Topaz Commander

84 M - 9600 BHP - DP 2 - MPSV

Vessel Specifications

Vessel Specifications

Registration

Year built / Builder	1999, Ulstein Industrier AS, Norway (Myklebust Mekaniske Verksted as per COR)
Flag	Marshall Islands
Class	ABS A1, AMS, ACCU, DPS-2
IMO no / Call sign	9194294 / V7OD9

Dimensions

Length overall	84 m (94.3 m with helideck)
Breadth	18.8 m (23.8 m with helideck)
Depth 1st deck	7.6 m
Draft scantling	6.3 m (maximum)
Deadweight	4268 t
Registered tonnage	GRT 3465 t / NRT 1464 t

Machinery

Main engines	2 x Ulstein Bergen BRM8
Horse power	2 x 4800 BHP @ 750 rpm, total - 9600 BHP
Propellers	2 x CPP of 3500 mm diametre
Auxiliary / generators	3 x 590 kW (Caterpillar) 440 V, 60 Hz, 3 Ph
Emergency generators	1 x 105 kW (Caterpillar) 440 V, 50 Hz, 3 Ph
Shaft generators	2 x 2400 KVA, (Marelli) 440 V, 60 Hz, 3 Ph
Bow thruster	1 x 883 kW (CPP) tunnel thruster forward 1 x 883 kW azimuth thruster forward, Make: Ulstein
Stern thruster	2 x 663 kW (CPP) tunnel thruster aft, Make: Ulstein
Sewage treatment plant	Make: Red Fox, for 3785 l per day
Oily water separator	Make: WWS, capacity 1 m^3 per hr
Fresh water maker	Make: Aquamar AQE20, capacity – 15 m^3 per day
Waste disposal sytem	1 x incinerator – solid waste 40 kg per hr, liquid waste 55 l per hr

DP Equipment	DP Class-II, Kongsberg SDP 21
Reference system	1) HIPAP - Kongsberg HiPaP 500 2) MDL Mk4.1 fan beam laser 2 x sets of Prism up to 1000 m 6 x reflectors up to 200 m – 250 m 3) 2 x DGPS system: 1 x Fugro Seastar 9200-G2 OCSAT, 1 x Fugro Seastar 9200-G2 APSAT 4) Taut wire system - Bandak Mk12B-500, working range 300 m 5) Transponders - 2 x MST 319 Transponders WD 1000 m, 90 Deg Beam width plus or minus 1 x SPT 319 Transponders WD 1000 m, 90 Deg Beam width plus or minus 6) 3 x Motion reference system - Kongsberg 1 x MRU 5 and 2 x MRU2
Fully integrated joystick control system	Ulstein Poscon

Capacities 100%

Fuel oil	1125 m^3
Fresh water	1104 m^3
Ballast / drill water	1073 m^3
Dry bulk	400 m^3
Liquid mud	504 m^3
Brine	479 m^3
Methanol	168 m^3
Scavenger	86 m^3
Ballast tanks	1379 m^3
Dry provision	30 m^3
Cargo deck area	900 m^2
Deck cargo capacity	1800 t, 10 t per m^2 aft to fr 26 and 5 t per m^2 from fr 26 to fwd
Refrigerator / freezer	10 m^2 / 10 m^2

Vessel Specifications

Transfer rates

Fuel	1 x 250 m³ per hr @ 85 m head
Fresh water	1 x 250 m³ per hr @ 85 m head
Ballast / drill water	1 x 250 m³ per hr @ 85 m head
Bulk	250 m³ per hr @ 5.6 bar
Liquid mud	2 x 75 m³ per h @ 24 bar
Brine	2 x 76 m³ per h @ 18 bar
Scavenger	1 x 60 m³ per h @ 85 m head
Methanol	2 x 80 m³ per h @ 85 m head
Fuel meter	Satam Veeder Root

Offshore / subsea crane

Model	Knuckle Boom Active Heave Compensation Crane / Make: National Oilwell Varco OC3426KSCE-(30-100)-(25-10), (15.5) (10-26) AHC Focus on hoisting speed / capacities for clients requirements
Maximum water depth	Designed for upto 2,000 m water depth – 50 mm galvanised non-rotating wire
Anti-heeling system	2 tanks x 84 m³ each with one dedicated pump
Personnel Lift	1 t SWL
Lifting capacity (Dyn factor 1.3)	25 m outreach single line: 35 t 15 m outreach single line: 50 t 10 m outreach doubleline: 100 t
Active heave compensation lift (Dyn factor 1.3)	Hook load 43.5 m at top layer Hook load 31.3 m at 2000 m
Hoisting speed	Single line 0-36 m: 0-50 m per min Single line 36-50 m: 0-27 m per min Minimum working radius: approximately 7 m

Deck machinery and equipment

Deck crane	1 x 5 t @ 12 m Zollehn Getriebe, Germany
Anchors	2 x 2850 kg stockless anchors, SPEK type
Anchor chain	2 x 42 mm diameter x 225 m, K3 grade
Tugger winch	2 x Ulstein Brattvaag WM4110 10T pull
Anchor windlass / mooring drums	Electrohydraulic Ulstein Brattvaag BFMG6300
Capstans	Aft - 2 x Ulstein Brattvaag CM4110 10 tonne pull

Helideck	Aluminium, Class B+, D value 20.9, SWL 12.8 t as per Cap-437 Helideck monitoring system – SecRec HMS Gyro motion sensor: SMC IMU 108

Performance

Economical speed	10 knots
Service speed	13 knots
Fuel consumption	Approximately 1 m³ per day @ port Approximately 14 m³ per day @ DP operations (weather dependent)

Communication equipment

GMDSS station	Area 3 - Furuno
SAT B	Furuno Felcom 81B
SSB	Furuno FS 5000
VHF	2 x Furuno FM 8700
VHF	Furuno FM 8000, Furuno FM 7000, Sailor RT2048
Inmarsat - C	Furuno Felcom 12, Furuno Felcom 15
EPIRB	TRON 40S MK II
SART	2 x Jotron Tron SART
GMDSS radio	2 x Navico Axis 150, 1 x Simrad Axis 250
VSAT system	Caprock with 4 telephone lines - Aberdeen numbers with dedicated client email, bandwidth - 1 MB
Aeronautical VHF	Jotron TR6101
HLO radio	Dittel FSG5
Radio beacon	Skanti TU8250B

Vessel Specifications

Navigation equipment

Magnetic compass	Bergen Nautik 390 T
Gyro compass	1 x Anschutz Standard 20, 2 x Anschutz Standard 22
Auto pilot	Anschutz Pilotstar D
Radars	Furuno FR 2130 S, Furuno FR 2115
Electronic charts	Simrad SPS
Echosounder	Skipper GDP101
Navtex receiver	Furuno NX500
GPS	Furuno GP80
Weather fax	Furuno Fax 208 Mk 2
Doppler log	Skipper EML 224
Anemometer	Deif Malling 879.3C
Fire alarm panel	Scania Servotknik BMS 904 EK416
AIS	Furuno FA100

Safety & firefighting

Life rafts	6 x 25 persons and 2 x 20 persons
Rescue / workboat	MP-800 Springer
Fire extinguisher	Dry powder, foam and CO_2C - make: Thorn and Se Speck
FIFI pump	60 m^3 per hr at 60 m head
Emergency fire pump	30 m^3 per hr at 60 m head
Fixed CO^2	Unitor
Dispersant system – spray booms	31.5 m^3
Foam / detergent tank	34.2 m^3
S-VDR	Consilium

Accommodation (76 berths)

	4 x 1 berth cabins = 4 berths
	2 x 2 berth cabins = 4 berths
	23 x 4 berth cabins = 92 berths
Hospital	1 berth
Total	100 berths

All cabins fully air conditioned and ensuite

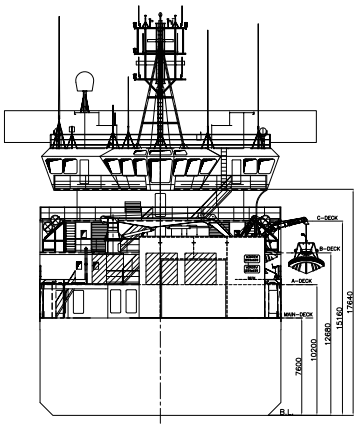
Facilities include: 1 client office with Internet and 4 v-sat telephone lines, laundry, non-smokers TV room & gymnasium

Tank Capacities

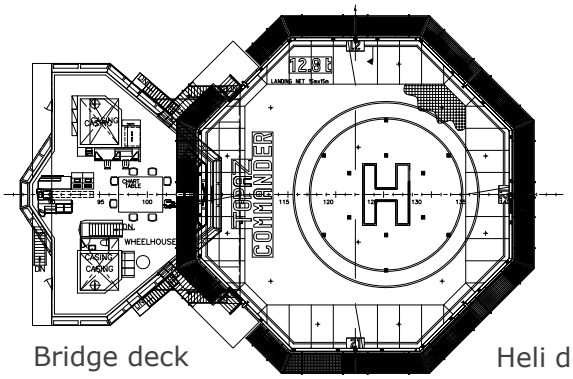
	SG M3	Fuel oil 0,850	Pot water 1,000	Drill water 1,000	Ballast water 1,025	Liquid mud 2,500	Brine M3 2,500	Base oil 0,830	Methanol 1,120	Dry bulk 2,400	Oil recovery 1,000
Forepeak	123.60			123.60	126.69						
Domestic TK Centre	38.30		38.30								
DB/WING TK 1P	142.00		142.00								
DB/WING TK 1S	141.70		141.70								
DB/WING TK 2P	126.00		126.00								
DB/WING TK 2S	125.80		125.80								
DB/WING TK 3P	182.40	155.04									
DB/WING TK 3S	126.00	107.10									
DB TK 4P	95.00	80.75									
DB TK 4S	95.00	80.75									
DB/WING TK 5P	122.00	103.70									
DB/WING TK 5S	119.70	101.75									
DB/WING TK 7P	107.50	91.38									
DB/WING TK 7S	107.50	91.38									
FO DAY TK P	36.50	31.03									
FO DAY TK S	36.50	31.03									
WING TK 4P	116.60							99.11			
WING TK 4S	116.60							99.11			
TK 6P	58.40				59.86		146.00				
TK 6S	58.40				59.86		146.00				
WING TK 8P	94.80				97.17		237.00				
WING TK 8S	94.80				97.17		237.00				
WING TK 9P	29.80	25.33									29.80
WING TK 9S	30.70	26.10									30.70
AFT PEAK P	260.40		260.40								
AFT PEAK S	269.80		269.80								
METHANOL P	83.80								66.29		
METHANOL S	83.80								66.29		
STAB TANK 1	240.60			240.60	246.62						240.60
STAB TANK 2	394.00			394.00	403.85						394.00
STAB TANK 3	314.60			314.60	322.47						314.60
FO SETTLING TK	36.60	31.11									
ANTI HEELING TK 1P	84.00										
ANTI HEELING TK 1S	84.00										
MUD TANK 2P	84.00					235.20					
MUD TANK 2S	84.00					235.20					
MUD TANK 3P	84.00					235.20					
MUD TANK 3S	84.00					235.20					
MUD TANK 4P	84.00					235.20	210.00				
MUD TANK 4S	84.00					235.20	210.00				
CEMENT TANK 1P	50.00									90.00	
CEMENT TANK 1S	50.00									90.00	
CEMENT TANK 2P	50.00									90.00	
CEMENT TANK 2S	50.00									90.00	
CEMENT TANK 3P	50.00									90.00	
CEMENT TANK 3S	50.00									90.00	
CEMENT TANK 4P	50.00									90.00	
CEMENT TANK 4S	50.00									90.00	
Weight in tonnes		956	1104	1073	1414	1411	1186	198	133	720	1010
Volume in m^3		1125	1104	1073	1379	504	474	233	168	400	1010

All figures shown are based on tank volume at 100% filling.
Some multi-usage tanks could be in use for stability purposes and unavailable for loading liquid cargo.
All tanks cannot be filled up to the maximum capacities at the same time, as loading would depend on the deck cargo and stability of the vessel.

GA Specifications

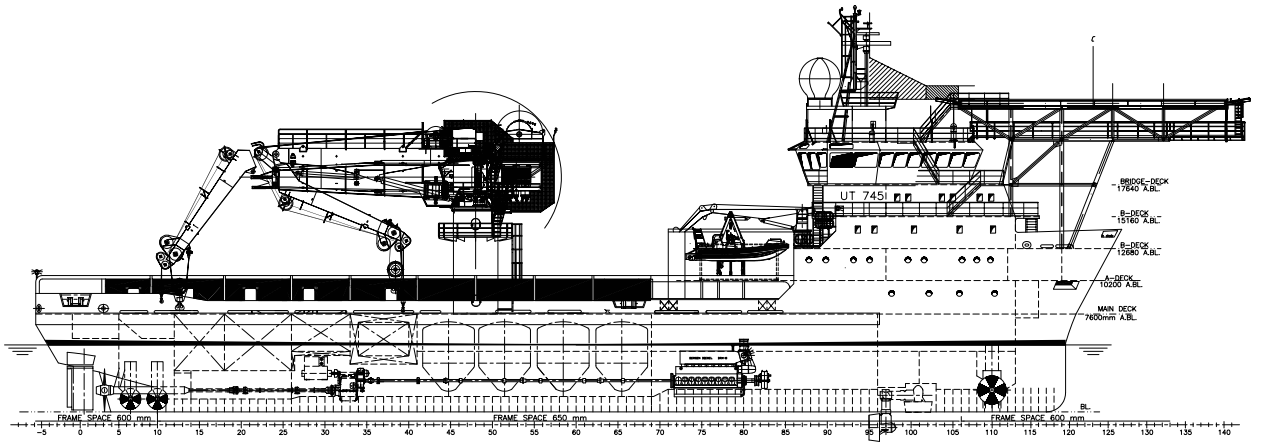


Stern elevation

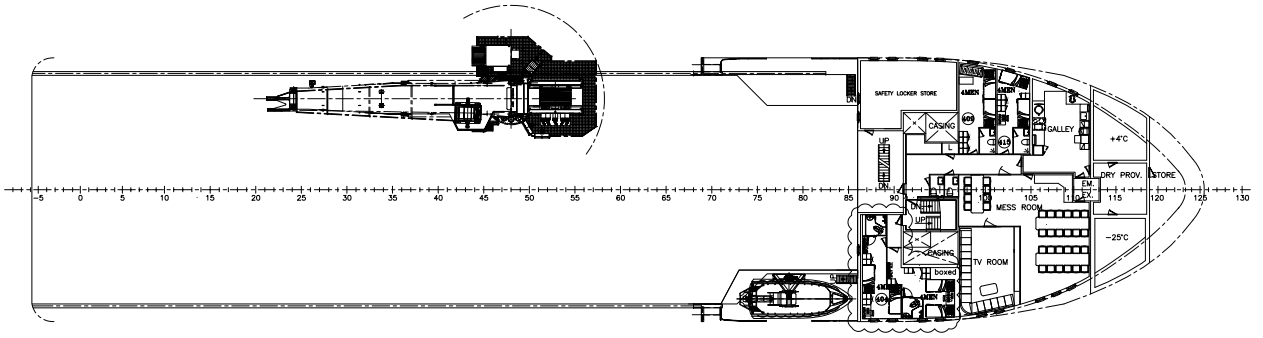


Bridge deck

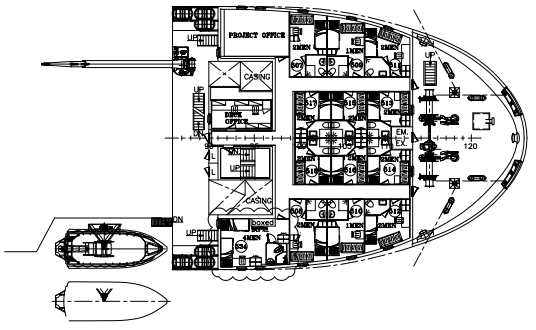
Heli deck



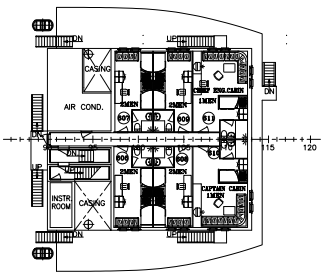
Outboard profile



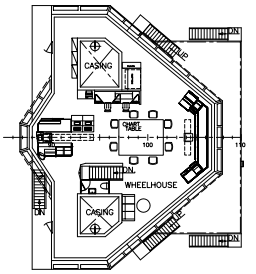
A deck



B deck

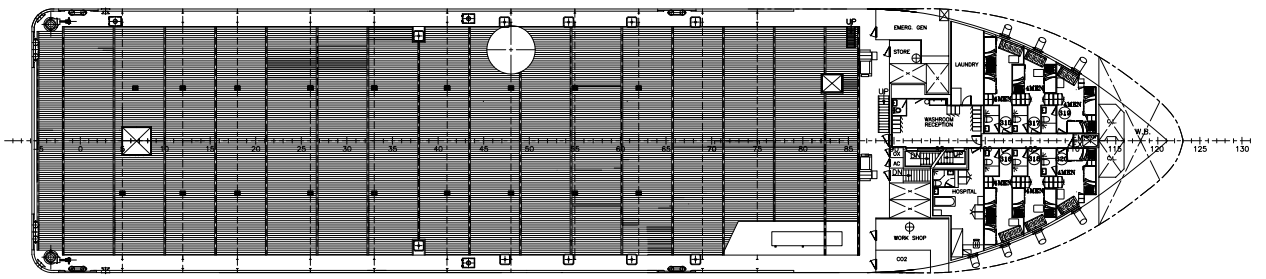


C deck

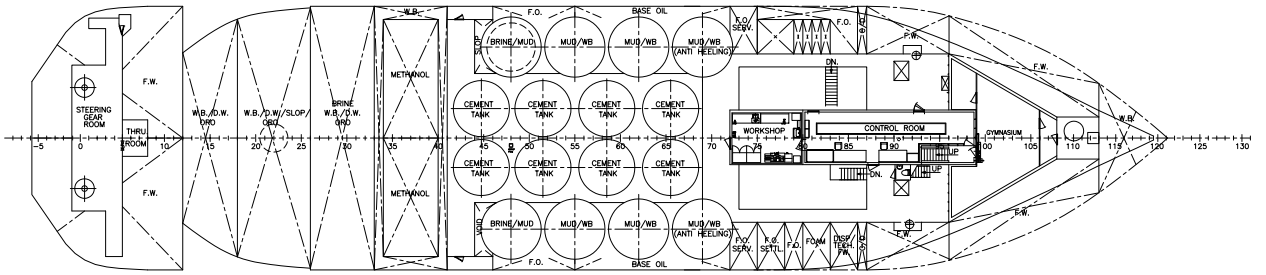


Bridge deck

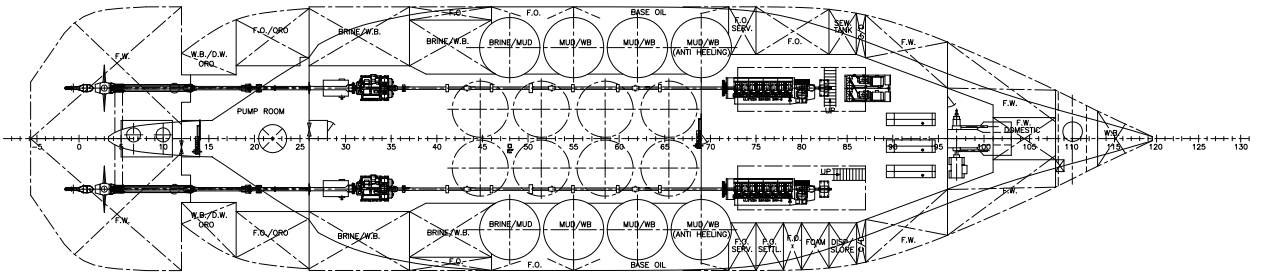
GA Specifications



Main deck



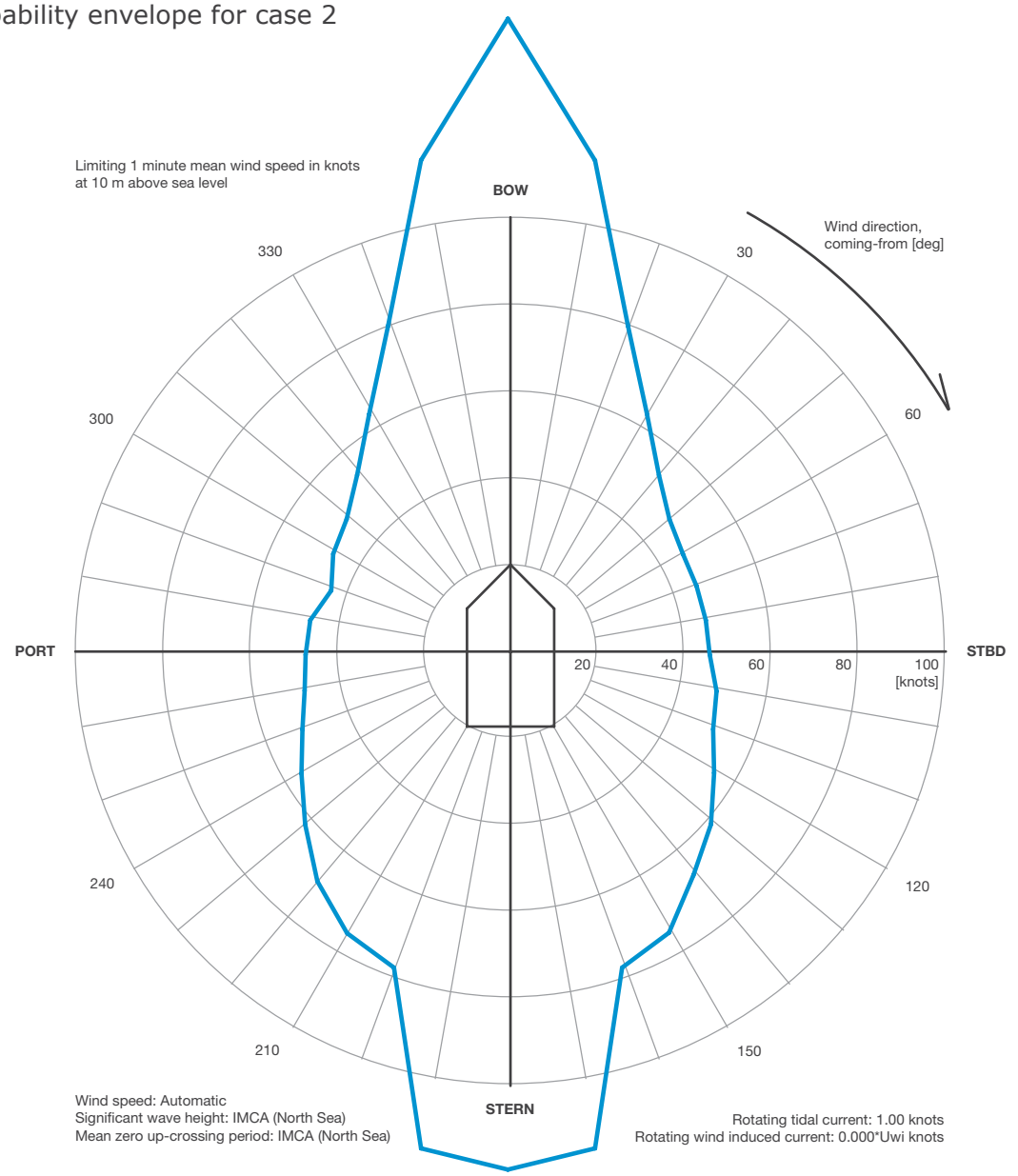
2nd deck



Tank top

DP Plot Capability

DP capability envelope for case 2



KONGSBERG

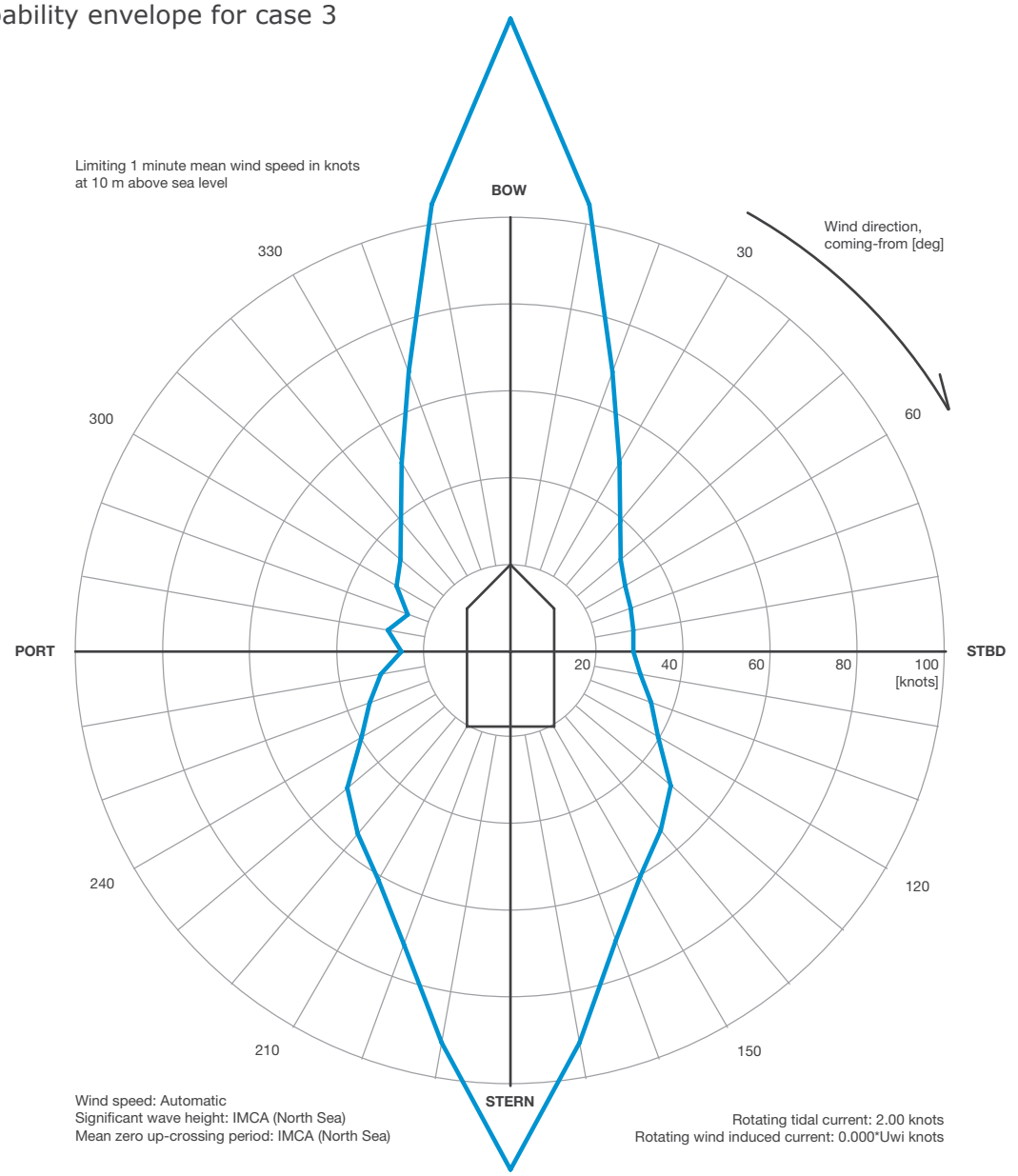
Case number	:	2
Case description	:	All thrusters, 1 kts current
Thrusters active	:	T1-T6
Rudders active	:	R1-R2
Input file reference	:	foot1414_B.scp
Last modified	:	2009-08-10 13.54 (v. 2.7.1)
Length overall	:	84 .0 m
Length between perpendiculars	:	76 .2 m
Breadth	:	18 .8 m
Draught	:	6 .3 m
Displacement	:	6500 .0 T (Cb = 0.70)
Longitudinal radius of inertia	:	19 .0 m (= 0.25 * Lpp)
Pos. of origin ahead of Lpp/2 (Xo)	:	0 .0 m
Wind load coefficients	:	Calculated (Blendermann)
Current load coefficients	:	Calculated (Strip-theory)
Wave-drift load coefficients	:	Database (Scaled by Breadth/Length)

Tidal current direction offset	:	0 .0 deg
Wave direction offset	:	0 .0 deg
Wave spectrum type	:	JONSWAP (gamma = 3.30)
Wind spectrum type	:	NPD
Current - wave-drift interaction	:	OFF
Load dynamics allowance	:	1.0 * STD of thrust demand
Additional surge force	:	0 .0 tf
Additional sway force	:	0 .0 tf
Additional yawing moment	:	0 .0 tf.m
Additional force direction	:	Fixed
Density of salt water	:	1026 .0 kg / m³
Density of air	:	1 .226 kg / m³ (15 °C)
Power limitations	:	OFF
Thrust loss calculation	:	ON

#	Thruster	X [m]	Y [m]	F+ [tf]	F- [tf]	Max [%]	Pe [kW]	Rudder
1	TUNNEL	31.4	0.0	13.2	-13.2	100	883	
2	AZIMUTH	23.4	0.0	15.6	-9.6	100	883	
3	TUNNEL	-33.2	0.0	9.9	-9.9	100	660	
4	TUNNEL	-35.2	0.0	9.9	-9.9	100	660	
5	PROP_AS	-38.8	3.6	62.4	-43.7	100	3530	SPADE
6	PROP_AS	-38.8	-3.6	62.4	-43.7	100	3530	SPADE

DP Plot Capability

DP capability envelope for case 3



KONGSBERG

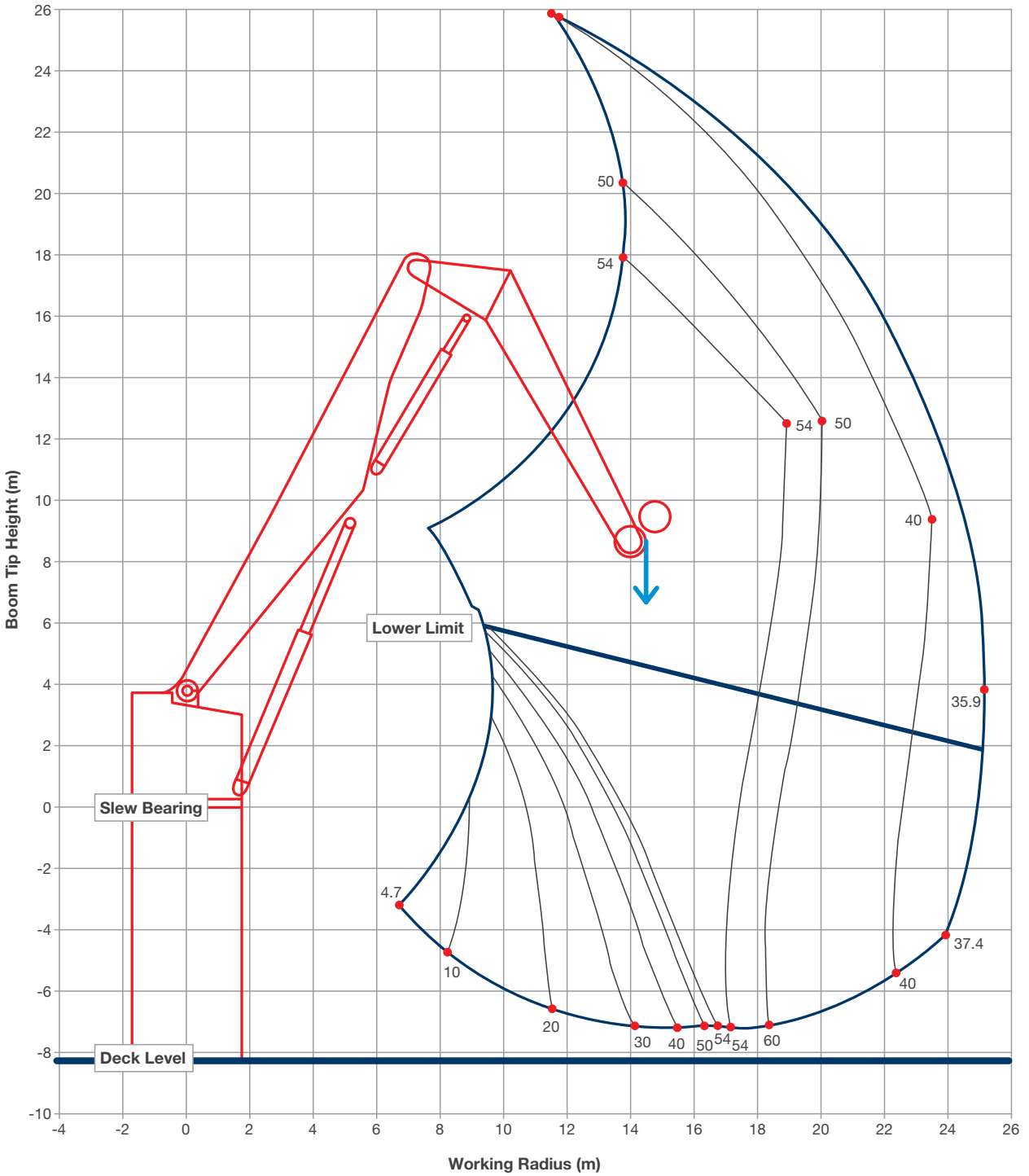
Case number	:	3
Case description	:	All thrusters, 2 kts current
Thrusters active	:	T1-T6
Rudders active	:	R1-R2
Input file reference	:	foot1414_B.scp
Last modified	:	2009-08-10 13.54 (v. 2.7.1)
Length overall	:	84 .0 m
Length between perpendiculars	:	76 .2 m
Breadth	:	18 .8 m
Draught	:	6 .3 m
Displacement	:	6500 .0 T (Cb = 0.70)
Longitudinal radius of inertia	:	19 .0 m (= 0.25 * Lpp)
Pos. of origin ahead of Lpp/2 (Xo)	:	0 .0 m
Wind load coefficients	:	Calculated (Blendermann)
Current load coefficients	:	Calculated (Strip-theory)
Wave-drift load coefficients	:	Database (Scaled by Breadth/Length)

Tidal current direction offset	:	0 .0 deg
Wave direction offset	:	0 .0 deg
Wave spectrum type	:	JONSWAP (gamma = 3.30)
Wind spectrum type	:	NPD
Current - wave-drift interaction	:	OFF
Load dynamics allowance	:	1.0 * STD of thrust demand
Additional surge force	:	0 .0 tf
Additional sway force	:	0 .0 tf
Additional yawing moment	:	0.0 tf.m
Additional force direction	:	Fixed
Density of salt water	:	1026 .0 kg / m³
Density of air	:	1 .226 kg / m³ (15 °C)
Power limitations	:	OFF
Thrust loss calculation	:	ON

#	Thruster	X [m]	Y [m]	F+ [tf]	F- [tf]	Max [%]	Pe [kW]	Rudder
1	TUNNEL	31.4	0.0	13.2	-13.2	100	883	
2	AZIMUTH	23.4	0.0	15.6	-9.6	100	883	
3	TUNNEL	-33.2	0.0	9.9	-9.9	100	660	
4	TUNNEL	-35.2	0.0	9.9	-9.9	100	660	
5	PROP_AS	-38.8	3.6	62.4	-43.7	100	3530	SPADE
6	PROP_AS	-38.8	-3.6	62.4	-43.7	100	3530	SPADE

UT 745 - Platform supply vessel

Load Chart Subsea Lift, 1 Falls, DAF = 1.3



UT 745 - Platform supply vessel

Load Chart Subsea Lift, 2 Falls, DAF = 1.3