



M/V Pacific Warden

- ▶ **Bollard Pull** 136-144 tonnes
- ▶ **Brake Horsepower** 10,657 BHP
- ▶ **Clear Deck Space** 471 m²
- ▶ **Winch Line Pull** 300 tonnes

M/V Pacific Warden

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Clear Deck Space	471 m ²	Winch Line Pull	300 tonnes

General Information

Built:	Brevik Construction A/S Norway, December 2002
Flag:	Singapore
Call Sign:	9VKQ5
IMO No.:	9250036
Classification:	DNV +1A1 Tug Fire Fighter I SF E0 DYNPOS-AUTR DK(+) HL(2.5)

Dimensions

Length, overall:	68.9 metres
Length, BP:	60.4 metres
Breadth, moulded:	15.5 metres
Depth, main deck:	7.0 metres
Design draft:	5.0 metres
Maximum draft midship:	6.0 metres
GT:	2,327
NT:	751

Capacities

Deadweight (maximum):	2355 tonnes
Clear Deck Area:	36.8 m x 12.8 m = 471 m ²
Deck Strength:	General deck - 5 tonnes/m ² Aft A/H deck - 10 tonnes/m ²
Deck Cargo:	800 tonnes
Fuel:	780 m ³
Potable Water:	400 m ³
Ballast Water:	930 m ³
Brine / DMA / Glycol / Liquid Mud:	312 m ³ (s.g. 2.5) (3 tanks - separate from mud tanks) (in addition, 146 m ³ in dual use Liquid Mud tanks)
Liquid Mud:	440 m ³ (s.g. 2.5) (6 tanks)
Dry Bulk:	224 m ³ (4 tanks)
Ship's Stores:	Cooler: 8.6 m ³ Freezer: 6.4 m ³ Dry Stores: 10.5 m ³ approximately

Machinery

Main Engines:	2 x 3,975 kW = 7,950 kW (10,657 BHP)
Propulsion:	2 x CPP propellers in Kort nozzles 2 x Ulstein high lift independent rudders 2 x Electro-hydraulic steering gear
Bow Thrusters:	2 x 590 kW (2 x 791 BHP), 9.25 tonnes thrust each
Stern Thrusters:	2 x 590 kW (2 x 791 BHP), 9.25 tonnes thrust
Shaft Generators:	2 x shaft generators 1200 kW (1600 kVA), 450 V, 60 Hz
Auxiliary Generators:	2 x diesel/gen output 320 kW (400 kVA), 450 V, 60 Hz
Emergency Generators:	1 x diesel/gen output 65 kW (80 kVA), 450 V, 60 Hz

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Towing and Anchor Handling

Bollard Pull:	139 tonnes, continuous
Main Winch:	1 x Brattvaag SL300W/2BSL300W low pressure, triple drum, 300 tonnes
Load Capacity:	Towing A/H drum 1st layer 300 tonnes pull at 0 - 7.0 m/min. (based on 1st step) 172 tonnes pull at 0 - 12.0 m/min. 122 tonnes pull at 0 - 17.0 m/min. Lowering at 0 - 38.0 m/min.
Brake Capacity:	450 tonnes on towing drum 1st layer 450 tonnes on A/H drum 1st layer
Tow Drum Wire Capacity:	1500 m x 76 mm diameter
Work Drum Capacity:	2 x 1200 m x 76 mm diameter
Chain Gypsy Cable Lifter:	2 x cable lifters for 3 1/4" inch rig chain
Rig Chain Locker:	187.7 cubic metres chain capacity
Stern Roller:	SWL 450 tonnes Length 5 m x 2.5 m diameter
Tow Pins / Guide Pins:	2 pairs x retractable Karmoy guide pins with horizontal locking tops
Wire Chain Stopper:	2 x retractable Karm Fork, SWL 450 tonnes
Spare Reel Capacity:	2 x hydraulic Brattvaag 1500 m x 76 mm capacity
Wire Storage Reel:	1 x hydraulic Brattvaag 1500 m x 76 mm capacity

Deck Machinery

Tuggers:	2 x 10 tonnes Brattvaag
Capstans:	2 x 10 tonnes Brattvaag
Windlass:	9.5 tonne pull Brattvaag, 2650 kg high holding anchors 440 m x 38 mm chain each side, plus 1 spare anchor
Bow Mooring:	2 x mooring drums capacity 120 m x 40 mm synthetic rope
Smit Towing Bracket:	1 x 200 tonnes SWL located on fo'csle
Crane Capacity:	5 tonnes at 13 m radius

Electronics

Main Radar:	1 x Furuno colour S-band (10 cm), ARPA 28 ins display, complete with remote display at aft console
Auxiliary Radar:	1 x Furuno colour X-band (3 cm), 21 ins display
Auto Pilot:	1 x Tokimec
Gyro Compass:	1 x Tokimec 6000 with repeaters, 2 x Tokyo Keiki TG-8000
Magnetic Compass:	Tokimec SH165A1
Echo Sounder:	Atlas 9205
DGPS :	2 x Veripos LD5 + Furuno GPS 80
Anemometer :	1 x Aandrea 2740+3590 / 1 x Gill Ultrasonic WindObserver II

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Speed Log:	Ben Anthea
Direction Finder :	Taiyo Musen
Communications:	G.M.D.S.S. (Global Maritime Distress and Safety System) Area A3 1 x SSB 2 x VHF 2 x Inmarsat C 3 x VHF (portable) 2 x SART 1 x EPIRB 1 x Navtex
Watch System:	2187.5 kHz and DSC Sailor
Navtex Receiver:	JRC
Weather Fax:	Furuno
Satellite Communication:	FBB: Sailor 500 VSAT: Sailor 900
AIS:	Furuno
VRU:	TSS DMS-10 / TSS RP-30 / CMS RP-25
BNWAS:	Martek Marine

Discharge Pumps

Fuel Oil:	1 x 150 m ³ /hr - 9.0 bar
Dirty Oil:	1 x 10 m ³ /hr - 2.0 bar
Potable Water:	1 x 150 m ³ /hr - 9.0 bar
Drill Water:	1 x 200 m ³ /hr - 9.0 bar
Liquid Mud:	1 x 75 m ³ /hr - 18.0 bar (2 speed)
Brine / Mud:	1 x 75 m ³ /hr - 18.0 bar (2 speed)
Dry Bulk:	80 m ³ /hr - 5.6 bar, 80 psi, 2 compressors
Cargo Flow Meters :	Fuel Oil and Fresh Water
Hose Connections :	Fuel - 5 inches (Avery - Hardol) Potable Water - 5 inches (Camlock) Drill Water - 5 inches (Camlock) Mud - 5 inches (Camlock) Bulk - 5 inches (Camlock) Adapters 5"-4" and 6"-5"

Performance

Speed / Fuel Consumption:	Max. speed 15.5 kts @ 5m draft, approximate consumption 36 cubic metres/day Economical speed 10-12 kts, approximate consumption 14 cubic metres/day Idle at sea: approximate consumption 5 cubic metres/day Idle in port: approximate consumption 0.8 cubic metres/day
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Dynamic Positioning

Type:	GE Duplex Dynamic Positioning System, C-Series
Reference Systems:	2 x Veripos LD5 DGPS / Fanbeam 5

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Control Modes: Joystick Manual Heading / Joystick Auto Heading / Dynamic Positioning / Model Control (Dead Reckoning) / Simulation (for training purposes) / DP Minimum Power / Auto Track / Auto Pilot Mode / Mixed Axis Mode / Ship Follow (CyScan) / ROV Follow (Requires Acoustic)

Joystick: Poscon - electronic control system joystick, integrated to main propellers, main engines, rudders, side-thrusters and interfaced to gyro compass

External Fire Fighting

Capacity: 2 x 1,500 m³/hr = 3,000 m³/hr

Monitors: 2 x 1,200 m³/hr monitors on wheelhouse roof, remotely controlled from within wheelhouse

Throw Length: 120 m

Throw Height: 50 m

Drenching System: Installed

Foam Tank : 8 m³

Standby Rescue Equipment

1. MOB-boat with self-righting inboard diesel engine with water jet propulsion, 25 knots (light load) with boat davit for quick launch and recovery
2. Rescue Zones on both Port and Starboard side, main deck, with scrambling net and personnel transfer swing ropes

Anti-Pollution

Dispersant Tank: 5 m³

Spray Booms: 2 x 6 m

Accommodation

Berths: 10 x 1 berths
 4 x 2 berths (including hospital)
 3 x 4 berths
 30 berths Total
 1 x ship's office
 1 x messroom
 1 x galley

All living space fully airconditioned, design 45 deg C outside, 23 deg C inside
 All living space fully heated, design -5C outside, 22C inside

Environmental Features

1. Cylindrical mud tank free flowing design with external stiffening, sloped floors and fixed agitators
2. Fixed Butterworth type mud tank cleaning system with hot water wash, fitted to all mud tanks and with slop tank reception. Cargo load/discharge station with save all to inboard tank
3. Low residue design bulk tanks

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4. 1 x 15 ppm oily water separator
5. 1 x sewage plant, extended aeration type
6. Remote digital fuel economy computer readout in wheel house, of main engine fuel consumption / vessel speed
7. Garbage compactor and mascerator

Miscellaneous

1. Design complies to latest rules and regulations from SOLAS 74, with amendments in force and IMO 469 (XII) "Guidelines for the design and construction of offshore supply vessel"
2. Fitted with Poscon electronic control system joystick, integrated to main propellers, main engines, rudders, side-thrusters and interfaced to gyro compass
3. All cargo systems are controlled by a Tanktender system with discharge printer for FO and FW/DW
4. Fitted with 5 remote cameras in winch-house for anchor-handling/towing operations with 2 TV monitors in wheelhouse
5. Fitted with 2 Halogen searchlights, each 2,000 W, wheelhouse top and electrically operated from inside wheelhouse, 4 x 1,000 W flood-lights, for cargo deck
6. Deck Power supplies:
 - 1 x 1000A x 440V x 3ph
 - 1 x 63A x 440V x 3ph
 - 1 x 32A x 220V x 1ph
7. Wood sheathed main deck except for aft area, which is steel plated for anchor-handling
8. Welding and cutting equipment and lathe in workshop
9. Fresh water ultra violet steriliser
10. Ulstein passive roll damping system
11. Fire detection system fitted to the accommodation, engine room emergency generator space and all other spaces
12. CO2 fire extinguishing system fitted in the engine room / paint locker / hydraulic pump room / emergency generator room