

TOR BOREAS- Hybrid Utility Vessel



Vessel



The Tor Boreas is a newbuild state of the art multi-purpose workboat. Equipped with MAN D2676 340ekW generators driving two VEM 500kW permanent magnet motors connected to Schottel SRP 210 azimuthing fixed-pitch propellers. This configuration delivers a speed of 11 knots and a bollard pull of 17 tonnes.

A diesel-electric powertrain was selected to ensure optimal efficiency, while an IMO Tier III exhaust system guarantees reduced emissions during operation compared to a conventional diesel-driven vessel.

Classification Society

Class Notation

Bureau Veritas (BV)

BV I ⚓ HULL • MACH, Wind Farm Service Ship – M2 Tug
standardized bollard pull 15 tons Unrestricted Navigation, • AUT-
UMS, • DYNAPOS AM/AT

Speed

11Knots

Length Over All (LOA)

26.95m

Breadth

11.00m

Depth

4.35m

Draught (Max.)

2.90m

Gross Tonnage

397

Bollard Pull

17t static 15.73 t cont.

Accommodation

6 crew and 12 Passengers

2x1man and 8x2man

Galley, Mess and Lounge

Survey/ Dive Control Room

Embarkation Lobby

CLIENT SPACES

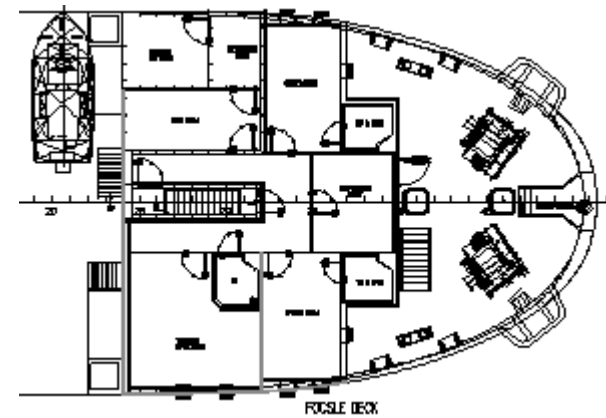
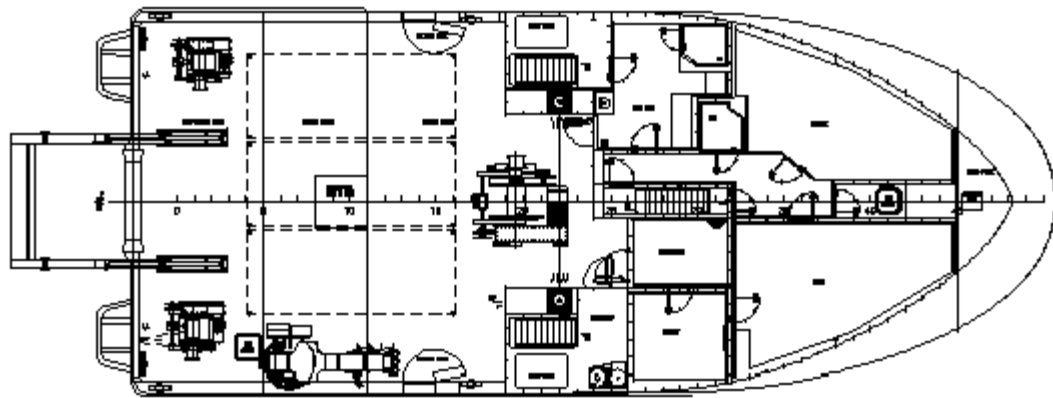
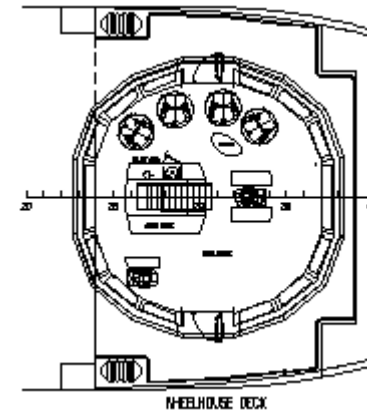
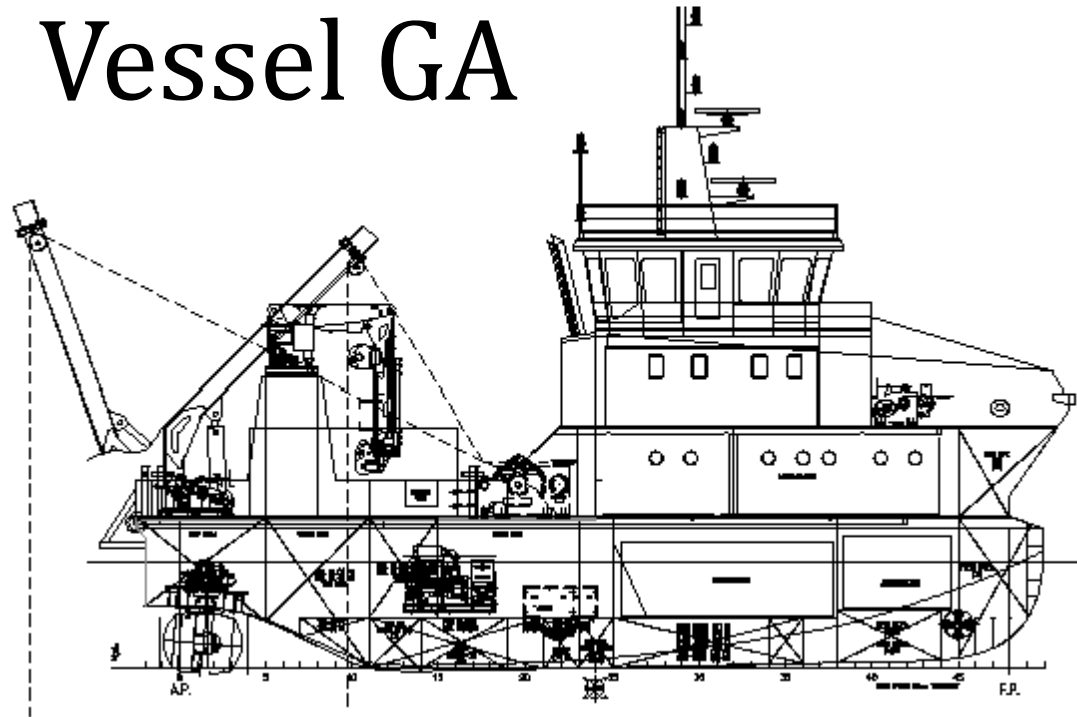
DECK EQUIPMENT



The Tor Boreas is a safe and stable platform for a wide range of operations- Survey, ROV Support, Towing, Diving, UXO clearance, Boulder Removal, LIDAR Buoy deployment,. Vessel can hold station with DP or 4-Point mooring and has anti-roll Gyro Stabilisation providing a very stable platform.

DECK MACHINERY	
Anchor & Chain	2 x 825 kg Delta Flipper Anchor (Fore) 2 x 750 kg Delta Flipper Anchor (Aft) 4 x 600m Ø20mm wire rope
4-Point Mooring Winches	Electric driven, deck and bridge controlled. Single Drum, storage capacity 600m for 20mm dia wire rope. Band brake holding load 25 tons. Duty on drum 1st layer nominal pull 4-8 tons @ 7.5-12 m/min. Length Tension Monitoring System. Length, speed monitoring system.
Aft Towing Winch	Electric driven, deck and bridge controlled. Single Drum, storage capacity 600m for 34mm dia steel wire. Duty on drum 1st layer nominal pull 25 tons @ 10m/min, 8 tons @ 20m/min. Length Tension Monitoring System. Tension, length, speed monitoring system.
Offshore Crane	Hydraulic driven, locally and remote controlled. Maximum Outreach 12.7m Lifting capacity SWL @ Sea State 3 13,000 kg @ 4.0 m (7,220 kg) 8,400 kg @ 7.2 m (4,620 kg) 6,500 kg @ 9.0 m (3,830 kg) 5,300 kg @ 10.9 m (3,190 kg) 2,400 kg @ 12.7 m (2,690 kg)
A-Frame	Hydraulic Driven, SWL @ Sea State 3 Onboard 1,000 kg @ 4 m Outboard 5,000 kg @ 3 m
Stern Roller	1 x 30 tons SWL 3000mm x Ø 500 mm

Vessel GA

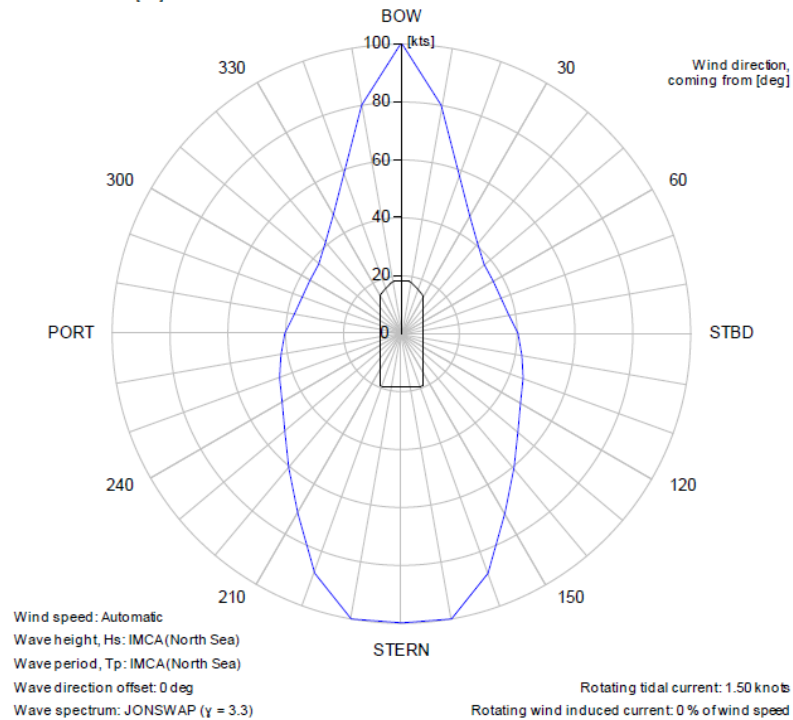


DP Performance [All Thrusters]

5.1 Case 1 - All intact

VARIABLE WIND AND WAVES
Limiting 1 minute wind speed,
at 10 m above sea [kts]

Thrusters active: T1-T3
Rudders active: None



Available thrust					Power configuration		
Thr. ID	Max. rel. thrust [%]	Max. forward thrust [tf]	Max. reversed thrust [tf]	Max. power [kW]	Bus name	Connected thrusters	Available power [kW]
T1	100	1.5	-1.5	100.0	SWBD Port + Center + Stbd	T1, T2, T3	1080
T2	100	8.8	-5.4	500.0			
T3	100	8.8	-5.4	500.0			

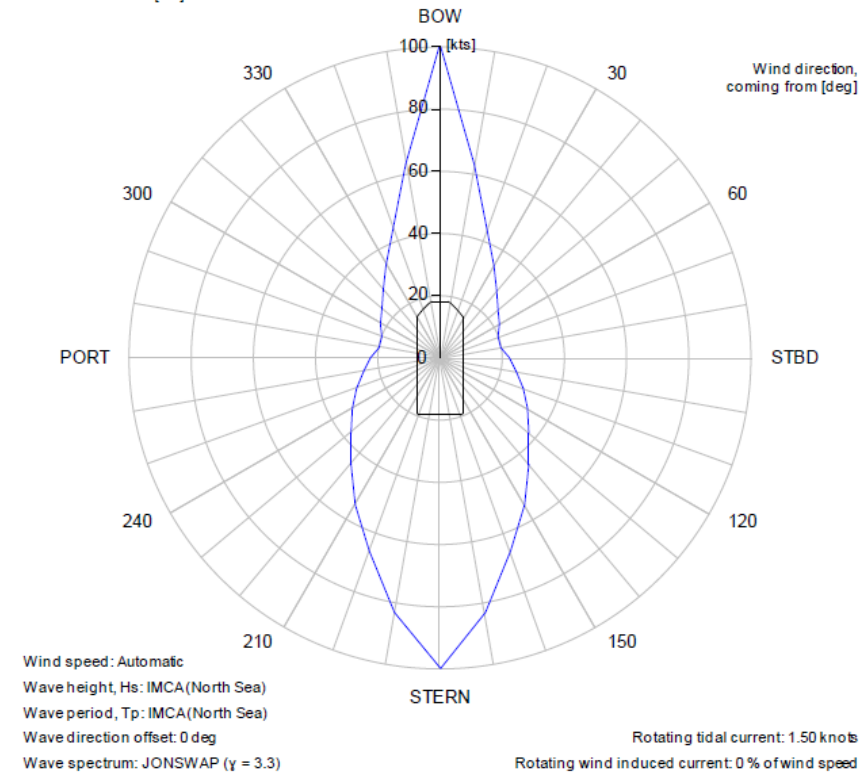
Figure 11: DP capability envelope for case 1.

5.2 Case 2 - T1 loss

BUREAU VERITAS
Stamped document, refer to 1st page

VARIABLE WIND AND WAVES
Limiting 1 minute wind speed,
at 10 m above sea [kts]

Thrusters active: T2-T3
Rudders active: None



Available thrust					Power configuration		
Thr. ID	Max. rel. thrust [%]	Max. forward thrust [tf]	Max. reversed thrust [tf]	Max. power [kW]	Bus name	Connected thrusters	Available power [kW]
T1	100	1.5	-1.5	100.0	SWBD Port + Center + Stbd	T1, T2, T3	1080
T2	100	8.8	-5.4	500.0			
T3	100	8.8	-5.4	500.0			

Market opportunities

- Wind farm support
- ROV support
- Rock bags and mats
- UXO and bolder clearance
- Survey
- Grouting
- Small Cable Installation
- Trenching

Inyanga Maritime are able to provide added-value support:

- Seafastening
- Marine Operations Supervision,
- Survey- Multibeam, Side Scan, SBP
- ROV Support

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