

Rpt. 4a.

# Report on Steam Turbine Machinery.

No. 133067

Date of writing Report 9-5-1951 When handed in at Local Office 10-5-1951 Port of Liverpool Received at London Office 6 JUN 1951  
 No. in Survey held at Birkenhead Date, First Survey 16/6/49 Last Survey 30-4-1951  
 Reg. Book on the single screw tug "GENERAL PUEYREDON" (Number of Visits 318) Tons Gross 12741 Net 7396  
 Built at Birkenhead By whom built Cammell, Laird & Co. Ltd Yard No. 1204 When built 1951  
 Engines made at Birkenhead By whom made Cammell, Laird & Co. Ltd Engine No. 1204 When made 1951  
 Boilers made at Birkenhead By whom made Cammell, Laird & Co. Ltd Boiler No. 1204 When made 1951  
 Shaft Horse Power at Full Power MAX: 6800 Service: 6200 Owners Yacimientos Petroliferos Fiscales Port belonging to Buenos Aires  
 Nom. Horse Power as per Rule 1580 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes  
 Trade for which Vessel is intended open sea

## STEAM TURBINE ENGINES, &c.—Description of Engines. Double Reduction Impulse Reaction.

No. of Turbines Ahead 2 Direct coupled, single reduction geared to one propelling shafts. No. of primary pinions to each set of reduction gearing 2  
 Astern 1 double reduction geared  
 direct coupled to Alternating Current Generator phase periods per second rated Kilowatts Volts at revolutions per minute;  
 for supplying power for driving Propelling Motors, Type rated Kilowatts Volts at revolutions per minute. Direct coupled, single or double reduction geared to propelling shafts.

TURBINE	H. P.	I. P.	L. P.	ASTERN.
BLADING.				
Impulse Blading	No. of rows 11	✓	1	Two 3 row wheels
Reaction Blading	No. of stages 1	✓	15	✓
	No. of rows in each stage	✓	3 rows & 1 stage 1 row in 14 stages	✓

Shaft Horse Power at each turbine H.P. 3600/3530 I.P. 3200/2670 L.P. 3363/3257  
 Rotor Shaft diameter at journals H.P. 4 1/2" hole I.P. 7 1/2" hole L.P. 7 1/2" hole  
 Distance between centres of pinion and wheel faces and the centre of the adjacent bearings  
 Flexible Pinion 1st 6 1/4" Pinion Shafts, diameter at bearings External 6 1/2" Internal 2" 2nd 7 5/8" diameter at bottom of pinion teeth  
 Wheel Shafts, diameter at bearings 1st 7 1/2" main 18" diameter at wheel shroud, 1st 4-3 1/2" main 11-3 1/8" Generator Shaft, diameter at bearings  
 Intermediate Shafts, diameter as per rule 15.85" as fitted 16" Thrust Shaft, diameter at collars as per rule 17.085" as fitted 17 3/4"  
 Tube Shaft, diameter as per rule 8.23" as fitted 8.75" Screw Shaft, diameter as per rule 8.23" as fitted 8.75"  
 Bronze Liners, thickness in way of bushes as per rule 8.23" as fitted 8.75" Thickness between bushes as per rule 7.18" as fitted 7.18"  
 propeller boss Yes If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner  
 If the liner does not fit tightly at the part between the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive  
 If two liners are fitted, is the shaft lapped or protected between the liners Is an approved Oil Gland or other appliance fitted at the after end of the tube shaft  
 Propeller, diameter 18.75" Pitch 13.50" No. of Blades 4 State whether Moveable No Total Developed Surface 133 square feet.

If Single Screw, are arrangements made so that steam can be led direct to the L.P. Turbine Yes Can the H.P. Turbines exhaust direct to the  
 Condenser Yes No. of Turbines fitted with astern wheels one Feed Pumps No. and size 2-65000-84600 lb/hr each  
 Pumps connected to the Main Bilge Line No. and size 2 @ 150 T/hr, 1 @ 300 T/hr How driven Elec. motor  
 Ballast Pumps, No. and size 1 @ 300 T/hr Lubricating Oil Pumps, including Spare Pump, No. and size 2 @ 11500 gal/hr each  
 Are two independent means arranged for circulating water through the Oil Cooler Yes Suctions, connected both to Main Bilge Pumps and Auxiliary  
 Bilge Pumps, No. and size:—In Engine and Boiler Room 1 @ 6" 3 @ 3 1/2" In Pump Room 1 @ 2 1/2" (main) 2 @ 2 1/2" (auxiliary)  
 In Holds, &c. 2 @ 2", 1 @ 2 1/2" (Land pump)

Main Water Circulating Pump Direct Bilge Suctions, No. and size 1 @ 16" Independent Power Pump Direct Suctions to the Engine Room  
 Bilges, No. and size 1 @ 9", 1 @ 6", 1 @ 4" Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes Yes  
 Are the Bilge Suctions in the Machinery Space led from easily accessible mud-boxes, placed above the level of the working floor, with straight tail pipes to the bilges Yes  
 Are all Sea Connections fitted direct on the skin of the ship some on boxes Are they fitted with Valves or Cocks Yes  
 Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates Yes Are the Overboard Discharges above or below the deep water line  
 Are they each fitted with a Discharge Valve always accessible on the plating of the vessel Yes Are the Blow Off Cocks fitted with a spigot and brass covering plate Yes What pipes pass through the bunkers none How are they protected  
 What pipes pass through the deep tanks none Have they been tested as per rule Yes  
 Are all Pipes, Cocks, Valves and Pumps in connection with the machinery and all boiler mountings accessible at all times Yes  
 Is the arrangement of valves and their connections such as to prevent the possibility of water passing from the sea or from water tanks into the cargo or machinery spaces, or from one compartment to another Yes Is the Shaft Tunnel watertight Yes Is it fitted with a watertight door worked from Yes

BOILERS, &c.—(Letter for record S) Total Heating Surface of Boilers 10,938 sq. ft. superheaters 1680 sq. ft.  
 Is Forced Draft fitted Yes No. and Description of Boilers 2 B+W Sectional Header Working Pressure 495 lb (design) 480 lb (actual)  
 Is a Report on Main Boilers now forwarded? Yes



Is a Donkey Boiler fitted? yes, Two ✓ If so, is a report now forwarded? yes ✓  
Is the donkey boiler intended to be used for domestic purposes only? No. Cargo pumping & tank testing.  
Plans. Are approved plans forwarded herewith for Shafting 25-8-49 Main Boilers 22-6-49 Auxiliary Boilers ✓ Donkey Boilers 18-8-48  
(If not, state date of approval) 10-6-49, 28-9-49  
Superheaters Slaps General Pumping Arrangements 26-7-49, 25-8-49 Oil Fuel Burning Arrangements 14-6-50  
Geared turbines situated aft. Have torsional vibration characteristics of system been approved yes Date of approval 15-3-49

SPARE GEAR.

Has the spare gear required by the Rules been supplied yes ✓

State the principal additional spare gear supplied.

The foregoing is a correct description,

E. Stewart CAMMELL LAIRD AND COMPANY, LTD. Manufacturer.  
for ENGINEERING MANAGER

Dates of Survey while building During progress of work in shops - - 16/6/49 to 30/4/51  
During erection on board vessel - - -  
Total No. of visits 318

Dates of Examination of principal parts—Casings 20-9-49 Rotors 10-10-50 Blading 10-10-50 Gearing 27-4-51  
Wheel shaft 18-9-50 Thrust shaft ✓ Intermediate shafts 16-12-50 Tube shaft ✓ Screw shaft 13-11-50  
Propeller 25-11-50 Stern tube 25-11-50 Engine and boiler seatings 5-12-50 Engine holding down bolts 13-2-51  
Completion of fitting sea connections 5-12-50 Completion of pumping arrangements 27-4-51 Boilers fixed 13-2-51 Engines tried under steam 26/28-4-51  
Main boiler safety valves adjusted 17-4-51 Thickness of adjusting washers Port: Sat. 1 3/32, 1 1/32, Super. 7/16. Starb: Sat. 7/16 1/32, Super. 7/16  
Rotor shaft, Material and tensile strength Steel 34-38 T/0" Identification Mark HP80902, LP80907  
Flexible Pinion Shaft, Material and tensile strength Steel 35-37 T/0" Identification Mark HP81083, LP81084  
Pinion shaft, Material and tensile strength High Carbon Steel 40 T/0" Identification Mark HP80883, LP80887

Chemical analysis ✓  
If Pinion Shafts are made of special steel state date of approval of chemical analysis, physical properties and heat treatment ✓

1st Reduction Wheel Shaft, Material and tensile strength Steel 35 T/0" Identification Mark HP81091, LP81092

Wheel shaft, Material Steel Identification Mark 81078 Thrust shaft, Material ✓ Identification Mark ✓

Intermediate shafts, Material Steel Identification Marks 84925, 84929, 84933 Tube shaft, Material ✓ Identification Marks ✓

Screw shaft, Material Steel Identification Marks 84922 Steam Pipes, Material Steel Test pressure 1440 lb.

Date of test 1-2-51 & following Is an installation fitted for burning oil fuel yes ✓

Is the flash point of the oil to be used over 150°F. yes ✓ Have the requirements of the Rules for the use of oil as fuel been complied with yes ✓

Is the vessel (not being an oil tanker) fitted for carrying oil as cargo Tanker ✓ If so, have the requirements of the Rules been complied with ✓

If the notation for ice strengthening is desired, state whether the requirements in this respect have been complied with ✓

Is this machinery a duplicate of a previous case yes If so, state name of vessel General San Martin

General Remarks. (State quality of workmanship, opinions as to class, &c.) This machinery has been built under special survey in accordance with the approved Plans, the Society's Rules and the Secretary's letter. The materials and workmanship are good. It has been properly installed in the vessel and tried under working conditions with satisfactory results.  
It is eligible, in my opinion, to be classed with the record \* LMC 4.51. C.L.  
Fitted for oil fuel 4.51 flash point above 150°F. W.T.B.

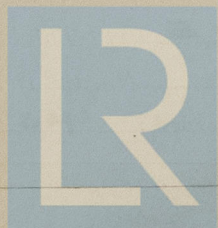
The amount of Entry Fee ... £ ✓ : ✓ : When applied for. 29 MAY 1951  
Special 333 0  
Less Slaps for 7/8 Boiler fee 52 0  
Donkey Boiler Fee ... £ 281 0  
E.W. Gear Case 73 6  
Travelling Expenses (if any) £ 7 5 : When received. 19

Committee's Minute LIVERPOOL 5-5 JUN 1951

Assigned + LMC 4.51 C.L.

W.T.B.

G. Penning  
Engineer Surveyor to Lloyd's Register of Shipping.



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