

REPORT ON STEAM TURBINE MACHINERY.

No. 105938

pt. 4a.

Received at London Office

Date of writing Report 28 May 38 When handed in at Local Office 30 MAY 1938 Port of London
No. in Survey held at Bedford Date, First Survey 10 Jan 1938. Last Survey 27 May 1938
Reg. Book. TWIN SC. AMRA. (Number of Visits 10) Gross 8314 Net 3993
Built at Newcastle By whom built Swan Hunter & Wigham Richardson Yard No. 1570. When built
Engines made at Bedford By whom made W. H. Allen, Lewis & Co. Ltd. Engine No. 7/69022/1243 When made 1938.
Boilers made at By whom made Boiler No. When made
Shaft Horse Power at Full Power 410 ead Owners British India Ste. Nav. Co. Ltd Port belonging to
Nom. Horse Power as per Rule Is Refrigerating Machinery fitted for cargo purposes Is Electric Light fitted yes.
Trade for which Vessel is intended

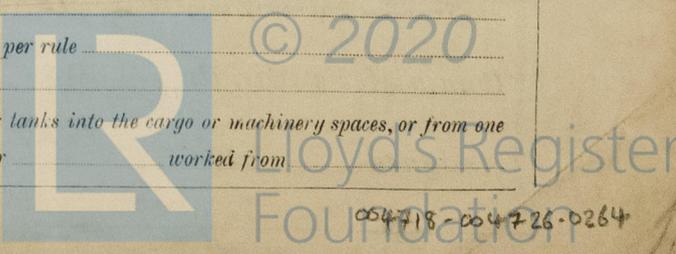
STEAM TURBINE ENGINES, &c.—Description of Engines Curtis Rating type.
No. of Turbines Ahead Direct coupled, single reduction geared to 2 propelling shafts. No. of primary pinions to each set of reduction gearing
Astern double reduction geared
direct coupled to Alternating Current Generator - phase Direct Current Generator rated 275 Kilowatts 220 Volts at 1000 revolutions per minute;
for supplying power for driving Generator Propelling Motors, Type D.C. open type.
rated Kilowatts Volts at revolutions per minute. Direct coupled, single or double reduction geared to propelling shafts.

Table with columns: TURBINE BLADING, H.P., I.P., L.P., ASTERN. Rows include 1st Expansion, 2nd, 3rd, 4th, 5th, 6th, 7th, 8th, 9th, 10th, 11th, 12th. Columns include Height of Blades, Diameter at Tip, No. of Rows.

Shaft Horse Power at each turbine H.P. 410 I.P. 200 L.P. 200 Revolutions per minute, at full power, of each Turbine Shaft H.P. 8000 I.P. 8000 L.P. 1000
Rotor Shaft diameter at journals H.P. 2 1/2 I.P. 3.379 L.P. 26.89 Width of Face 1st reduction wheel 22 4 1/2 main wheel
Distance between centres of pinion and wheel faces and the centre of the adjacent bearings 1st pinion 40 5/8 x 10 5/8 2nd pinion 25 x 25 1st reduction wheel main wheel
Flexible Pinion Shafts, diameter 1st 2 1/2 2nd 2 1/2 Pinion Shafts, diameter at bearings External 1st 2 1/2 2nd diameter at bottom of pinion teeth 1st 3.135 2nd 4
Wheel Shafts, diameter at bearings TURB END 4 GEN END 4 1/2 diameter at wheel shroud, 1st Generator Shaft, diameter at bearings 4 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 Blades State whether Movable 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 L.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
Ballast Pumps, No. and size Lubricating Oil Pumps, including Spare Pump, 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 worked from



GENERATING

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 an Auxiliary Boiler fitted? 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 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

State the principal additional spare gear supplied

The foregoing is a correct description,

S. Barber, Turbine Sec. W. H. Allen, Sec. Manufacturer.

Dates of Survey while building: During progress of work in shops -- 1938 Jan 10, March 11, April 1, 13, 20, 25, May 12, 17, 19, 27.
During erection on board vessel ---
Total No. of visits 10

Dates of Examination of principal parts—Casings 13.4.38 Rotors 13.4.38 Blading 13.4.38 Gearing 25.4.38

Wheel shaft 13.4.38 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 fired Engines tried under steam

Main boiler safety valves adjusted Thickness of adjusting washers

Rotor shaft, Material and tensile strength Identification Mark

Flexible Pinion Shaft, Material and tensile strength Identification Mark

Pinion shaft, Material and tensile strength Identification Mark

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

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 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 3 sets

General Remarks (State quality of workmanship, opinions as to class, &c.) These turbo generators have been surveyed during construction, hydraulic pressure tests carried out on the steam belts & casings; so far as can be seen the materials are sound & free from defects. The workmanship is good & on completion full power & overload tests were witnessed on the bench with satisfactory results.

The sets have been dispatched to Newcastle for installing on board & when completed, will, in my opinion merit the notation of Electric Light. These 3 Steam turbo dynamo sets have been satisfactorily fitted on board the AMRA & tried under working conditions. At Newcastle on 9/11/38.

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

Special ... £ 18-10-0 : : 30 MAY 1938

Donkey Boiler Fee ... £ : : When received, as per letter how/rev.

Travelling Expenses (if any) £ 2-15-0 : : 4.7.1938 300

A. T. Jameth

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute TUE 22 NOV 1938

Assigned See FE machy rpl.



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Notes of diagrams, copies of certificates, Generator Test Sheet, &c.

ENCLOSURE

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