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Liverpool F.E. RPT No. 132467



GENERATING

Report on Steam/Turbine Machinery.

No. 121259

NOV 1950

pt. 4a.

D.O.

Date of writing Report 6 Nov 1950 When handed in at Local Office 7 Nov 1950 Port of LONDON Received at London Office 28 FEB 1951

No. in Survey held at LONDON Date, First Survey 27 June 1950 Last Survey 13 October 1950

Reg. Book opening in on the single screw turbine "GENERAL SAN MARTIN" (Number of Visits 7)

Tons { Gross 12759 Net 7405

Built at LIVERPOOL By whom built CAMELL LAIRD & CO LTD Yard No. 1203 When built

Engines made at PETERBOROUGH By whom made PETER BROTHERHOOD & CO Engine No. 13288 A When made 9/50

Boilers made at By whom made Boiler No. When made

Shaft Horse Power at Full Power 250 KW (335 SHP) Owners Guinness Peter and Francis Port belonging to Guinness

Nom. Horse Power as per Rule Is Refrigerating Machinery fitted for cargo purposes to Is Electric Light fitted yes

Trade for which Vessel is intended Open Sea

STEAM TURBINE ENGINES, &c.—Description of Engines 15" 7 STAGE CURTIS x 6 RATEAU IMPULSE TYPE

No. of Turbines Ahead ONE Direct coupled, single reduction geared to propelling shafts. No. of primary pinions to each set of reduction gearing ONE

Astern double reduction geared

direct coupled to Alternating Current Generator phase periods per second rated 250 Kilowatts 220 Volts at 1200 revolutions per minute;

for supplying power for driving Propelling Motors, Type Direct Current Generator

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	H. P.			I. P.			L. P.			ASTERN.		
	HEIGHT OF BLADES.	DIAMETER AT TIP.	NO. OF ROWS.	HEIGHT OF BLADES.	DIAMETER AT TIP.	NO. OF ROWS.	HEIGHT OF BLADES.	DIAMETER AT TIP.	NO. OF ROWS.	HEIGHT OF BLADES.	DIAMETER AT TIP.	NO. OF ROWS.
1st Expansion	62"	15.495"	1.									
2nd	1.165"	16.165"	1.									
3rd	1.000"	16.000"	1.									
4th	1.05"	16.05"	1.									
5th	1.15"	16.15"	1.									
6th	1.3"	16.3"	1.									
7th	2.09"	17.09"	1.									
8th	2.93"	18.68"	1.									
9th												
10th												
11th												
12th												

Shaft Horse Power at each turbine H.P. 250 KW. 3400W

I.P. L.P. Revolutions per minute, at full power, of each Turbine Shaft H.P. 7500 1st reduction wheel 1200

I.P. L.P. main shaft

Rotor Shaft diameter at journals H.P. 2 5/8" Pitch Circle Diameter 1st pinion 3.83676" 1st reduction wheel 24.1574" Width of Face 1st reduction wheel 7.5"

I.P. L.P. 2nd pinion main wheel main wheel

Distance between centres of pinion and wheel faces and the centre of the adjacent bearings 1st pinion 6 3/4" 1st reduction wheel 7 1/2"

2nd pinion main wheel

Flexible Pinion Shafts, diameter at bearings External 1st 4 1/8" 2nd diameter at bottom of pinion teeth 1st 3.61416"

Internal 1st 3" 2nd

Wheel Shafts, diameter at bearings 1st 3 1/2" & 4 1/2" diameter at wheel shroud, 1st 24.8174" Generator Shaft, diameter at bearings 22.00" 1/2"

main Propelling Motor Shaft, diameter at bearings

Intermediate Shafts, diameter as per rule as fitted Thrust Shaft, diameter at collars as per rule as fitted

Tube Shaft, diameter as per rule as fitted Screw Shaft, diameter as per rule as fitted

Is the tube screw shaft fitted with a continuous liner

Bronze Liners, thickness in way of bushes as per rule as fitted Thickness between bushes as per rule as fitted

Is the after end of the liner made watertight in the propeller boss

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

If so, state type Length of Bearing in Stern Bush next to and supporting propeller

Propeller, diameter Pitch No. of Bades State whether Moveable Total Developed Surface square feet

If Single Screw, are arrangements made so that steam can be led direct to the L.P. Turbine Can the H.P. or I.P. Turbines exhaust direct to the

Condenser No. of Turbines fitted with astern wheels Feed Pumps No. and size How driven

Pumps connected to the Main Bilge Line No. and size How driven

Ballast Pumps, No. and size Lubricating Oil Pumps, including Spare Pump, No. and size 16.6 G.P.M. 3.5 H.P. 2" P.C.

Are two independent means arranged for circulating water through the Oil Cooler Suctions, connected both to Main Bilge Pumps and Auxiliary

Bilge Pumps, No. and size:—In Engine and Boiler Room In Pump Room

In Holds, &c.

Main Water Circulating Pump Direct Bilge Suctions, No. and size Independent Power Pump Direct Suctions to the Engine Room

Bilges, No. and size Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes

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

Are all Sea Connections fitted direct on the skin of the ship Are they fitted with Valves or Cocks

Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates 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 Are the Blow Off Cocks fitted with a spigot and brass

covering plate What pipes pass through the bunkers How are they protected

What pipes pass through the deep tanks Have they been tested as per rule

Are all Pipes, Cocks, Valves and Pumps in connection with the machinery and all boiler mountings accessible at all times

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 Is the Shaft Tunnel watertight Is it fitted with a watertight door worked from

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008786 - 008788 - 0095

BOILERS, &c.—(Letter for record.....) Total Heating Surface of Boilers.....
 Is Forced Draft fitted..... No. and Description of Boilers..... Working Pressure.....
 Is a Report on Main Boilers now forwarded?.....
 Is { a Donkey } Boiler fitted?..... If so, is a report now forwarded?.....
 { an Auxiliary }
 Is the donkey boiler intended to be used for domestic purposes only.....
 Plans. Are approved plans forwarded herewith for Shafting..... Main Boilers..... Auxiliary Boilers..... Donkey Boilers.....
 (If not, state date of approval)
 Superheaters..... General Pumping Arrangements..... Oil Fuel Burning Arrangements.....

SPARE GEAR.

Has the spare gear required by the Rules been supplied..... **YES.**
 State the principal additional spare gear supplied.....
 1 SET GENERATOR BRCS. 1 SET TURBINE BEARINGS,
 1 SET MICHELL THRUST PADS. 1 THROTTLE VALVE & SPINDLE. 1 GOVERNOR COMPLETE.
 1 SET LABYRINTH PACKING. 1 EV SPINDLE & SEAT. 1 SET OF SPRINGS. 1 SET OIL CATCHERS.
 2 SETS CARBON BRUSHES. 1 LINE BRUSH HOLDERS. 1 ARMATURE* 1 SET FIELD COILS*
 1 SET INTERPOLE COILS*
 * DEPOT SPARES:- FOR 2 SHIPS.

For PETER BROTHERHOOD LTD.

S. J. Bellamy
 DIRECTOR

The foregoing is a correct description,

Dates of Survey while building
 During progress of work in shops - - - A 28.6.50. B 27.6.50. 30.6.50.
 During erection on board vessel - - - A 22.9.50. 26.9.50. B 10.10.50. 13.10.50.
 Total No. of visits 7 (In shops)
 Dates of Examination of principal parts—Casings 26.9.50 A 13.10.50 B Rotors 26.9.50 A 13.10.50 B Blading 26.9.50 A 13.10.50 B Gearing 26.9.50 A 13.10.50 B
 Wheel shaft 13.10.50 B Thrust shaft..... Intermediate shafts..... Tube shaft..... Screw shaft.....
 Propeller..... Stern tube..... Engine and boiler seatings..... Engine holding down bolts.....
 Completion of fitting sea connections..... Completion of pumping arrangements..... Boilers fixed..... Engines tried under steam.....
 Main boiler safety valves adjusted..... Thickness of adjusting washers.....
 Rotor shaft, Material and tensile strength FORGED STEEL. 13288A U.T.S. 54.0 13288B 52.6 Identification Mark "W.H." 55178 & 55061.
 Flexible Pinion Shaft, Material and tensile strength..... Identification Mark.....
 Pinion shaft, Material and tensile strength FORGED STEEL. U.T.S. 49.2 48.4 Identification Mark "ES" 1608, 1659.
 1st Reduction Wheel Shaft, Material and tensile strength FORGED STEEL. U.T.S. 35.6 36.0 Identification Mark "ES" 1582, 1583.
 Wheel shaft, Material..... Identification Mark..... Thrust shaft, Material..... Identification Mark.....
 Intermediate shafts, Material..... Identification Marks..... Tube shaft, Material..... Identification Marks.....
 Screw shaft, Material..... Identification Marks..... Steam Pipes, Material..... Test pressure.....
 Date of test 13.10.50 22.9.50 Is an installation fitted for burning oil fuel.....
 Is the flash point of the oil to be used over 150°F..... Have the requirements of the Rules for the use of oil as fuel been complied with.....
 Is the vessel (not being an oil tanker) fitted for carrying oil as cargo..... 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..... If so, state name of vessel.....

General Remarks. (State quality of workmanship, opinions as to class, &c.) These two Turbo-Generating Engines have been built under survey in accordance with approved plans and the requirements of the Rules. Steel used in their manufacture has been made at works approved by the Committee and under the supervision of the Society's Surveyors. The workmanship is satisfactory and the Engines are, in my opinion eligible to be installed in a vessel classed with the Society.
 Satisfactory running tests and governor trials were witnessed at the maker's works of both Engines coupled to their generators.
 Engine No. 13288A is coupled to Generator No. 41770 } Made by The Sunderland
 " " 13288B " " " 41769 } Forge and Eng. Co. Ltd.

The amount of Entry Fee ... £ : : When applied for.
 Special ... £ 22 : 8 : 0 8 Nov. 1950
 Donkey Boiler Fee ... £ : : When received.
 Travelling Expenses (if any) £ 5 : 5 : 0 19

J. B. Smail
 Engineer Surveyor to Lloyd's Register of Shipping.
 These generator sets have been properly installed in the vessel, & tried under working conditions with satisfactory results.

Certificate (if required) to be sent to the Surveyors are requested not to write on or below the space for Committee's Minute.

Committee's Minute..... LIVERPOOL 27 FEB 1951
 Assigned..... See Minute on Liverpool H. Mch. Dept

