T/T "TEXACO AMSTERDAM"

Signal letters: LEVX

Owners:
Texaco Norway A/S
Stortingsgaten 30
P.O. Box 1680, Vika
Oslo 1 Norway

Telephone: 41 86 85
Telex: 16726
Cable address: Texaconor Oslo

GENERAL INFORMATION

T/T "TEXACO AMSTERDAM"
OWNER: TEXACO NORWAY A/S OSLO

N.S.D.M/VEROLME NETHERLANDS HULL 832 1972.

Deadweight capacity:	229.642 DWT (Metric). -	226.025 L/T.
Length O.A.	1082.7 ft	330 m
Length pp	1053.9 "	321.22 m
Beam moulded	159.9 "	48.74 m
Depth moulded	84.15 "	25.65 m
Gross reg. Tons	116.247.33 tons	329.312.54 cum
Net reg. Tons	92.673.72 "	262.531.77 "
DW (SSW)	226.025 "	229.642 tonnes
Displacement	257.506 "	261.626 "
class society	American Bureau of Shipping (ABS).	

Propulsion machinery

Turbines: General Electric - Verolme, Type MST-14, Non reheat cross compound, double reaction turbine. Serial numbers 200133 - 200134.

Maximum rated horsepower 31500 SHP
Steam before manoeuvring valve pressure 850 psig 60 ato
" " " " temp. 950°F 510°C
HP turbine with 2 bleeders 25,35 ata / 12,82 ata
Steam crossover with 1 bleeder 6,5 ata
LP turbine with 1 bleeder 0,90 ata
Speeds at maximum rated horsepower
HP turbine 6652 RPM
LP " 3442 "
Propeller 80 "
Maximum allowable propeller 82,5 RPM

Gears: General Electric double reduction, articulated locked frain type gear.
Model MCT - 119 - C1.

Lubrication: Turbine and gear lubricated by gravity.

Thrust bearing: Make Verolme GE, Type MDT-119 C.1.
Material: mild steel.

Main Condenser: Verolme
Type: Single Pass.
cooling surface 26.900 sqft
Weight filled: 99 tonnes
Weight empty: 72 tonnes

Vacuum pumps: Make Nash. Type CL405 Waterring. Speed 1200 RPM.

Turning gear: Arranged for driving the H.P. turbine shaft.
Driven by an A.C. motor with output 10 HP at 1745rpm,
or by hand in an emergency situation.

Propeller (working): One (1) righthanded four bladed of cunial bronze. Diam 9400 mm of nonuniform pitch-
mean pitch 6373 mm.
exp. area ratio 0,510
weight 58290 kg.
center of shaft above keel 5,19 m.

Propeller (spare): as working propeller

Propellercap: Make
Material: bronze RG10
Weight: 760 kg.

Propellershaft: Material: forged steel
Diam: Ø838/Ø835
Weight: 37370 kg

Intermediate shaft: Material: forged steel
Diam: Ø660/Ø565
Weight: 23600 kg.

Shaft bearing: Make Howaldtswerke Deutche Werft
Type: simplex 670
water cooled
Weight: 2000 kg

Afterward sealing: Make Howaldtswerke Deutche Werft
Type Simplex 900
Diam. Ø900/Ø835 (shaft)
Material casing - cast iron
Weight 1226 kg.

Forward sealing: Make Howaldtswerke Deutche Werft.
Type Simplex 900
Diam Ø900/Ø838 (shaft)
Material casing - cast iron
Weight 617 kg.

Sterntube: Make Verolme
Material Ductile iron ASTMA 385
Weight forward bush 3360 kg
" aft " 8200 kg.

Boliers.

Main boiler: Make Foster Wheeler J.B.B. Verolme
Type ESD III Marine boiler
Generating surface 1516 m^2
Superheater surface 595m^2
Furnace volume 120,5 m^3
Waterwall tubing surface 638 m^2
Furnace projected. Radiant HTG surface 127,5m^2.
Weight filled 195,6 tonnes
Weight empty 159,5 tonnes
Weight service 176,5 tonnes

	Design	Normal	Maximum
output	70.000 kg/h	100.000 kg/h	118.027 kg/h
Design pressure		74 ato	74 ato
Working pressure		63.27 ato	63.27 ato
Feedwater temp		221°C	221°C
Total superheater outlet temp		513°C	513°C
Efficiency anticipated		88.690	
Fuel consumption		6460 kg/h	7800 kg/h

Air preheater: Make I. Howden & Comp. Ltd.
Type Ljungstrøm 18½ WM 34

Element details: Hot end tier 22" DU enamelled m.s.
Cold end tier 12" NP enamelled m.s.

Burners and Register: Make Hamworthy Wallsend.
Type HX 585 steam atomizing suitable for downward firing with diesel or heavy fuel oil. Interchangeable nozzles.
Each burner fitted with duplicated Laudis and Gyr RAR. 3 flame scanners for main flame with interconnected air/steam/oil shut off valve gearing and layshafts, pneumatic cylinders for advance and retraction of ignitor and the opening and closing of the combustion air sliding sleeve damper.

Sootblowers: Make Clyde Blowers Ltd.,
Type MKLSB/422/EO rack
CIX:SP/E Multi nozzle kraftanlagen swivel
kraftanlagen swivel type.

Installation: 3 in Boiler Longstroke retractable
2 x Econ
2 x Airheater

Water level regulator: Askania

Water level indicator: Make Van Essen
Type
Combined with alarm/trip functions

Forced draft fans
main boiler: Make Babcock - Oberhausen
Type 2512 . Serial No.: 2279 - 22781
Number of fans: 2
Capacity 18-15 m^3/sec.
Pressure (static) 880-600 mm wc.
Pressure (dynamic) 940-642 mm wc.
Speed: 1180-880 rpm

Auxiliary Boiler: Make VMY
Type Water tube natural circ.
Job no: 05832
Heating surface total 410 m^2
W.P. 44 kp/cm^2
Nominal cap.: 30 ton/h at 263°C
Superheater fitted as external
Superheater temp 345°C
Superheater heating surface 264 m^2.
Weight without water 52.000 kg
Weight with water 67.000 kg.

Oil burners: Make Hamworthy Wallsend
Type 425 HX steam assisted.
Number: 2 located in boiler front.

Forced draft fan
Aux. boiler: Make Babcock & Wilox
Fan type 2376/502/1
Cap.: 9.88 m^3/sec. at 38°C
Pressure (static) 625 mm WG
Pressure (dynamic) 660 mm WG
Speed 1780 rpm

External Desuperheaters:
Desuperheater no. I: Eurocontrol Steamreformer Equipment
type steamcon.
Make: Mercuwatt.
Process data: Steamflow Gmax: 104,3 tonnes/hr. 230.000 lbs/hr.
Gmin: 0,71 tonnes/hr. 1576 lbs/hr
Steam inlet pressure: 63.3 kp/cm^2/900 psi
Steam outlet pressure:42.2 kp/cm^2/600 psi
Steam inlet temp. 513°C 955°F
Steam outlet temp.371°C 700°F
Max. Quantity cooling water 12,25 tonn/h. 27000 lbs/h.
Min. Quantity cooling water 86 kg/h. 190 lbs/h.
Temp. of cooling water 281°C 563°F
Pressure of cooling water 84,5 kp/cm^2 1200 psi.
Desuperheater No.II: Make Mercuwatt
Type Steamcon
Max. capacity 10.000 kg/h
KV/KVS = 20/30,2 steam
KV/KVS = 0,30/0,45 water
Max. quantity cooling water 1240 kg/h.
Steam/water conditions as desuperheater No. I.

Controller cabinet: 2 controller type C1. Pneumatic Regulator.
2 indicators type A2P144P
1 electric monitor type EKE 1/t low temp alarm
1 electric monitor type EKT 1/uv/h high temp alarm.

Desuperheater No.III: Eurocontrol steamreformer equipment.

Type AV 40

Procers data:			
Steamflow Gmax.			50.000 lbs/hr.
Steamflow Gmin.			910 lbs/hr.
Steam inlet press.			600 psig
Steam outlet press.			225 psig.
Steam inlet temp.	371°C	700°F	
Steam outlet temp.	216°C	420°F	

Controller cabinet:
2 controllers type C1 Pneumatic Regulator
2 indicators type A2P144P.

Feedwater heaters:

Feedwater heater No. 1:
Make VM.IJ
Type horizontal
serial no. E31-832

Medium Tubeside:	feedwater	shell side	steam
Pressure	11,2 ata	0,9 ata	/50psi
Inlet temp.	40,6°C/175°F	92,8°C	/199°F
Outlet temp.	190° C/375°F		300°F

Weight filled 65145 kg
Weight empty 4510 kg.

Feedwater heater No.2:
Make V.M.IJ.
Type Vertical spray type
Serial No. E32 - 832
Service Marine atomizing deaerator.

Medium Tubeside	feedwater	shell side feedwater
Pressure	108 psi	60 psi
Inlet temp.		138°C/279°F
Weight filled	41.000 kg	90.200 lbs
Weight empty	10.000 kg	22.000 lbs

Feedwater heater No. 3:
Make V.M.IJ.
Type Vertical U-type
Serial No. E33-832

Medium tube side	feedwater	shell side steam
Pressure	89.64 ato/1275 psig	28.12 ata/300 psi
Inlet temp.	218°C /423°F	349°C /660°F
Outlet temp.	199°C /388°F	199°C /388°F

Weight filled 8278,6 kg / 18213 lbs
Weight empty 6269 kg / 13792 lbs

Feedwater heater No. 4:
Make V.M. IJ
Type Vertical U-type

Medium tubeside	feedwater	shell side steam
Pressure	89,64 ata/1275 psi	28,12 ata /600 psi
Inlet temp.	250°C / 481°F	432°C /810°F
Outlet temp.	229°C / 445°F	229°C / 445°F

Weight filled 7230kg 16008 lbs
Weight empty 5034kg 12396 lbs

Prime movers and Alternators

Diesel Generator set: Make Ruston Paxman
Type 16 YJCZ
Serial No.: 60779
Four stoke Vee form
Cylinder dim: stoke 8½ in, bore 7½ in.
Number of cylinders: 16
Output 1680 HP
Speed 1200 rpm
Integral fuel, lub.oil and cool water pumps.
Governor: Woodward UG8.
Turbocharger: Make Napier
Type HP210DP
2 in number

Alternator: Make ASEA
Type 6F 630 VSB

Full load KVA rating 1500 at pf 0,8
Max. KVA rating during 110% for 2hrs at pf 0,8
125% for 30min. at pf 0,8
150% for 2 min. at pf 0,5
Full loaf speed 1200 rpm
Full load current 1950 A
Normal voltage 450 V
Normal frequency 60 Hz
Normal Retor current at full load KVA and rated pf: 70A
Sense of rotation: antoclockwise (from exciter end)
Class of insulation: 155 class F
Type of bearings: sleeve bearings
Lubrication by own system
Cooling: closed cooling system
Shaft dimensions Ø180m GL=225 m
Weight 5500 kg

Emergency Diesel Generator set:
Make Ruston Paxman
Type 6 RPHCZ serial No. 6287467
Job No. 60781
Four stoke Vee-form supercharged
Cylinder dim.: stoke: 7,25 in
bore : 7 in
number: 6
speed 1200 rpm
Weight 7452,5 kg

Governor: Woodward UG8

Emerg. diesel alternator:
Make ASEA
Makers typr GF500 VSA

Full load KVA rating 315 at pf 0,8
Max. KVA rating during 110% for 2 hrs. at pf 0,8
125% for 30min. at pf 0,9
150% for 2 min. at pf 0,5
Rated speed 1200 rpm
Full load current 404 A
Normal voltage 450 V

Normal frequency 60 Hz
Normal retor current at full load KVA 49,5 A
Sense of rotation: anticlockwise (from exiter end)
Class of insulation 155 (class F)
Type of bearings self-ventilation
Cooling air-cooled
Weight 2350 kg

Turbo Generator set:

Turbine: Make A. G. Weser
Type 24004
Inlet press. 60,7 ata / 803 psig. Temp 510°C / 950°F
Outlet press. 0,05 ata / 0,735 psia
Speed 10.000 rpm
Output 1725 HP
Steam consumption 4600 kg/hr
Sense of rotation clockwise
Gear Transm 8,33

Coupling: Make Krüpp
Type Press. oil lub.
Krüpp tooth coupling 2KL112

Alternator: As Diesel alternator.

Switch Gear:

Main Switchboard: Make: Verolme Elektra
Steelplate construction arranged for parallell operation of two 1500 KVA alternators, inclusive measuring instruments, automatic breakers, semiautomatic phasing, fuses etc.

Emergency switchboard: Make : Verolme Elektra
Steelplate construction for the 315 KVA emergency alternator, inclusive measuring instruments, automatic breaker, fuses etc.

Eight (8) Power distribution boxes - 440 volts closed construction for power.

Twenty(20) Distribution boxes - 220 volts closed construction for light and heating.

Automatim and Alarm system.

Boiler automation: Make ASKANIA
Drawings RSKS 25-0335

Main Boiler:

1. load control: PI regulator with steampressure as 1st element and steamflow as 2nd element. Manipulated variable: Fuel flow.

2. combustion Air Control:
I regulator with air flow as controlled variable and with fuel flow as variable set point.

3. Fuel oil Differencial Pressure Control:
I regulator with Pressure drop across rotary slide valve for fuel control as controlled variable. The manipulated variable is the fuel flow by means of throtting valve.

4. Steam temperature Control:
PID regulator with steam temperature at 2nd superheater outlet as controlled variable (1st element) and steam flow as auxiliary variable (2nd element). The manipulated variable is the steam flow to attemperator in the upper drum.

5. Water level control:
PI regulator with drum level as controlled variable, steam flow and feed valve position as 2nd and 3rd elements. The manipulated variable is the feed flow.

6. Burners control and ignition:
ASKANIA - VEROLME ELEKTRA

7. Viscosity controller:
Make VAF Viscotherm.

Auxiliary Boiler:

1. load control: P-regulator
Controlled variable steam pressure
Manipulated variable fuel flow.

2. Combustion air Control:
I regulator.
Controlled variable - Air flow
Variable set point - Fuel flow.

3. Fuel oil pressure Control:
I regulator
Controlled variable - Fuel pressure in main line before burners.
Manipulated variable - Recirculated fuel flow.

4. Water level control:
P/P regulator
Controlled variable - drum level (1st element)
Boiler load as 2nd element.
Feed flow as manipulated variable.

Turbine Control System.

Make : Siemens

System consists of:

1. Automatic blocking
System which is indicated by:
High level in main condenser
High level in boiler drum.
Low vacuum in main condenser
Low pressure in boiler drum.
Low lub.oil pressure
Manuel pushbutton
Turning gear engaged.

2. Automatic operation and control from Bridge and Engine room Control room.

3. Electric manuel control.

4. Manuel control.

Turbine Control system with integrated alarm system and furnished with maneouvreprinter.

Alarm and Monitoring system.

Make : Søren T. Lyngsø

Type: 217 A

Alarmsystem consists of 161 measuring points.

Miscellaneous Aux.Machinery and Equipment.

Atmospheric condenser for cargo pumps.

Make: Verolme

Cooling surface 376 m^2.

Weight filled 6,2 ton

Weight empty 4,2 ton

Seawater Evaporators and distilling plant:

Make: Atlas MAK
Type SEVgf50NE. Serial No. 79250/9
Capacity 50 ton pr. 24 hr. each

Lub oil cooler cargo ballast pump turbines:

Make: V.M.IJ
Weight filled 5250 kg
Weight empty 2750 kg

Main lub. oil cooler:

As above.

Lub oil filter - Discharge:

Make: AKD
Type N.W. 150 US 70
Serial No.: G 81-1000
Capacity 607 USG/min.

Lub oil filter - Suction:

Make: AKD
Type N.W. 200 US 70
Serial No.: CG1-1000
Capcity 607 USG/min.

Lub.oil suct-discharge strainer Cargo/ballast system:

Make: AKO
Type C61-1000
Serial No.: 25489/1
Capacity 280 USGM

Lub.oil purifier:

Make: Alfa Laval
Type MAPX 204 GT -24-60
Serial No.: 2919189
Max. capacity 2000 lt/hr.

Clarifier coalescer for sterntube:
Make: Marine Moisture
Type 0,75 USGM

Fuel oil suction strainer:
Make: Boll & Kirch
Type 174-12/sons 80
Capacity 10,9 m^3/h
Selfcleaning.

Fuel oil discharge strainer:
Make: Boll & Kirch
Type 174-10/50 NS65
Capacity 10,9 m^3/h
Selfcleaning.

Oily water separator:
Make: Franz Hebold
Type: COX - E 1.
Capacity 20 t/h.

Lawson De-oiler:
Make: Weir
Type Model 1
Serial No.: 24144/2a
Capacity 6820

Fuel oil transfer pump:
Make: IMO
Type ALF 100-3N2F
RPM 1150 HP 24
Capacity 265 USGM

Fuel oil transfer st.by pump:
Make: IMO
Type ACG 70 2N2F
Head 105 psi RPM 1150 HP 83
Capacity 90 USGM

Fuel oil service pump (2):
Make: IMO
Type ALGGO 4N2EH
RPM 450/1750 HP 7,6/35
Capacity 12-59 USGM

Diesel oil iguition/Diesel oil transfer pump:
Make: IMO
Type ALD 38 4NDH
RPM 1750/3450 HP 4/85
Capacity 15-30 USGM

Lub. oil service pump:
Make: IMO
Type ABQ 110-3LDN4
Total diff. press 55psi HP 45
Capacity 607 USGM

Booster pump L.o. separator:
Make: IMO
Type ACE-32-2 NC
Disch.head 91 psi HP 0,8
Capacity 10,8 USGM

Main condenser circ. pump:
Make: Worthington
Type 28KV
RPM570 total diff. press 0,36 kp/cm^2 HP 99
Capacity 5690m^3/h.

Athmospheric condenser circ. pump:
Make: Eureka
Type C13 A2D 20-24
Disch.head 11 psi RPM 850 HP 112
Capacity 2950m^3/h.

Foam Fire ext. pump:
Make: Thune-Eureka
Type C5AC8-8M1
RPM 3500 HP 380
Capacity 2300 USGM

Aircond. coolwater pump:

Make: Eureka
Type CGC 150
RPM 1750 HP 495
Capacity 330m^3/h

Engine room bilge pump centrifugal:

Make: Eureka
Type C5AC-8-8M2
RPM 1750 HP 68
Capacity 1000 USGM

Engine room bilge pump reciprocal:

Make: Worthington
Type Horiz.duplex
RPM 73 HP 4
Capacity 11,4 m^3/h

Bilge and General service pump:

Make: Eureka
Type C5AC6-7H2
RPM 1750 HP 125
Capacity 1000 USGM

Saltwater service/emergency bilge pump:

Make: Eureka
Type C5AC8-8M2
RPM 1750 HP 83
Capacity 12000 USGM

Freshwater hydrophore pump:

Make: Stork
Type NU 19,5-C-4-EXC A5/6
HP 12 RPM 3450
Capacity 60 USGM

Hot water circulating pump:

Make: Stork
Type NU 17-C-4
RPM 1140 HP 0,26
Capacity 22 USGM

Main boiler feed pump:

Make: Coffin
Type Deb
Press 1200 psig RPM 7900
Capacity 625 USGM
Steam consumption 1100

Atm. condenser or: cond. and boiler feed pump (big):

Make: Worthington
Type 2 WXL-812
RPM 3500 HP 117
Capacity 34,1 m^3/h

Atm. condenser or: cond. and boiler feed pump (small):

Make: Worthington
Type 2WXL-810
RPM 3500 HP 117
Capacity 34,1 m^3/h

Main condensate pump (2):

Make: Worthington
Type 4-UZV-17
RPM 1775 HP 78,6
Capacity 108 m^3/h

Port feed pump or boiler filling pump:

Make: Ruhrpumpen
Type RDPH 100/125-60
RPM 247 HP 61,2
Capacity 50 USGM

Vacuum pump (2):

Make: NASH
Type CL405 waterring
RPM 1200 HP 19
Capacity 76 m^3/h at 0,0517 atm.

Main drain pump:

Make: Worthington
Type 4-UZV-17
RPM 1750 HP 100
Capacity 113,5 m^3/h

Aux. drain pump:

Make: KSB
Type W.K.L. 32/6
RPM 3480 HP 9
Capacity 9,1 m^3/h

Cargo oil stripping pump:

Make: Dawson & Downie
Type Steam driven vertical duplex
Capacity 1540 USGM
Steam consumption 15,675 lbs/hr.

Cargo oil pump (4):

Make: JM.W. JÖNKÖPING
Type Z-222-509
RPM 1200
Capacity sw. 4000 m^3/h
Max. pump power 3800 HP

L.o. pump cargo pump turbine:

Make: IMO
Type A.B.F. 90-3N2N
RPM 1750 HP 21,4
Capacity 280 USGM

Ballast pump (1):

Make: J.M.W. JÖNKÖPING
Type Z23-517 vertical
RPM 1200 Max. HP 850
Heat 56,5 mWC
Capacity 3000 m^3/h

Emergency fire pump set:

Maker: Ellehammers laboratorium Danmark
Diesel engine: MWM
Type TD232 V12 turbocharged

Main pump:

Maker: Swanenhøj
Type NH-200-1-C
Capacity 375 m^3/h
Head 80 m

Feading unit:

Maker: Swanenhøj
Type NIP 2006 submersible
Capacity 375 m^3/h
Head 25 m

Hydraulic equipment:

Maker: Vickers
Pump type: 45V60-A-1B-1D
Motor type: 45M-185-A-1C-20

Hydraulic power pack cargo valves:

Maker: Navire cargo gear AB Göteborg, Sweden
Type: Kracht KP 12/4
Two gear pumps
Capacity 7,2 l/min.
Pressure 150 kp/cm^2

Ejectorpump for evaporator:

Make: Körting
Type: 13.33.02
RAM 3510

Ship Service Compressor (2):

Make: Hamworthy
Type: 2TM6
Capacity 140 CFM.FAD
Pressure 120 psi
RPM 700 46 HP

Instrument air compressor:

As Service air compressor.

Diesel starting compressor:

Make: Hamworthy
Type 3SF3
Capacity 15 CFM RAD
Working press 175 psi
RPM 1130, 10HP

Refr. filter for instrument air:

Make: Hankinson
Type F 100
Capacity 170 nm^3/hr

Airconditioning compressor for accomodation:

Make: Semco
Type GW - steamjet cooling plant
Cooling capacity: 350.000 kcal/h
Steam consumption: 2250 kg/h

Provisions Refr. plant (2):

Make: J & E Hall
Compr.type 8 cyl. V block
Capacity 16390 kcal/h at 37°C
1750 RPM

Engine room supply fan:

Make: Woods
Type 48 j.s.
Capacity 55000 CFM
Press.static 1,5 in WG, dyn. 1,2 in WG.
1170 - 585 RPM

Engine room exhaust fan: - as above

Engine room exhaust/supply fan: - as above

Gas freeing fan:

Make: Hughes
Type 40,5 BSB 60
Capacity 59 000 m^3/hr
RPM 2960 1900 mm WC
Steam consumption of turbine 16,5kg/HPhr

Pumproom exhaust fan (2):

Make: International Hi-press
Type centrifugal exh.fan CN 1000 D
Capacity 5000 m^3/h
Press. 95 mm WG

Electric welding machine:

Make: Morelisse
Type: E.300P
Primary voltage 440V 60 Hz

Drilling machine:

Make: Condor
Type: Model SC35
Capacity: 32/40 mm
Speed: 700/100 RPM 1,5 HP

Engine Lathe (Big):

Make EFI
Type: DU-25
Height of centers: 250 mm
Distance between centers: 1500 mm

Engine Lathe (Small):

Make: Harrison
Type: 11 standard

INERT GAS PLANT.

Scrubber:

Make: Peabody Ltd.,
Type: Marine gas rubber lined
Capacity: 20.000 m^3/h

Deck seal:

Make: Peabody Ltd.,
Type: Rubber lined

Blowers: (2)

Make: Davidson & Co., Ltd.
Type: SI BCB15 35"/33½"
5380 RPM 210BHP

Discharge Bellows:

Make: André Rubber Co.
Type: 24"
Max press. 65" WG

Suction bellows:

Make: André Rubber Co.
Type: 24"
Max vac. 30" WG

Isolating valves:

Make: Batley valve Co., Ltd.
Type: 24" Butterfly spoolseal.

Scrubber pump:

Make: Worthington Simpson
Type: Vertical 5L3 G128549A
1750 RPM 75HP

Gas analyser:

Make: Taylor Servomex
Type: OA 269

Boiler uptake valve/actuator:

Make: Bryan Donkin Co.
Type: 28" butterfly 516A.

NAVIGATIONAL & SIGNALLING EQUIPMENT

Gyro compass:

Make: Anschütz
Type: standard III IV VI
Compass 110-203/204

Sonar Doppler:

Make: Ametek/Straza, Calif.

Radar:

1 Marconi
Type: Raymark 16
1 Raytheon
Type: Modell 1660/125

Radiodirection finder:

Loadstar 2464 D.

Decca Navigator:

Make: Kongsberg
Type: Mk12

Eccosounder:

Make: Marconi

Speedlog:

Make: Svenska Ackumulator A/B Jungner
Type: SAL-24

Radiostation:

Main transmitter: Marconi
Type: crusader N1000
Emergency: Marconi
Type: salvador 3758 A
VHF: Marconi
Type: argonaut 201-3560-02
Main Receiver: Marconi
Type: Apollo Ec 958
Emergency Receiver: Marconi
Type: Monitor

Radio safety equipment:

(2) lifeboat radio
Type: surveyor 610 N
(1) VHF Distress Beacon
Type: BE 369
(1) VHF Distress Receiver
Type: PD-2

Wind gauging equipment:

Maker: Laboratorium Dr.Justus Rosenhagen
Type: M157

General-alarm installation:

Initiating pushbuttons for lifeboat and fire alarm 25 bells.

CO_2-total flooding installation:

Make: Marfrig
Capacity: 200 bottles
alarm initiated when controlbox is opened. Alarms in engineroom consists of three (3) sirenes and visual signs.

Telephone and communication:

Make: L. M. Ericson
Sound powered telephone
7 terminals.

Intr. safe sound powered telephone - pumproom, engineroom:

Make: L. M. Ericson
Type: 3.702019-075

Automatic telephone:

Make: L. M. Ericson
Type: 39.5DLG1263/52/86N2
20 terminals

Intercommunication system:

Make: Gustav A. Ring.
Communication with bridge, engineroom, all cabins, messrooms etc.

Hull

Painted area: approx.
Black topsides: 10.200 m^2
Sides: From bilge keel to light load line: 8700 m^2
Flat bottom: from bilge keel to bilge keel: 11000 m^2

Masts: one (1)
Derricks: two amidships
Booms: 2 15 tons each, frame 75
1 4 tons each, frame 27
Provision crane: One 1,5 t electric port side boatdeck fr. 37.

Stearing gear:

Make: Hastie
Type: electric hydraulic, four rams

Hydraulic pumps:

Three(3) size L.P. 50 pumps
stroke 1 1/4".

Motors:

Three(3) Hugh J. Scott 115 HP
RPM 576
440/154/60 P=3

Transm :

Anschütz electric.

Anchors:

Make: Hoesch A.G. Hüttenwerke
Type: Stockless anchors
Weight: 19575 kg

Anchorchain:

Type: Flash Butt-welded steel stud. linke grade 3, size 107 mm, 6 shots of 82,5 m common links. 2 shots of 82,5 m enlarged links and open end links in one end.
1 shot of 55,0 m incl. forerunner swivel shackle.
1 shot of 27,5 m end link, enlarged link and four common links.

Stb. anchor chain 385 m or appr. 14 shots of chain of 15 F
Port anchor chain 357 m or appr. 13 shots of chain of 15 F

Anchor windlasses:
Cable lifter unit.

Make: A/S Pusnes
Type: 60 CUL, 15a
Chain diam.: 107 mm U3
Hauling cap.: 43.5 - 80 tons
Hauling speed: 12 m/min.
Steam winches for windlasses combined mooring winches:

Make: Pusnes
Type: 22-14 SW 47,15C
Cyl.diam.: 280 mm
Stroke: 350 mm
Hauling cap.: 22 ton
3 in No.
1 in No. Type: 22-14 SW 14C 47
Cyl.dia.: 280 mm
Stroke: 350 mm
Hauling cap.: 22 ton

Mooring winches:

Seven (7) hauling capacity: 25 t.
One(1) port side poop also serving as cargo winch 4 tonns boom.

Cargo winches:

Two(2) frame 75 p& s side

ELECTRIC MOTOR LIST

	volts/phase/CPS	RPM kw
Engine room supply fan Woods	440/3 /60	1170/35HP
Engine room exh.fan Woods	440/ 3 /60	1170/35HP
Main boiler FD fan (2) ASEA MF 500M	440/ 3 /60	1180-885/280-175
Aux.boiler FD fan (1) ASEA MBRF26	440/ 3 /60	1780/110
Gland steam fan Piller	440/ 3 /60	3400/0,55
Engine room exh.supply fan Woods	440/ 3 /60	1170/35 HP
Drilling machine	440/ 3 /60	700-100/1,5HP
Engine Lathe (big) ACEC	440/ 3 /60	/ 5 HP
Engine Lathe (small) Brook LS145T	440/ 3 /60	/ 1,5 HP
Fuel oil transfer pump ASEA M200L	440/ 3 /60	1150/33 HP
Fuel oil.transfer st.by pump ASEA M160-L6	440/ 3 /60	1150/15 HP
Fuel oil service pump(2) ASEA MBRF 24	440/ 3 /60	1760-585/37,5-10
Diesel oil ignition pump ASEA M 132M-2/4	440/ 3 /60	3450-1740/10-7
Lub.oil service pump (2) ASEA M225M-6	440/ 3 /60	1150/45 HP
Boosterpump L.O. Separator ASEA MT80B 19-4	440/ 3 /60	1750/1,2 HP
Main Condenser circ.pump ASEA MF500M	440/ 3 /60	590/200 HP
Atmosph.condenser circ.pump ASEA MBRF 295	440/ 3 /60	895/155 HP

Foam, Fire etx. pump	440/ 3 /60	
Air condition ccol.water pump ASEA M225 S60	440/ 3 /60	1770/57HP
Engineroom bilge pump ASEA MBRF24 MR6292	440/ 3 /60	1770/78
Engineroom bilge pump small ASEA M132 S-6	440/ 3 /60	1120/6
Bilge & Gen.serv.pump ASEA MBRF-27	440/ 3 /60	1750/165 HP
Saltw.serv.&emerg.bilgepump ASEA MBRF-25	440/ 3 /60	1770/100
Freshwater hydrophorepump ASEA M160MA-2	440/ 3 /60	3510/16
Evaporator distillatepump ASEA MT 100 LA-4	440/ 3 /60	1720/3,3
Hotwater circulating pump ASEA MT 71.B.6	440/ 3 /60	1700/0,4
Atm.condenser/boiler feed pump ASEA MBRF-27	440/ 3 /60	3570/170
Main Condesate pump (2) ASEA MBRF-25	440/ 3 /60	1750/100
Boiler filling pump ASEA MBRF-24	440/ 3 /60	1770/78
Vacuum pump ASEA M200LA	440/ 3 /60	1170/27
Main Drain pump ASEA MBRF-26	440/ 3 /60	1780/115
Aux.Drain pump ASEA M.132 SB-2	440/ 3 /60	3480/11
L.O. pump cargopump ASEA M180M	440/ 3 /60	1760/28
Ejectorpump evaporator ASEA M160 MA 42-2	440/ 3 /60	3510/16

Electric lub.oil pump for feedp. start capacity motor	230/ 1	/60	1725
Lub.oil purifier ASEA M112M28-4	440/ 3	/60	1710/6
Fuel oil suction strainer Stephan FD 0245	440/ 3	/60	1670/0,25
Fuel oil discharge strainer Stephan FD 0245	440/ 3	/60	1670/0,25

SEA VALVES & OVERBOARD DISCHARGE VALVES.

One (1) - 1000 mm Butterfly scoop inlet A201
One (1) - 1200 mm Butterfly scoop outlet A202
One (1) - 800 mm Butterfly main circ. pump suct. A203
Two (2) - 350 mm Butterfly seawater crossover suct. A204-5
Four(4) - 400 mm Butterfly lub.oil coolers inlet/outlet A207-8-9-10
One (1) - 225 mm Butterfly scrubber pump suct.
One (1) - 600 mm Butterfly atm.cond.circ. pump suct. A264
One (1) - 600 mm Butterfly alm.cond.circ.pump disch. A267
One (1) - 125 mm SDUR overboard evaporators A239
One (1) - 80 mm SDNR overboard turbogenerator A244
One (1) - 100 mm SDNR overboard dieselengine A245
One (1) - 200 mm Butterfly overboard aircondition A288
One (1) - 80 mm SDNR overboard aircondition ECR A267
One (1) - 125 mm spring loaded overboard evaporator A300
One (1) - 65 mm SDNR overboard prov.plant A307
One (1) - 50 mm SDNR overboard bilgewater separator A14
One (1) - 150 mm SDNR bilgepumpe discharge A19
One (1) - 175 mm SDNR bilge & gen. serv.pump disch. A26
One (1) - 310 mm SDNR overboard scrubber
One (1) - 25 mm Bottom blow aux.boiler overboard
One (1) - 40 mm Bottom blow main boiler overboard

IN PUMPROOM

Two (2) - 700 mm Butterfly inlet
One (1) - 500 mm Butterfly inlet/outlet
One (1) - 250 mm Butterfly outlet
One (1) - 700 mm Butterfly outlet. Hydr.oper.
One (1) - 700 mm Butterfly outlet

FOREPEAK

One (1) - 250 mm SD.angle firepump suct.