

REPORT ON STEAM TURBINE MACHINERY.

No. 105606
17 MAR 1938

Date of writing Report 11/3/38 When handed in at Local Office 11/3/38 Port of London
No. in Survey held at Rugby Date, First Survey 4th Oct 1938 Last Survey 4th March 1938
Reg. Book. City of Edinburgh (Number of Visits 9)
Built at Birkenhead By whom built Cammell Laird & Co Ltd Yard No. 1032 When built 1938
Engines made at Rugby By whom made B.T.H. Co Ltd Turbine Nos R.2034 When made 1938
Boilers made at Rugby By whom made B.T.H. Co Ltd Engine Nos R.2035 When made 1938
Generator Nos R.2036 When made 1938
Shaft Horse Power at Full Power 675 Owners The Ellerman Lines Ltd Port belonging to Liverpool
Nom. Horse Power as per Rule 112.5 Is Refrigerating Machinery fitted for cargo purposes
Trade for which Vessel is intended

TEAM TURBINE ENGINES, &c.—Description of Engines Three - 150KW. Turbo-electric generator sets
No. of Turbines 3 (1 per set) Direct coupled, single reduction geared to generator propelling shafts. No. of primary pinions to each set of reduction gearing 1
direct coupled to { Alternating Current Generator phase periods per second } Each 150KW Kilowatts 220 Volts at 800 revolutions per minute;
for supplying power for driving and lighting Propelling Motors, Type ✓
rated ✓ Kilowatts ✓ Volts at ✓ revolutions per minute. Direct coupled, single or double reduction geared to ✓ propelling shafts.

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Shaft Horse Power at each turbine { H.P. 225 I.P. 225 L.P. 1.75 } Revolutions per minute, at full power, of each Turbine Shaft { H.P. 6500 I.P. ✓ L.P. ✓ }
1st reduction wheel ✓
main shaft generator 800
Rotor Shaft diameter at journals { H.P. 1.75 I.P. 1.75 L.P. end 1.75 } Pitch Circle Diameter { 1st pinion 2.6245 1st reduction wheel ✓ 2nd pinion ✓ main wheel 21.3894 } Width of Face { 1st reduction wheel ✓ main wheel 4" x 2 = 8" }

Distance between centres of pinion and wheel faces and the centre of the adjacent bearings { 1st pinion 7" and 8" 1st reduction wheel ✓ 2nd pinion ✓ main wheel 7" and 8" }

Flexible Pinion Shafts, diameter { 1st ✓ 2nd ✓ } Pinion Shafts, diameter at bearings { 1st 3 3/4" 2nd ✓ } diameter at bottom of pinion teeth { 1st 2.3429 2nd ✓ }

Wheel Shafts, diameter at bearings { 1st ✓ 2nd ✓ } diameter at wheel shroud, { 1st ✓ 2nd ✓ } Generator Shaft, diameter at bearings 4" 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 Blades 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. Turbine 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 } Lubricating Oil Pumps, including Spare Pump, No. and size

Ballast Pumps, No. and size Are two independent means arranged for circulating water through the Oil Cooler Suctions, connected to both 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

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?
{ an Auxiliary }

If so, is a report now forwarded?

Is the donkey boiler intended to be used for domestic purposes only

Plans. Are approved plans forwarded herewith for Shafting 5-1-37
(If not state date of approval)

Main Boilers

Auxiliary Boilers

Donkey Boilers

Superheaters

General Pumping Arrangements

Oil Fuel Burning Arrangements

SPARE GEAR.

Has the spare gear required by the Rules been supplied

State the principal additional spare gear supplied

1 set of turbine gears and generator bearings,
1 set of gland packing, 1 set of carbon brushes, 1 brush spindle, 1 set
brush springs, 1 set governor springs.

THE BRITISH THOMSON-HOUSTON CO., LTD. (MARINE DEPT.)

The foregoing is a correct description,

Manufacturer.

Dates of Survey while building { During progress of work in shops -- } 1927, Oct 4th Nov 10, 29; 1928 Jan 28, Feb 8, 14, 18 28, Mar 4th
{ During erection on board vessel --- }
Total No. of visits 9

Dates of Examination of principal parts—Casings 8th Feb, 14th Feb 38 Rotors 10-1-38, 28-1-38 Blading 28-1-38 to 4-3-38 Gearing 28-1-38 to 4-3-38

Wheel shaft 10-11-37 to 4-3-38 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 171 173 175

Rotor shaft, Material and tensile strength 39 Steel, 422, 25-0%, 408, 26-0, 42-4, 25-0% Identification Mark 838 and 171, 173, 175

Flexible Pinion Shaft, Material and tensile strength Identification Mark

Pinion shaft, Material and tensile strength Nickel steel, 50-8, 25%, 51-0, 24%, 51-2, 24% Identification Mark 266/191, 192, 192

1st Reduction Wheel Shaft, Material and tensile strength Identification Mark

Wheel shaft, Material 28 Steel Identification Mark 849/195, 196, 197 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 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 Yes If so, state name of vessel SS "City of Cape Town"

General Remarks (State quality of workmanship, opinions as to class, &c.)

These three turbo electric generating sets have been specially surveyed during construction and in accordance with the approved plans and the Rules. The materials used have been made at works approved by the Committee and tested by the Surveyors to the Society. Full power, overspeed, governing and trip gear tests were witnessed in the shop and found satisfactory. They have now been dispatched to Birkenhead for fitting on board. These have now been fitted on board & examined under full working conditions & found satisfactory. Attached hereto Reports on three generators & list of Stampings. Forging Certificates are common to both 1032 and 1034 and will be attached to report on vessel 1034

The amount of Entry Fee ... £ : : When applied for,

Special ... £ 11 2 4-0 17 MAR 1938

Donkey Boiler Fee ... £ : : When received,

Travelling Expenses (if any) £ 4-4-0 For the to 24/2/38

Committee's Minute

Assigned

Engineer Surveyor to Lloyd's Register of Shipping.



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