

DESIGN	MT 6010
CLASSIFICATION	DNV + 1A1, E0-SF,DYNPOS AUTR, CLEAN, COMF-V (RATING 3), DK(+), HL(2,8), LFL*
BUILDERS	HAVYARD LEIRVIK, CONV. BÅTBYGG MÅLØY
PORT OF REG.	FOSNAVAAG
FLAG	NORWEGIAN
MMSI	258 171 000
IMO NO	9343596
DELIVERY DATE	JUNE 2005, CONVERTED MARCH 2007
CALLSIGN	LNEE3

DETAILS BELIEVED TO BE CORRECT, BUT NOT GUARANTEED.



M/V HAVILA HARMONY

Outline Specification



M/V HAVILA HARMONY

Technical Specification

MEASUREMENTS

Length o.a.	92,95 m
Length b.p.p.	86,80 m
Breath moulded	19,70 m
Depth moulded	7,70 m
Draught, max	6,30 m
Freeboard, min	1,46 m
Corresponding DWT	3974 t
Gross tonnage	4724 t
Net tonnage	1437 t

CLASSIFICATION

DNV + 1A1, E0-SF, Dynpos AUTR, CLEAN, COMF-V
(rating 3), DK(+), hl(2,8), LFL*

CARGO CAPACITIES

Deck cargo	1 mtr above main deck	1860 t
Deck area max	51,0 m x 16,0 m = 816 m ²	4 pipes length
Deck strength	Main deck load fr 84 to 109 = 5 t/m ²	
	Main deck load fr 4 to 84 = 10 t/m ²	
Fuel Oil	1140 m ³	Flow meter with printer
Liquid Mud	SG 2,8	860 m ³ Total 8 tanks
		1 Agitators in each tank (El. Driven)
Brine	SG 2,5	495 m ³
Base oil		289 m ³
Pot water		1012 m ³
Drillwater / ballast		1530 m ³
Methanol +		
1 x Nitrogene Comp		269 m ³
Special Product		239 m ³
Slop		305 m ³
ORO		1140 m ³
Cement / Barite	350 m ³	7 Vertical tanks each 50 m ³

DISCHARGE RATES

Fuel Oil	2 x Twen Screw 0-250 m ³	9 bar
Liquid Mud	2 x Ecc. Screw 0-100 m ³	24 bar
Brine	2 x Twen Screw 0-250 m ³	24 bar
Mineral oil	2 x Twen Screw 0-100 m ³	9 bar
Pot. water	1 x Twen Screw 0-200 m ³	9 bar
Drillwater/ballast	2 x Twen Screw 0-150 m ³	9 bar
Methanol	2 x Centrifugal 0-75 m ³	9 bar
Special Product	1 x Twen Screw 0-75 m ³	9 bar
Slop	1 x Ecc. Screw 0-100 m ³	24 bar
	1 x Centrifugal 0-100 m ³	24 bar
ORO	2 x Twen Screw 0-250 m ³	9 bar
Cement / Barite	2 x Comp. 30 m ³ /min	5,6 bar
		1 x Cyclone
		1 x Dust Collector
		1 x Mucking ejector. 100 m ³ /h

TANK CLEANING SYSTEM

A total of 14 cleaning machines fitted in: MUD, Brine and Slop tanks	
Slop Tank	1 x 39,0 m ³
Hot Water Tank	1 x 16,6 m ³

CARGO MANIFOLDS

1 x Hose handling winch / beams lifting cap. abt 150 kg
placed midships both side Shelter Deck
- Midship both side
- Aft starboard and port

MACHINERY / D/E-PROPULSION Resiliently Mounted

Main Engines	4 x 1900 KW Cummins: Type QSK60
Main generators	4 x 1825 KW. Type ABB
Harbour & Emergency Engine	1 x 485 KW Cummins: Type KTA 19
Harbour & Emergency generator	1 x 456 KW Stamford HCM 534 E

PERFORMANCE / CONSUMPTION

Max. speed	15,45 knots / 27,3 t / day. Draft 4,5 mtr
Max speed	14,70 knots / 27,3 t / day. Draft 5,8 mtr
Econ. speed	13,5 knots / 18,3 t / day. Draft 4,5 mtr
Econ. speed	13,5 knots / 18,6 t / day. Draft 5,8 mtr
Econ. speed	11,5 knots / 9,3 t / day. Draft 4,5 mtr
Econ. speed	11,5 knots / 9,9 t / day. Draft 5,8 mtr
DP II Average	4,0 t / day. Draft 4,5 mtr
DP II Average	4,4 t / day. Draft 5,8 mtr
Harbour Mode	0,8 t / day

MOON POOL

6,0 m x 5,25 m (L X B)

HELIDECK

Sikorsky S-92. D.value 20,9 m

BRIDGE DESIGN: NAUT - OSV

1 x Consol forward bridge
3 x Consol aft bridge
1 x Consol each bridge wing
1 x Radio station
1 x Operation Control / office
1 x Survey area

AUTOMATION SYSTEM

Høglund Marine AS

LOADING COMPUTER

1 x Shipload

DP SYSTEM DYNPOS AUTR

Kongsberg Simrad SDP22
1 x Fan beam MK 4,2
1 x DPS 200
1 x DPS 132
2 x Wind sensors: GILL Ultrasonic
1 x Hipap 500

THRUSTER CONTROL

Kongsberg Simrad STC 40
1 x Independent Kongsberg Joystick

BRIDGE WATCH MONITORING SYSTEM

1 x Kongsberg BA-11

DECK EQUIPMENT / OFFSHORE CRANE

Windless	2 x ODIM IAI 299 El. Driven 10 t
Tugger winch	2 x ODIM IAI 424 Hydraulic 15 t
Capstan	2 x ODIM IAI 670 Hydraulic 10 t
Deck Crane	1 x ABAS 3 t / 15 mtr 1 x Palfinger 1t
Cargo securing winch	Total 4 x 3 t pull. 5 t brake holding Placed on each side Shelter Deck
OFFSHORE CRANE	1 x 150 t / 10 mtr Double fall. 1250 m
Knockle type	1 x 100 t / 15 mtr. Single line 2500 m
Hydramarine HCM 3568 LKO	1 x 75 t / 20 mtr. Single line
Hive compensated	1 x 25 t / 35 mtr. Single line
OPTION	A-Frame 100 t

ANTI HEELING

1 x Heeling pump	1200 m ³ /h
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ANTI ROLLING SYSTEM

3 x Stabilizing tanks. Passive anti.roll system

NAVIGATION EQUIPMENT

1 x Radar	Furuno FCR-2837 Arpa-S
1 x Radar	Furuno FAR-2827 Arpa-X
1 x Radar slave monitor aft bridge	
1 x AIS Transponder	Fa-100
3 x Gyro	Anschutz Standard 22
1 x Magnet compass	Plath Reflecta 1
1 x Autopilot	Anschutz Pilotstar D
1 x DGPS	Furuno G90
1 x VDR	Furuno VR-5000
1 x Echo Sounder	Furuno FE-700
1 x Doppler Log	Furuno DS-80
1 x Elec. Chart	ECDIS type TECDIS
1 x Slave Elec. Chart	ECDIS type TECDIS
1 x VHF Dir. finder	Taiyo TD-L1550
1 x Frefloat	EPIRB Jotron Tron 40S
1 x Frefloat	EPIRB Jotron Tron 45 SX
2 x Radar Transponder	Tron Sart
1 x ITT Low Light Binocular	

ACCOMMODATION 86 PERSONS

Cabins	- 18 off single cabins
	- 28 off double cabins
	- 2 off 1+1 men cabins
	- 1 off 2+2 men cabins
	- 1 off 4 men cabin
	- 2 off office
	- 2 conference room
	- 1 off Hospital with additional 2 beds
	- 1 off Sky lobby
	- 1 off Offline room
	- 1 off ROV- control room

LIFE SAVING EQUIPMENT

Safety Equipment	Acc to NMD/SOLAS for 86 persons
Life Raft	8 x 25 persons
Rescue boat	Type Alisafe 770, 10 persons
Rescue boar davit	TTS Marine HL9D
Lifeboats	2 x Schat Harding 90 persons each
Survival suits	50 persons

COMMUNICATION EQUIPMENT

1 x SSB Radio	Furuno FS-2570-25
2 x VHF	Furuno FM 8700
1 x VHF	Furuno FM 2721
2 x Inmarsat C	Felcom 15
1 x Navtex	Furuno NX-500
3 x UHF Fixed	Motorola GM-380
1 x Inmarsat F	Felcom 70
1 x V - SAT system	Caprock
1 x Helibeacon	Telesupply TS-20
2 x Aeronautical VHF	Icom IC-A6E
1 x Aeronautical VHF	Jotron TR- 710
3 x VHF GMDSS	Portable Tron TR-20
3 x VHF Portable	(EX)Motorola GP 900
4 x UHF Portable	(EX)Motorola MT2000
2 x GSM Phone	Voice / Fax. Nokia
1 x GSM Phone	E-mail Nokia 32
Sound Reception system	1 x Stento VSS-111
Integrated Communication System	1 x Ulstein COM
2 x Telefax	Brother 8070 Laser

Dect System: Alcatel:

2 x Indoor base stations

3 x Outdoor base stations

4 x Portable phones Alcatel 200 EX

Loudhailer system

Speaker 150W

1 x Sound Powered Telephones system. With total of 6 telephones

ENTERTAINING EQUIPMENTS

1 x Sat. TV: Seatel

1 x Rack with 5 x Tuners and 1 x DVD

1 x TV in all crew cabins

1 x TV in all lounges

1 x Radio / CD in all cabins

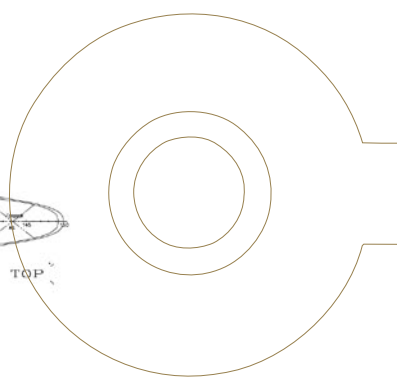
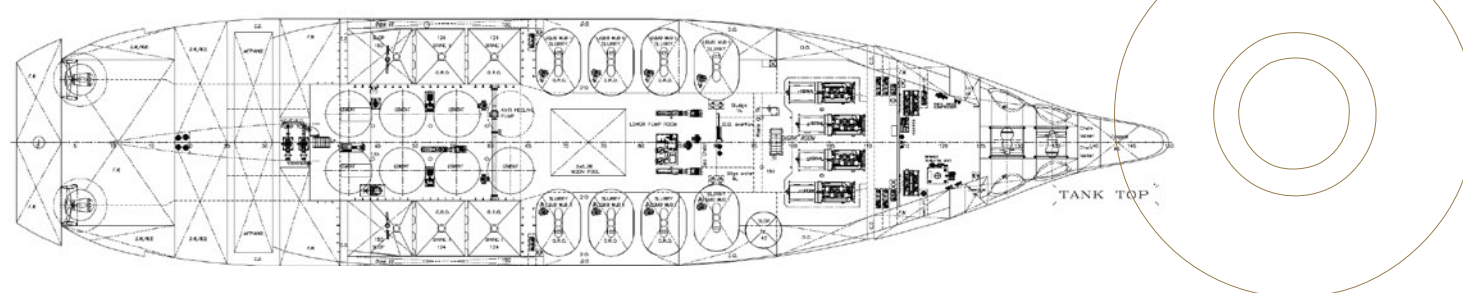
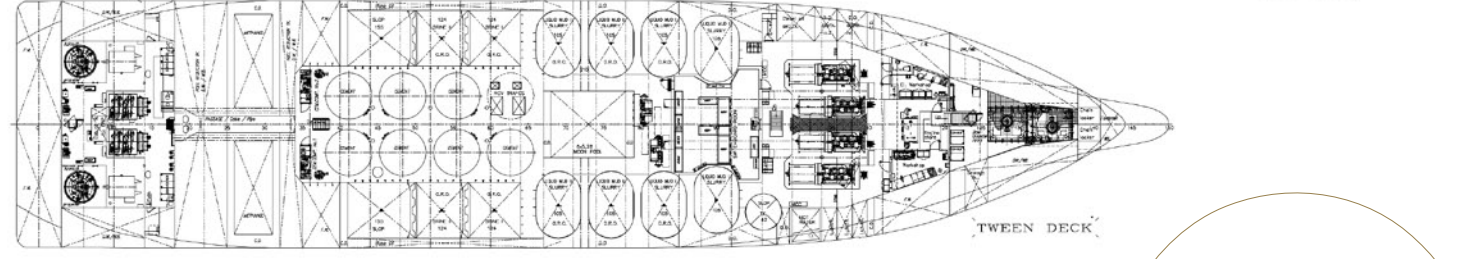
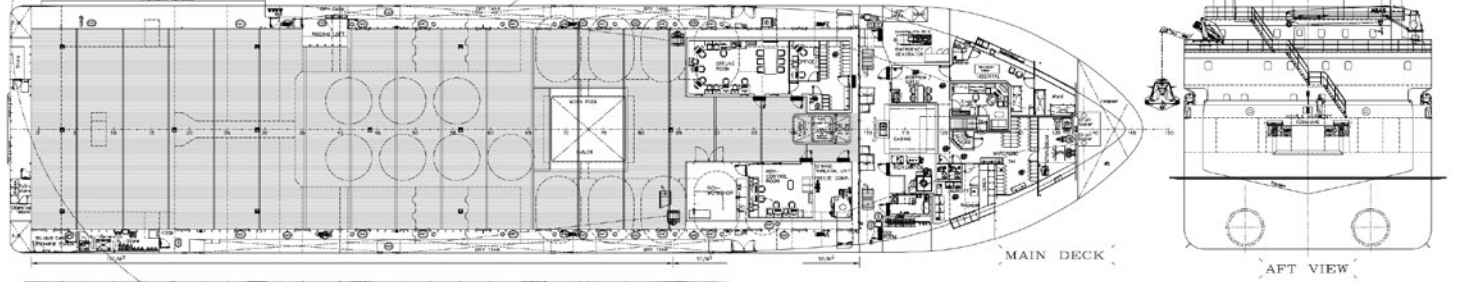
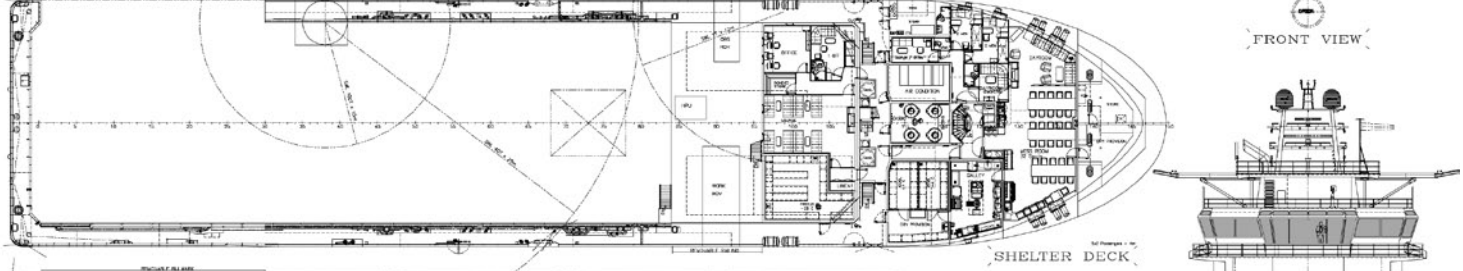
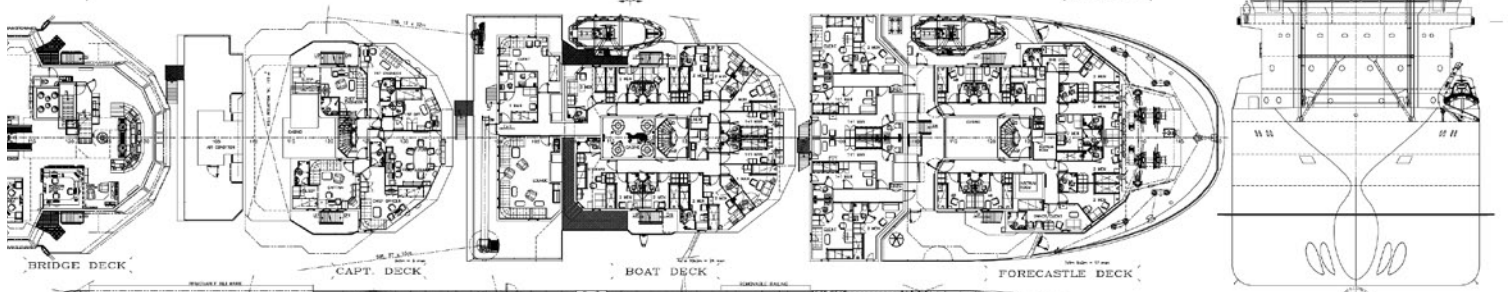
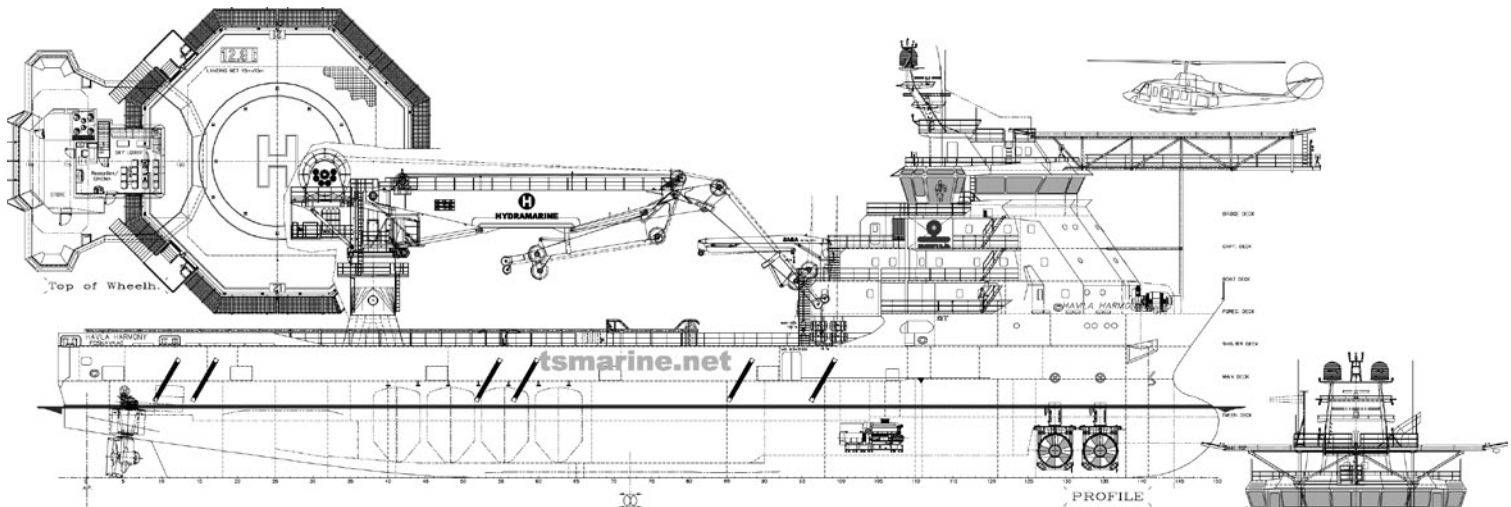
1 x Gymnasium w/e

INCINERATOR

1 x Teamtec OGS 200 C

HOT WATER BOILER

1 x Pyro: E-1130 450 kw



CARGO CAPACITY PLAN

TANK	Volume M ³	Fuel	Pot Water	Drill water M ³	Ballast water	Mud SG 2.8	Brine SG 2.5 Anti Heeling	Base Oil	Methanol Crude Oil	Special product	Slop Anti Heeling	Dry Bulk	
1	149.9			149.9	149.9								
2 PS	136.0			136.0	136.0								
2 SB	119.2			119.2	119.2								
3 PS	126.9		126.9										
3 SB	128.1		128.1										
4 PS	82.2	82.2											
4 CL	116.7	116.7											
4 SB	88.2	88.2											
5 PS	156.2	156.2											
5 SB	137.6	137.6											
6 PS	191.9	191.9											
6 CL	102.1	102.1											
6 SB	191.9	191.9											
7 PS	144.8							144.8					
7 CL	142.6			142.6	142.6								
7 SB	144.8							144.8					
8 PS	171.4		171.4										
8 SB	173.2		173.2										
9 PS	134.5								134.5				
9 SB	134.5									134.5			
10 PS	88.6			88.6	88.6								
10 SB	88.6			88.6	88.6								
11 PS	73.5			73.5	73.5								
11 CL	192.4		192.4										
11 SB	78.9			78.9	78.9								
12 PS	110.4		110.4										
12 SB	110.4		110.4										
14 PS	107.9					107.9							
14 SB	107.9					107.9							
15 PS	107.4					107.4							
15 SB	107.4					107.4							
16 PS	107.5					107.5							
16 SB	107.5					107.5							
17 PS	107.5					107.5							
17 SB	107.5					107.5							
18 PS	125.8						125.8						
18 CL	239.1										239.1		
18 SB	125.7						125.7						
19 PS	122.0						122.0						
19 SB	122.0						122.0						
20 PS	152.4											152.4	
20 SB	152.4											152.4	
21 RRT	89.2			89.2	89.2								
22 RRT	231.4			231.4	231.4								
35 RRT	115.6			115.6	115.6								
BAR 2	50.0											50.0	
BAR 3	50.0											50.0	
BAR 4	50.0											50.0	
CEM 5	50.0											50.0	
CEM 6	50.0											50.0	
CEM 7	50.0											50.0	
CEM 8	50.0											50.0	
TOTAL		1066.8	1012.8	1313.5	1313.5	860.6	495.5	289.6	269.0	134.5	239.1	304.8	350.0

1 M³ = 6,289 BARREL (BBL) = 35,315 F3



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