

## Rpt. 4b

Date of writing report 6-10-60 Received London Port of ROTTERDAM No. 50389  
Survey held at Alblasterdam/ Ijsselmonde No. of visits In shops 12 First date 10-9-59 Last date 16-5-60  
On vessel 32 On vessel 32 First date 18-3-60 Last date 5-10-60

## FIRST ENTRY REPORT ON INTERNAL COMBUSTION MACHINERY

No. in R.B. Name m.s. "C U T R A L C O" launched as P.S. "Gerbrandy" Gross tons 12712,49  
Owners Yacimientos Petroliferos Fisca/les Managers Port of Registry Buenos Aires  
Hull built at Alblasterdam By Messrs. Verolme United Shipyards Yard No. 633 When 1960-9  
Main Engines made at Hengelo By Messrs. Gebr. Stork N.V. Eng. No. 7530 When 1960  
Gearing made at not fitted By -  
Donkey boilers made at Amsterdam By Messrs. Thermodyne Blr. Nos. 589/590/591 When 1960-6  
Machinery installed at Ijsselmonde By Messrs. Verolme Machinefabriek When 1960-9  
Particulars of restricted service of ship, if limited for classification no restrictions  
Particulars of vegetable or similar cargo oil notation, if required none  
Is ship to be classed for navigation in ice? no Is ship intended to carry petroleum in bulk? yes  
Is refrigerating machinery fitted? yes If so, is it for cargo purposes? no Type of refrigerant Freon 12  
Is the refrigerating machinery compartment isolated from the propelling machinery space? no Is the refrigerated cargo installation intended to be classed? no

The following particulars should be given as fully and as clearly as possible. Where the answer is "No" or "None", say so! Ticks and other signs of doubtful meaning are not to be used. Where the wording is not applicable to the installation, a black line may be inserted. If the main engines have been constructed at another port and are covered by a separate report, the particulars given in that report need not be repeated below, but the port and report number should be stated.

No. of main engines one No. of propellers one Brief description of propulsion system direct reversible heavy oil 2 SC SA

## MAIN RECIPROCATING ENGINES. Licence Name and Type No. please see also Amsterdam Rpt. 23480

No. of cylinders per engine Dia. of cylinders stroke(s) 2 or 4 stroke cycle Single or double acting

Maximum approved BHP per engine 8500 at 118 RPM of engine and 118 RPM of propeller.

Corresponding MIP (For DA engines give MIP top & bottom) Maximum cylinder pressure Machinery numeral 1700

Are the cylinders arranged in Vee or other special formation? If so, number of crankshafts per engine

## TWO STROKE ENGINES. Is the engine of opposed piston type? If so, how are upper pistons connected to crankshaft?

Is the exhaust discharged through ports in the cylinders or through valve(s) in the cylinder covers? No. and type of mechanically driven scavenge pumps or blowers per engine and how driven

No. of exhaust gas driven scavenge blowers per engine Where exhaust gas driven blowers only are fitted, can the engine operate with one blower out of action?

If a stand-by or emergency pump or blower is fitted, state how driven No. of scavenge air coolers Scavenge air pressure at full power Are scavenge manifold explosion relief valves fitted?

## FOUR STROKE ENGINES. Is the engine supercharged? Are the undersides of the pistons arranged as supercharge pumps? No. of exhaust gas driven blowers per engine

No. of supercharge air coolers per engine Supercharge air pressure Can engine operate without supercharger?

## TWO &amp; FOUR STROKE ENGINES-GENERAL. No. of valves per cylinder: Fuel Inlet Exhaust Starting Safety

Material of cylinder covers Material of piston crowns Is the engine equipped to operate on heavy fuel oil?

Cooling medium for :—Cylinders Pistons Fuel valves Overall diameter of piston rod for double acting engines

Is the rod fitted with a sleeve? Is welded construction employed for: Bedplate? Frames? Entablature? Is the crankcase separated from the

underside of pistons? Is the engine of crosshead or trunk piston type? Total internal volume of crankcase No. and total area of explosion relief

devices Are flame guards or traps fitted to relief devices? Is the crankcase readily accessible? If not, must the engine be removed for

overhaul of bearings, etc? Is the engine secured directly to the tank top or to a built-up seating? direct on tanktop How is the engine started?

Can the engine be directly reversed? If not, how is reversing obtained?

Has the engine been tested working in the shop? How long at full power?

## CRANK &amp; FLYWHEEL SHAFTING. Date of approval of torsional vibration characteristics of the propelling machinery system 25-2-60 State barred speed range(s), if imposed

for working propeller none For spare propeller not supplied Is a governor fitted? Is a torsional vibration damper or detuner fitted to the shafting? no

Where positioned? Type No. of main bearings Are main bearings of ball or roller

type? Distance between inner edges of bearings in way of crank(s) Distance between centre lines of side cranks or eccentrics of opposed piston engines

Crankshaft type: Built, semi-built, solid. (State which)

Diameter of journals Diameter of crankpins Centre Breadth of webs at mid-throw Axial thickness of webs

If shrunk, radial thickness around eyeholes Are dowel pins fitted? Crankshaft material Journals Pins Minimum

Diameter of flywheel Weight Are balance weights fitted? Total weight Radius of gyration

Diameter of flywheel shaft Material Minimum approved tensile strength

Flywheel shaft: separate, integral with crankshaft, integral with thrustshaft. (State which)

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# MAIN GAS TURBINES. Name and Type No.

No. of sets of turbines ..... Open or closed cycle ..... BHP per set ..... at ..... RPM of output shaft .....

How is drive transmitted to propeller shaft? .....

ARRANGEMENT OF TURBINES. HP drives ..... at ..... RPM HP gas inlet temperature ..... pressure .....

(A small diagram should be attached showing gas cycle.)

IP drives ..... at ..... RPM IP gas inlet temperature ..... pressure .....

LP drives ..... at ..... RPM LP gas inlet temperature ..... pressure .....

No. of air compressors per set ..... Centrifugal or axial flow type? ..... Material of turbine blades ..... Material of

compressor blades ..... No. of air coolers per set ..... No. of heat exchangers per set ..... How are turbines started? .....

How is reversing effected? ..... Are the turbines operated in conjunction with free piston gas generators? .....

Total No. of free piston gas generators ..... Diameter of working pistons ..... Diameter of compressor pistons ..... No. of double strokes per

minute at full power ..... Gas delivery pressure ..... Gas delivery temperature ..... Have the turbines and attached equipment been tested working

in the shop? ..... How long at full power? .....

## ELECTRIC PROPULSION (Reciprocating engines or gas turbines. Electrical particulars to be reported on Form 4d.)

No. of generators ..... KW per generator ..... at ..... RPM AC or DC? ..... Position .....

No. of propulsion motors ..... SHP per motor ..... at ..... RPM Position .....

How is power obtained for excitation of generators? ..... Motors? .....

## REDUCTION GEARING (Reciprocating engines or gas turbines. A small line sketch should be attached showing arrangement of gearing.)

Is gearing of single or double helical type? ..... If single, position of gear thrust bearing ..... Is gearing of epicyclic type? .....

PCD of pinions: First reduction ..... Second reduction ..... PCD of wheels: First reduction ..... Main .....

Material of pinions ..... Tensile strength ..... Material of wheel rims ..... Tensile strength .....

Are gear teeth surface hardened? ..... How are teeth finished? ..... Diameter of pinion journals ..... Wheel shaft

journals ..... Are the wheels of welded construction? ..... Is gearcase of welded construction? ..... Has the wheel/gearcase been heat treated on completion

of welding? ..... Where is the propeller thrust bearing located? ..... Are gear bearings of ball or roller type? .....

## CLUTCHES, FLEXIBLE COUPLINGS, ETC. If a clutch or other flexible connection is fitted between engine/turbine and gearing or between engine and line shafting give brief

description and, for clutches, state how operated. ....

Can the main engine be used for purposes other than propulsion when declutched? ..... If so, what? .....

STRAIGHT SHAFTING. Diameter of thrustshaft 480 mm ..... Material ..... Minimum approved tensile strength .....

Shaft separate or integral with crank or wheel shaft? ..... Diameter of intermediate shaft 388 mm ..... Material S.M. steel .....

Minimum approved tensile strength 57 kg/mm<sup>2</sup> ..... Diameter of screwshaft cone at large end 446 mm ..... Is screwshaft fitted with a continuous liner? yes .....

Diameter of tube shaft. (If these are separate shafts) not fitted ..... Is tube shaft fitted with a continuous liner in way of stern tube ..... Thickness of screw/tube shaft liner at

bearings 23 mm ..... Thickness between bearings 18 mm ..... Material of screw/tube shaft S.M. steel ..... Minimum approved tensile strength 57 kg/mm<sup>2</sup> .....

Is an approved oil gland fitted? no ..... If so, state type ..... Length of bearing next to and supporting propeller 1940 mm .....

Material of bearing Lignum vitae ..... In multiple screw vessels is the liner between stern tube and A bracket continuous? ..... If not, is the exposed length of shafting between

liners readily visible in dry dock? .....

PROPELLER. Diameter of propeller 5300 mm ..... Pitch 4772 mm ..... Built up or solid solid ..... Total developed surface 47.4 % .....

No. of blades four ..... Blade thickness at top of root fillet 127 mm ..... Blade material bronze ..... Moment of inertia of dry propeller 51000 kg/m<sup>2</sup> .....

If propeller is of special design, state type no special design ..... Is propeller of reversible pitch type? no ..... If so, is it of approved design? .....

State method of control ..... Material of spare propeller none ..... Moment of inertia .....

AIR COMPRESSORS & RECEIVERS. No. of main engine driven compressors per engine none ..... Can they be declutched? .....

No. of independently driven air compressors. (State capacity, prime mover, position in ship, and Port and No. of certificate) 2 main Reavell clutched to aux. engines. .....

P.A.S. forw. 180 m<sup>3</sup>/h Ips. Cert. 15247. 1 aux. hand compressor starboard forward. .....

No. of starting air receivers. (Main and Aux. State capacity of each, position in ship and Port and No. of Certificate) 2 Main on tweendeck Starb. 4.8 m<sup>3</sup> each. .....

Gron. Cert. 60/152. 1 aux. 300 l Port forward lino. cert. C. 60/209 .....

How are receivers first charged? hand driven compressor ..... Maximum working pressure of starting air system 30 kg/cm<sup>2</sup> ..... Are the safety devices in

accordance with the Rules? yes ..... Has the starting of the main engines been tested and found satisfactory? yes .....

COOLERS. No. of main engine fresh water coolers 2 ..... No. of main engine lubricating oil coolers 2 .....

OIL FUEL TANKS. No. and position of oil fuel settling or service tanks not forming part of hull structure 2, 4 Starb. forw. 1 port aft main deck level .....

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MAIN ENGINE DRIVEN PUMPS (No. and Purpose) none .....

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Service for which each pump is connected to be marked thus X

## INDEPENDENT PUMPS

Name below essential pumps, state position and how driven. Give capacity of bilge pumps.

	SUCTION							DELIVERY						
	Bilge Main	Bilge Direct	Ballast Main	Oil Fuel	Fresh Water Cooling	Sea	Feed Tanks	Lub. Oil	Boiler Feed	Salt Water Cooling	Fresh Water Cooling	Oil Fuel Tanks	Fire Main	Lub. Oil
2 & 400 m <sup>3</sup> /h 1 & 150 m <sup>3</sup> /h salt coolingw. pumps. Port		X				X				X				X
2 fresh watercooling pump P.					X					X				
3 lubr. oil pumps P.F.								X					X	X
1 ballast pump P A 190 m <sup>3</sup> /h	X	X	X			X							X	X
1 gen.serv. S A 190 m <sup>3</sup> /h	X					X							X	X
1 steam bilgep. S F 100 m <sup>3</sup> /h	X	X				X								X
3 fuel transferp. St.F.				X								X		
harbourset fresh saltw.cool.PA					X	X				X	X			
2 steam boilerfeedp. PA						X	X		X					
1 steam stripping bilgep. bilges mainpump. 100 m <sup>3</sup> /h						X								X
1 steam bilge ballast 50 m <sup>3</sup> /h bilges forw.						X								X
1 steam fueltransfer 50 m <sup>3</sup> /h				X								X		
1 diesel driven emergency fuelpump														

BILGE SUCTIONS. No. and size in each hold, deep tank or pump room on FP deck 3 & 1 1/2" dry cargo hold 2 & 2" forw. pumproom 2 & 2"

Main pumproom 2 & 3" ✓

No. and size connected to main bilge line in main engine room 9 & 4" ✓

In aux. engine room not fitted ..... Size and position of direct bilge suction in machinery spaces 1/2" 2" 3" 4" 5" 6" ✓

Size and position of emergency bilge suction in machinery spaces PF & 12" ✓

Is the bilge or ballast system fitted with means for separating oily water on the overboard discharge side? yes ..... Do the piping arrangements comply with the Rules including

special requirements for ships carrying petroleum in bulk, cargo oil or classed for navigation in ice? (strike out words not applicable). yes .....

## STEAM & OIL ENGINE AUXILIARIES

Position of each	Type	Made by	Port and No. of Rpt. or Cert.	Driven Machinery (For electric generators, state output)
Port forward				Gen. 200 KW + compressor
Centre forward	A.R. 216	Messrs. Stork	Ams. Rpt. 23359	Generator 200 KW
Starb. forward		"	"	Gen. 200 KW + compressor
Starb. aft	2 cyl. compound steam	Ashworth & Parker	Burry (Lancs) 11-5-55	Generator 60 KW.
In forw. pump r.	R.D.W.I.	Messrs. Coventry		Emergency firepump & 40 m <sup>3</sup> /h x 70 m.
		Victor		

Is electric current used for essential services at sea? yes ..... If so, state the minimum No. and capacity of generators required in order that the ship may operate

at sea one of 200 KW ..... Is an electric generator driven by Main Engine? no .....

STEAM INSTALLATION. No. of donkey boilers burning oil fuel two ..... W.P. 200 lbs/sq.in. Type watertube .....

Position tweendeck aft .....

Is a superheater fitted? no ..... Are these boilers also heated by exhaust gas? no ..... No. of donkey boilers heated by exhaust gas only? one ..... W.P. 200 lbs/sq.in.

Type Multitubular ..... Position boatdeck level in funnel ..... Can the exhaust heated boilers deliver steam directly to

the steam range or do they operate only as economisers in conjunction with oil fired boilers? can deliver direct to range ..... Port and No. of report on donkey

boilers Ams. 23442/23568 ..... Is steam essential for operation of the ship at sea? yes ..... Are any steam pipes over 3 ins. bore? yes ..... If so, what is their

material? steel ..... For oil fired boilers is the arrangement of pipes, valves, controls, etc., in accordance with the Rules? yes ..... No. of oil burning pressure

units one ..... No. of steam condensers one ..... No. of Evaporators none .....

STEERING GEAR. (State No. and Type of Steam Engines, Electric Motors, Hydraulic Pumps and other particulars) electr hydraulic 4 Ram Hastie with 2 VSC .....

pumps .....

Have the Rule Requirements for fire extinguishing arrangements been complied with? yes ..... Brief description of arrangements steam in E.R. & B.R. 1 & 45 L. foam CO 2

transportable & 13 dry powder 12 kg. extinguishers. 5 hose connections with hoses and spray nozzles. 2 sand boxes ..... a 1 m in B.R.

Has the spare gear required by the Rules been supplied? yes ..... Has all the machinery been tried under full working conditions and found satisfactory? yes ..... Date and duration of full-

power sea trials of main engines 13-14-15/9/60 ..... Does this machinery installation contain any features of a novel or experimental nature? (Give particulars)

no novel features .....

The foregoing description of the main engine and installation is correct and the particulars are as approved for torsional vibration characteristics (strike out words not applicable).



GENERAL REMARKS

State if the machinery has been constructed and/or installed under special survey in accordance with the Rules, approved plans and Secretary's letters. State quality of materials and workmanship and give recommendations for classification, including any special notation to be assigned. Where existing machinery is submitted for classification the circumstances should be explained as fully as possible.

The machinery has been installed on board under Special Survey in accordance with the Society's Rules, approved plans and Secretarial letters. All materials used have been tested as required and the workmanship found good throughout.

Full power and manoeuvring trials carried out and found satisfactory.

The boilers examined under full pressure, safety valves adjusted and accumulation test carried out on oilfired boilers in conjunction with exhaustgas boiler with engine running full load and found in order.

Torsional diagrams have been taken and will be handed in when received from engine builders (now enclosed)

The installation merits in our opinion the approval of the committee to be entered in the Society's Register Book with record + L.M.C. 9-60 and notations "C L " "Oil Engine "Mach.Aft" 3 Aux (2 WT) Boilers 200 lbs.

*P.F. Willemse*  
Engineer Surveyor to Lloyd's Register of Shipping.

P.F. Willemse and J.F. Vrouwes

PARTICULARS OF IDENTIFICATION MARKS (Including Port of origin) of important Forgings and Castings. (Copies of certificates should be forwarded with report.)

RODS

Please see Amsterdam Report 23359

CRANKSHAFT OR ROTORSHAFT

FLYWHEEL SHAFT

THRUSTSHAFT

GEARING not fitted

INTERMEDIATE SHAFTS Lloyd's Rott. No. 171 & 172. HD/JFV 16-5-60

SCREW AND TUBE SHAFTS Lloyd's Rot. No. 170 HD/JFV 13-4-60

PROPELLERS Lloyd's Rot. No. 8458 A.v.H. 15-3-60

OTHER IMPORTANT ITEMS

Is the installation a duplicate of a previous case? no

If so, state name of vessel

Date of approval of plans for crankshaft

Straight shafting 17-12-59

Gearing

Clutch

Separate oil fuel tanks 11-12-59

Pumping arrangements 3-11-59

Oil fuel arrangements 18-5-60

Cargo oil pumping arrangements 2-10-59

Air receivers

Donkey boilers

Dates of examination of principal parts:-

Fitting of stern tube 6-5-60

Fitting of propeller 11-5-60

Completion of sea connections 11-5-60

Alignment of crankshaft in main bearings 7-7-60

Engine checks & bolts 7-7-60

Alignment of gearing

Alignment of straight shafting 13-6-60

Testing of pumping arrangements 31-8-60

Oil fuel lines 18-7-60

Donkey boiler supports 18-3-60

Steering machinery 18-8-60

Windlass 13-9-60

Date of Committee FRIDAY - 2 DEC 1960

Special Survey Fee Installation Fl. 1715, 75

Decision See Rpt. 1.

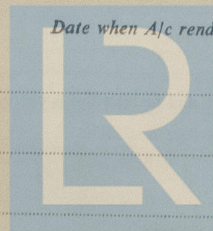
Forgings & Castings Fl. 171, 50

Expenses

28650

Date when A/c rendered

28 OCT. 1960



Lloyd's Register  
Foundation