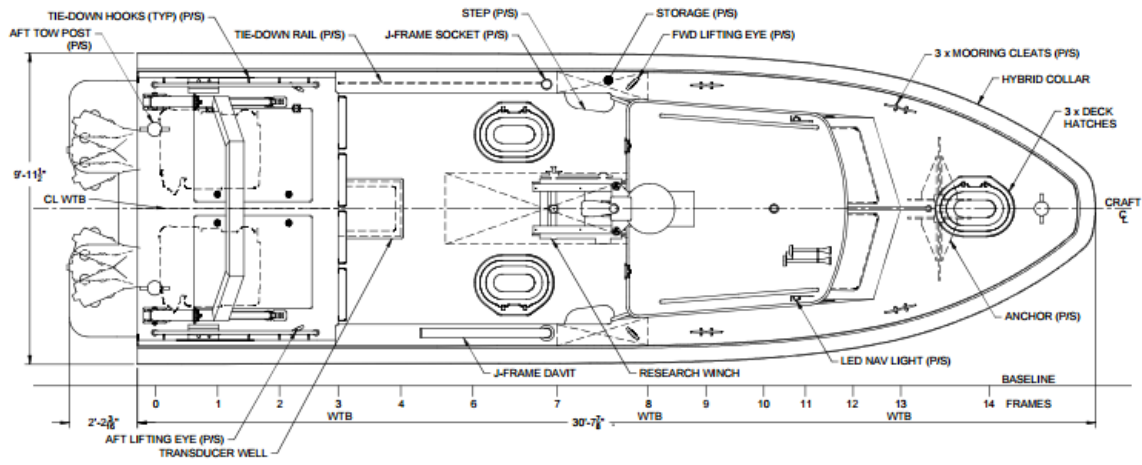
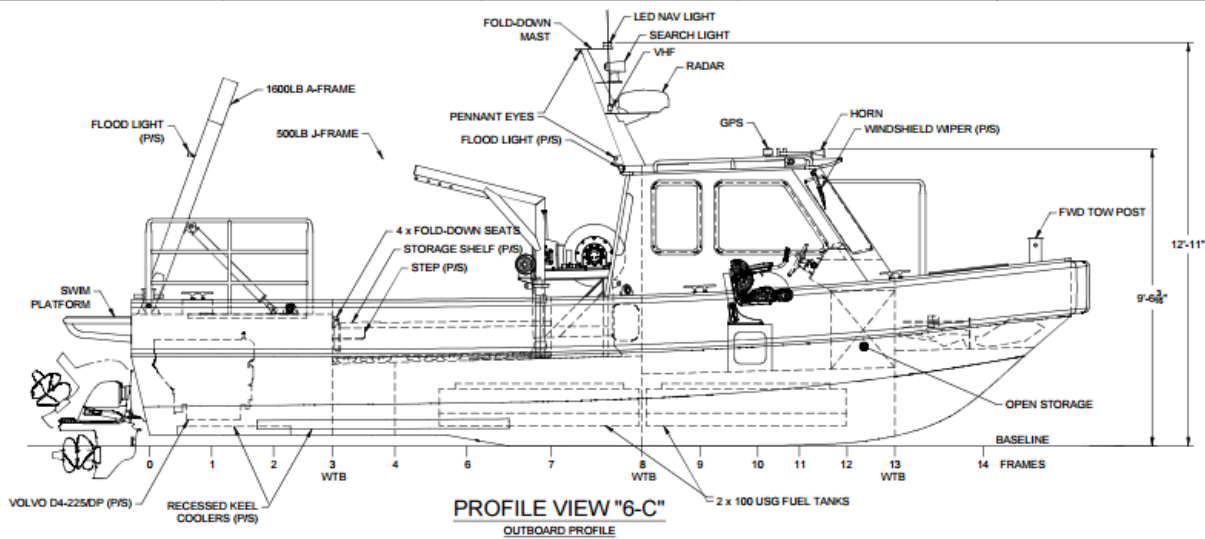


NSF RHIB



National Science Foundation
Division of Polar Programs





In 2016 the Rigid Hull Inflatable Boat (RHIB) was built for the National Science Foundation for use at Palmer Station, Antarctica. The RHIBs were purpose built by Willard Marine Inc. to increase boating safety, expand the possible boating area, and enhance scientific capabilities at Palmer Station.

Highlights include: rigid aluminum hull with the hybrid inflatable collar and integrated foam floatation; heated house for protection from elements; rated over boarding equipment with both J-frame and A-frame; dive ladders; sonar well, full navigation suite, keel coolers for all fluids, and low speed docking control.

The craft has redundant Volvo engines, electrical, and hydraulic systems for added safety and allow the vessel to operate for a full 12 hours while retaining a sufficient fuel reserve.



RHIB Principal Features and Technical Information

General

Owner	National Science Foundation
Builder	Willard Marine Inc.
Commissioned	2016
Hull	Aluminum
Collar	Hybrid Inflatable
Build Classification	ISO 12215-5:2008

Principal Dimensions

Length Overall	33.5 ft
Breadth	10 ft
Draft	2.32
Displacement	14,500 lbs
Light Ship Weight	12,490 lbs
Weight on Trailer	16,000 lbs

Propulsion

Engines	2ea Volvo Penta D4 -225/DP
Crank Horsepower	450 hp / 330kW
Prop Horsepower	430 hp / 316kW
Propellers	2 each counter rotating sets
Drive Type	Volvo Penta Stern I/O Drive
Fine Control System	Volvo Penta IPS Docking
Fuel Type	Diesel
Number Tanks	2
Total Fuel Capacity	200 Gallons

Accommodation

Crew	1
Passengers	7 (4 total inside wheelhouse)
Cargo Capacity max	1,600 lbs



RHIB Principal Features and Technical Information

Heating and Cooling

Cabin Heat	Diesel fuel heaters and window defogger
Engine Cooling	Flush mounted Keel Coolers
Hydraulic Cooling	Flush mounted Keel Coolers
Fluid Heating Systems	In-line heating for fuel, coolant and hydraulic systems

Over-the-Side Equipment

A-Frame	1600 lbs WLL
Moveable J-Frame	500 LBS WLL
Hull #1 Research Winch	InterOcean winch with 1,100m synthetic .312" Dyneema, 1000lbs pulling capacity
Hull #2 Utility Winch	300m Wire Cable
Power for Winches	Redundant Hydraulic Pumps Driven by Main Engines

Additional

Swim Step Extending Over Stern Drives	Electrical Service 120VAC and 12 volt
Antiskid floor	Back Deck Flood Lights
Tow Bollards Fore and Aft	Search Lights
Crane Lifting Points	Depth Display
Cabin Storage and Deck Storage	Integrated Navigation, AIS and Radar Display
Independent Engine Compartments and Full Redundancy	Dive Ladder for Stbd and Port side boarding

Sonar

Transducer Well	In Hull 21in x 24in window with Z-lux windows
Sonar	Simrad EK-80 Wide Band 120kHz split beam



RHIB Principal Features and Technical Information

Expected Scientific Deployments via A-Frame / J-Frame

Six Bottle CTD (SBE55 ECO Rosette) 300/1000m (USAP provided)	Deployment / Recovery of Small Fish Traps
Light Bottom Trawls	Light Benthic Grabs
Shallow Tow Body Support	Net Tows Plankton, Bongo

Operations

Expected Maximum Range from Palmer or other RHIB	20nm and 17 hours of operations
Maximum Cruising Speed	20knots +
Required Training	RHIB specific training I
Required ASC Operator	1
Survival Gear	Mustang Ocean Commander
Launch and Recovery	Via Custom Trailer

Electrical Service

2ea 15amp 120VAC circuits with outlets in wheelhouse and on deck	1ea 30 amp 12VDC circuit to wheelhouse
1ea 20amp 12VDC circuit to back deck with 4 outlets	1ea 20amp 12VDC circuit to wheelhouse with 4 outlets

Wheelhouse

Seating for four passengers	Folding worktable
Electrical outlets for laptops and deck boxes	Internal storage for scientific gear and equipment



