

Hub

RETAIN

No. 107460

REPORT ON STEAM TURBINE MACHINERY

Received at London Office 22 JUL 1936 LIVERPOOL

20 JUL 1936

Date of writing Report 19 When handed in at Local Office 19 Port of Birkenhead Date, First Survey 15/11/35 Last Survey 3/7/1936

No. in Survey held at Reg. Book. on the S.S. 'City of Benares' Built at Glasgow By whom built Barclay Curle & Co. Yard No. 656 When built 1936 Engines made at Birkenhead By whom made Cammell Laird & Co. Engine No. 2193 When made 1936 Boilers made at Overland 7260 By whom made Barclay Curle & Co. Boiler No. 656 When made 1936 Shaft Horse Power at Full Power 6000 (overload 7200) Owners Ellerman Papayanni Line Port belonging to Glasgow Nom. Horse Power as per Rule 1390 Is Refrigerating Machinery fitted for cargo purposes Is Electric Light fitted

STEAM TURBINE ENGINES, &c.—Description of Engines Single Reduc. Gear Turbine No. of Turbines Ahead three Astern two Direct coupled, single or double reduction geared to one propelling shafts. No. of primary pinions to each set of reduction gearing 3 direct coupled to phase periods per second, Alternating Current Generator rated Kilowatts Volts at revolutions per minute; for supplying power for driving Propelling Motors. Propelling Motors, Type rated Kilowatts Volts at revolutions per minute. Direct coupled, single or double reduction geared to propelling shafts.

PARTICULARS OF TURBINE BLADING.

Table with columns for H.P., I.P., L.P., and ASTERN. Rows include 1st Expansion, 2nd, 3rd, 4th, 5th, 6th, 7th, and 8th. Includes handwritten notes like 'Manganese Copper' and 'Brass'.

Shaft Horse Power at each turbine 2200 Revolutions per minute, at full power, of each Turbine Shaft 1814 main shaft 92 Pitch Circle Diameter, 1st pinion 8.355 2nd pinion 1st reduction wheel main wheel 164.75 Width of Face, 1st reduction wheel main wheel 42 Distance between centres of pinion and wheel faces and the centre of the adjacent bearings, 1st pinion 17 3/4 2nd pinion 1st reduction wheel main wheel 3-6 1/4 Flexible Pinion Shafts, diameter 1st 2nd Pinion Shafts, diameter at bearings External 1st 7 1/4 2nd 13 1/4 diameter at bottom of teeth of pinion 1st 8.7789 2nd Wheel Shafts, diameter at bearings, 1st main 21 diameter at wheel shroud, 1st main 13-3 7/8 Generator Shafts, diameter at bearings Propelling Motor Shafts, diameter at bearings

Main Shafting, diameter of Tunnel Shafting as per rule as fitted diameter of Thrust Shafting as per rule as fitted diameter of Screw Shaft as per rule as fitted Is the screw shaft fitted with a continuous liner the whole length of the stern tube Is the after end of the liner made watertight in the propeller boss If the liner is in more than one length are the joints burned 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 appliance fitted at the after end of the shaft to permit of it being efficiently lubricated Length of Stern Bush Diameter of Propeller Pitch of Propeller No. of Blades State whether Moveable Total Surface square feet. If Single Screw, are arrangements made so that steam can be led direct to the L.P. Turbine, and either the H.P. or L.P. Turbine can exhaust direct to the Condenser No. of Turbines fitted with astern wheels two Total number of power driven Main and Auxiliary Pumps No. and size of Feed Pumps How driven No. and size of Pumps connected to the Main Bilge Line How driven No. and size of Ballast Pumps No. and size of Lubricating Oil Pumps, including Spare Pump two - 12" dia x 24" stroke Are two independent means arranged for circulating water through the Oil Cooler No. and size of suction connected to both Main Bilge Pumps and Auxiliary Bilge Pumps;—In Engine and Boiler Room and in Holds, &c. No. and size of Main Water Circulating Pump Bilge Suctions No. and size of Donkey Pump Direct Suctions to the Engine Room Bilges 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 connections with the sea direct on the skin of the ship Are they Valves or Cocks Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates Are the Discharge Pipes 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 are carried through the bunkers How are they protected 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 Screw Shaft Tunnel watertight Is it fitted with a watertight door worked from

BOILERS, &c.—(Letter for record) Total Heating Surface of Boilers Is Forced Draft fitted No. and Description of Boilers Working Pressure



W367-0105

Is a Report on Main Boilers now forwarded?

Is a Donkey Boiler fitted?

If so, is a report now forwarded?

Plans. Are approved plans forwarded herewith for Shafting
(If not state date of approval)

Main Boilers

Auxiliary Boilers

Donkey Boilers

Spare Gear. State the articles supplied:— *As per attached list.*

The foregoing is a correct description,
FOR AND ON BEHALF OF

CAMMELL LAIRD & Co. LIMITED

Manufacturer.

SECRETARY

Dates of Survey while building

During progress of work in shops --
During erection on board vessel --
Total No. of visits

Nov 15, 26, Dec 10, 17, 30, Jan 3, 6, 10, 14, 16, 20, 24, 28, 31, Feb 3, 7, 11, 14, 18, 19, 24, 26, 27, Mar 4, 6, 7, 11, 12, 13, 17, 18, 19, 20, 24, 25, 26, 27, 30, 31, Apr 2, 6, 7, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 23, 26, 29, 30, July 3

Dates of Examination of principal parts

Wheel shaft

Stern tube

Completion of pumping arrangements

Main boiler safety valves adjusted

Material and tensile strength of Rotor shaft

Material and tensile strength of Flexible Pinion Shaft

Material and tensile strength of Pinion shaft

Material and tensile strength of 1st Reduction Wheel Shaft

Material of Wheel shaft

Material of Tunnel shafts

Material of Steam Pipes

Is an installation fitted for burning oil fuel

Have the requirements of the Rules for carrying and burning oil fuel been complied with

Is this machinery a duplicate of a previous case

General Remarks

Material

Length of

End plate

How are

Tube plate

Mean pitch

Girders

at centre

in each

Tensile strength

Pitch of

Working

Thickness

Pitch of

Working

Diameter

Working

Diameter

Diameter

Diameter

Diameter

Diameter

Diameter

The amount of Entry Fee ... £
45/- Special Fee ... £ 53 18 0
Donkey Boiler Fee ... £
Travelling Expenses (if any) ... £

When applied for,
20 JUL 1936

When received,
19.8.36. paid

J. S. Milton
Engineer Surveyor to Lloyd's Register of Shipping.

TUE. 29 DEC 1936

Committee's Minute **LIVERPOOL 21 JUL 1936**

GLASGOW 20 OCT 1936

Assigned *Deferred for comp.*

See No. Rpt. No. 57571

