

Rpt. 4a.

REPORT ON STEAM TURBINE MACHINERY. No. 101840

Date of writing Report 28 JAN 1944 When handed in at Local Office 28 JAN 1944 Port of NEWCASTLE ON TYNE Received at London Office 28 FEB 1944

No. in Survey held at Newcastle on Tyne Date, First Survey 26 May, 1942 Last Survey 24 January, 1944

Reg. Book. on the Tm. Se. "UMTATA" (Number of Visits 7288)

Gross Tons 3799 Net Tons 3799

When built 1944-1

By whom built Saran, Hunter & Wigham Richardson & Co. Yard No. 1740

Engines made at do By whom made do Reap Engine No. 1740 When made "

Boilers made at do By whom made do Exh. Steam Turbine No. 1740 When made "

Shaft Horse Power at Full Power 2700 Owners Bullard, King & Co. Ltd. Port belonging to LONDON

Nom. Horse Power as per Rule 1145 Is Refrigerating Machinery fitted for cargo purposes Yes Is Electric Light fitted Yes

Trade for which Vessel is intended open sea

STEAM TURBINE ENGINES, &c.—Description of Engines Bauer-Wach Exh. Steam Turbines

No. of Turbines Ahead 2 Direct coupled, single reduction geared to 2 propelling shafts. No. of primary pinions to each set of reduction gearing one

Astern 2 double reduction geared

direct coupled to { Alternating Current Generator ✓ phase 3 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 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							64. "m.	878. "m.	1			
2ND							84. "	918. "	1			
3RD							104. "	958. "	1			
4TH							124. "	998. "	1			
5TH							144. "	1038. "	1			
6TH							173. "	1096. "	1			
7TH							200. "	1150. "	1			
8TH												
9TH												
10TH												
11TH												
12TH												

Shaft Horse Power at each turbine { H.P. ✓ I.P. ✓ L.P. 1350. } Revolutions per minute, at full power, of each Turbine Shaft { H.P. ✓ I.P. ✓ L.P. 3505. }

Rotor Shaft diameter at journals { H.P. ✓ I.P. ✓ L.P. 170 m.m. } Pitch Circle Diameter { 1st pinion 271.528 1st reduction wheel 1411.946 2nd pinion 359.037 main wheel 1977.968 }

Distance between centres of pinion and wheel faces and the centre of the adjacent bearings { 1st pinion 260. "m. 2nd pinion 422.5 "m. }

Flexible Pinion Shafts, diameter { 1st 115 "m. 2nd ✓ } Pinion Shafts, diameter at bearings { External 1st 125 "m. 2nd 320 "m. Internal 1st ✓ 2nd 250. }

Wheel Shafts, diameter at bearings { 1st 230 "m. 2nd 250 "m. main 500 "m. } Generator Shaft, diameter at bearings ✓ 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 ✓ 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 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 ✓ }

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 ✓

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
(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

One complete bearing of each, size fitted for Turbine & D/R Gearing,
Michell Main Thrust Block PADS, 12 Port & 12 Stb.; 2nd Redⁿ pinion Michell thrust block pads
20 port & 20 Stb.; Turbine thrust block (Michell) pads, 12 port & 12 Stb. and liners for same
2 port & 2 Stb.; Turbine governor springs 1 port & 1 Stb.; one coupling bolt & nut for
1st Reduction pinion shaft and one ditto. for 2nd Redⁿ Wheel shaft, etc.

SWAN, HUNTER, & WIGHAM RICHARDSON, LTD.

The foregoing is a correct description,

J. J. Moody

Manufacturer.

Dates { During progress of
of Survey { work in shops --
while { During erection on
building { board vessel ---
Total No. of visits

See Report 4

Dates of Examination of principal parts—Casings P. 5/8/43 Rotors P. 27-8-43 Blading P. 27-8-43 Gearing 27-8-43
S. 12/8/43 S. 10-9-43 S. 13-9-43

Wheel shafts 27-8-43 Thrust shaft 13-9-43 Intermediate shafts See Rpt 4 on Main Engines. 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 21st 30th 12-43

Main boiler safety valves adjusted Thickness of adjusting washers

Rotor shaft, Material and tensile strength O.H. Forged Steel P & S. 37 tons per sq. in. Identification Mark 11702 H.A.I.

Flexible Pinion Shaft, Material and tensile strength Forged Nickel Stl. P. 39 tons min.; S. 47 tons min. Identification Mark 11734 H.A.I.

Pinion shaft, Material and tensile strength ditto P & S 42.6 tons min. Identification Mark 12065 H.A.I.

1st Reduction Wheel Shaft, Material and tensile strength J. Stl. P & S. 31 tons. Identification Mark 11702 H.A.I.

Wheel shaft, Material J. Stl. Identification Mark 11702 H.A.I. Thrust shaft, Material Identification Mark

Intermediate shafts, Material Identification Marks Tube shaft, Material See Rpt 4 on Main Engs. 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 No If so, state name of vessel

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

These Sub. Steam Turbines & D/R Gears have been constructed under special survey in accordance with the Society's Rules, and the materials and workmanship are good. The Machinery along with the Main Engines have been satisfactorily fitted on board the vessel and tried under Steam with satisfactory results. See also Rpt 4 on Main Engines.

The amount of Entry Fee ... £ See Rpt 4 : When applied for, :
Special ... £ : : 19
Donkey Boiler Fee ... £ : : When received, :
Travelling Expenses (if any) £ : : 19

A. Watt

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

THURS 9 MAR 1944

Assigned

See J. J. Moody rpt.



© 2020

Lloyd's Register Foundation