

# RVIB Nathaniel B. Palmer

## Principal Features and Technical Information

General		
Vessel Owner	Edison Chouest Offshore	
Builder	North American Shipbuilding, U.S.A.	
Year Commissioned	1992	
Chartered to	Raytheon Polar Services	
Classification	ABS A1, AMS, E, ACC, Ice Class A2	
Flag	U.S.A.	
Principal Dimensions		
Length Overall	308.50 ft	94.0 m
Length on Waterline	279.85 ft	85.3 m
Breadth Moulded	60 ft	18.3 m
Draft, Design	22.5 ft	6.8 m
Depth	30.0 ft	9.1 m
Displacement	6800 LT	6909 t
Light Ship Weight	4800 LT	4877 t
Main Propulsion Machinery		
Shafts		
Number of Shafts	2	
Total Shaft HorsePower	12,700 SHP	9500 kW
Transmission and shafting efficiency	0.96	
Shaftline Bearing Loss	2%	
Gearing Loss	2%	
Total Brake Horsepower (BHP)	13,200 BHP	9,900 kW
Main Engines		
Number of Engines	4	
Manufacturer   Model	Caterpillar	3608
Prime Mover	Diesel	
Rating of Engine	3300 BHP @ 900 rpm	
Transmission System	Reduction Gear	
Gear Box		
Manufacturer   Model	Lohmann & Stoltefort	GVL 1250B
Gear Ratio	6.4 to 1	
Propellers		
Number of Propellers	2	
Propeller Diameter	13.12 ft	4 m
Number of Blades	4	
Material	NiAlBr	
Direction of Rotation	Inboard turning	
Hub Diameter	4.36 ft	1.33 m
Hub to Prop Diameter Ratio	0.33	
Manufacturer	Ullstein, Norway	
Nozzles		
Inside Diameter	13.28 ft	4.05 m
Outside Diameter	16.14 ft	4.92 m
Material	Stainless Steel	
Stern Tub Bearing		
Manufacturer	Thordon	
Generators		
Number	4	
Rating of each	1400 BHP	1050 kW
Total Auxiliary Power	5600 BHP	4200 kW
Manufacturer   Model	Caterpillar	3512
Electric Power	AC=480/240/120V, 60Hz, DC=24V	
Thrusters		
Bow Thruster		
Number	1	
Type	Water Jet Azimuthing	Flush Mounted
Thrust	10.0 LT	
Rating	1400 BHP	1050 kW

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<b>Stern Thruster</b>			<b>Emergency Diesel Generator</b>		
Type	Tunnel		Number	1	
Thrust	6.0 LT		Rating	300 kW	
Prime Mover	Electric Motor		Manufacturer	Caterpillar	
<b>Rudders</b>			<b>Glycol Heating System</b>		
Number	2		Number	2	
Type	Schilling High-Lift		Rating of each	6,600,000 BTU/hr	
<b>Evaporator/Fresh Water Maker</b>			Manufacturer	Vapor Corporation	
Number	3		<b>Exterior Lighting</b>		
Manufacturer   Type	Alfa Laval	JWP-26-C80	<b>Searchlights</b>		
Rating of each (daily)	15 LT		Number	4 single	1 double
<b>Heeling System</b>			Rating	2.5 kW zenon with heather circuit	
Number of Tanks	1 Pair		Manufacturer	Carlisle and Finch	
Number of Pumps	1		<b>Tank Capacities</b>		
Total Heeling System Horsepower	1400 BHP	1050 kW	Fuel	425,000	
Manufacturer   Model	Caterpillar	3512	At 22.5 ft draft	1,550 LT	1,574 t
Induced Roll & Time Period	5° roll side to side in 2 minutes		At 95% maximum capacity	1,740 LT	1,768 t
<b>Anti-roll tanks</b>			Fresh Water at 95%	215 LT	218 t
Number	2 pair		Ballast Water at 95%	1,000 LT	1016 t
Dimensions	10 ft. (W) x 60 ft (L)		Aviation Fuel at 95%	34 LT	
Percent Roll Reduction, Sea State 6	40-50%		Heeling Tanks (16 ft level)	227 LT	
<b>Waste Disposal System</b>			Antiroll Tanks (4.5 ft level)	173 LT	
Incinerator	1		Endurance	15,000 NM @ 12 knots	
Manufacturer	Golar 500		<b>Accommodations</b>		
Holding Tanks	2-hour duration		Crew   Owner	22	5
			Scientists and Staff	39	
			Spare	2	
			Total Accommodations	68	

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<b>Special Features</b>		
Helicopter hangar and ability to carry two small helicopters and 7,200 gallons of fuel		
Low friction hull coating (Inerta 160)		
No fuel oil in double bottom		
One compartment damage stability standard		
Overboard discharge on port side only		
Uninterruptible and conditioned power in main work area and computer lab		
Two boilers to circulate water/antifreeze mixture under exterior deck on main level		
Design Air Temperature	100° to -50° F	37.8° to 45.6° C
Design Water Temperature	85° to 28° F	29.4° to -2.2° C
Drinking water made from seawater	12,000 gal/day maximum production	
<b>Other Features and Space Allocations</b>		
Aloft Observation Station (deck height)	80 ft above water surface	
Pilot House (deck height)	54 ft above water surface	
Main Science Deck aft (deck height)	9 ft above water surface	
Pilot House (interior width)	74 ft	
Overhang at vessel side	12 ft	
Helicopter Hangar	40 ft x 32 ft	1300 sq ft
Flight Deck	54 ft x 44 ft	2500 sq ft
<b>Boats</b>		
<b>Survey Boat "Cajun Cruncher"</b>		
Length	28.8 ft	8.8 m
Breadth	10.75 ft	3.3 m
Depth	7.25 ft	2.2 m
Draft (keel)	4 ft	1.2 m
Displacement	11.3 LT	11.5 t
A-frame	800 lbs	
Winch	300 m 5/16" cable	
Personnel Capacity	4 scientists	2 crew
<b>Boats (continued)</b>		
Diesel Manufacturer	GM	8V-71
Diesel Engine Horsepower	230	
Propeller Diameter	36", fixed pitch, in a nozzle	
Cooling System	Keel cooler	
<b>Lifeboats with Davits</b>		
Number	2 (1 port, 1 starboard)	
Capacity of each	76	
Features	Enclosed, powered (55 HP)	
Material	Fiberglass	
Manufacturer	Schat Watercraft	
<b>Inflatable Rafts</b>		
Number	1	
Capacity of each	20	
Manufacturer	Suitlik	
<b>Rescue Boat with Davits</b>		
Number	1	
Length	19.7 ft	
Features	100 HP outboard, 25 knots	
Manufacturer	J&V, Grimstad, Norway	
<b>Miscellaneous Vessel Facts</b>		
Over 3,000 10x40-ft steel plates & 810,000 linear feet of welding were used on the ship		
The steel plate in the bow is 1 9/16" thick and is twice the strength of regular steel		
The steel on the hull is made with a low-temperature alloy rated to -60° C		
75,000 ft (14 miles) of pipe were used to outfit the ship		
There are 2,700,000 feet, (511 miles) of wire inside the vessel		
Total electrical generating capacity is 4.63 million watts (nearly 4,000 hair dryers)		
The vessel is capable of carrying twenty, 20 ft cargo containers		