

REPORT ON STEAM TURBINE MACHINERY.

No. 84968

Received at London Office

21 NOV. 1929

Date of writing Report 19 When handed in at Local Office 10.9.1929 Port of Newcastle-on-Tyne.
 No. in Survey held at Walker Date, First Survey 3 June Last Survey 4 Sept. 1929
 Reg. Book. on the low pressure turbine for the S.S. "GORDISTAN" (Number of Visits 8)
 Built at Smith & Laidlaw By whom built J. Readhead & Co., Ltd. No. 498. When built 1929.
 Engines made at Walker By whom made Swan Hunter, W.R. & Co. Engine No. 1342 When made 1929.
 Boilers made at Smith & Laidlaw By whom made J. Readhead & Co., Ltd. Boiler No. 498 When made 1929.
 Shaft Horse Power at Full Power Owners Port belonging to
 Nom. Horse Power as per Rule 228 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes.
 Trade for which Vessel is intended General Cargo.

TEAM TURBINE ENGINES, &c.—Description of Engines One Bauer-Wach Turbine.

No. of Turbines Ahead One Direct coupled, single reduction geared to One 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 Direct Current Generator 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 LADING.	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							98 1/2"	1046 1/2"	6			
2ND							119 "	1088 "	"			
3RD							140 "	1133 "	"			
4TH							161 "	1142 "	"			
5TH							191 "	1232 "	"			
6TH							220 "	1290 "	"			
7TH												
8TH												
9TH												
10TH												
11TH												
12TH												

Shaft Horse Power at each turbine { H.P. : I.P. : L.P. 1340 } Revolutions per minute, at full power, of each Turbine Shaft { H.P. : I.P. : L.P. 2945 } 1st reduction wheel 420. main shaft 80.
 Rotor Shaft diameter at journals { H.P. : I.P. : L.P. 140 1/2" } Pitch Circle Diameter { 1st pinion 255.21 1/2" 1st reduction wheel 1808.14 1/2" 2nd pinion 461.69" main wheel 2129.4 1/2" } Width of Face { 1st reduction wheel 290 1/2" main wheel 660 1/2" }
 Distance between centres of pinion and wheel faces and the centre of the adjacent bearings { 1st pinion 295.1340 1st reduction wheel 415 1/2" + 195.5 1/2" 2nd pinion 655 1/2" main wheel 590 1/2" }
 Flexible Pinion Shafts, diameter { 1st 110 1/2" 2nd - } Pinion Shafts, diameter at bearings External 1st 140 1/2" 2nd 420 1/2" Internal 1st 135 1/2" 2nd 440 1/2" diameter at bottom of pinion teeth { 1st 240.59 1/2" 2nd 446.96 1/2" }
 Wheel Shafts, diameter at bearings { 1st 300 1/2" 2nd 550 " } diameter at wheel shroud, { 1st 1438 1/2" 2nd 2234 " } Generator Shaft, diameter at bearings 15.31" Propelling Motor Shaft, diameter at bearings 394 1/2" as per rule 15.31" as fitted 394 1/2" Tube Shaft, diameter as per rule - as fitted -
 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 -
 Crew 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 - 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.
 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
 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-bones
 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
 That pipes pass through the bunkers How are they protected
 That 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

See Report of J. Readhead & Co., Ltd. attached.

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?

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. State the articles supplied:—

Please Report

For
SWAN, HUNTER & WIGHAM RICHARDSON, LTD

The foregoing is a correct description,

R. W. Wintour
SECRETARY

Manufacturer.

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

1929 June 3. 5. July 23. 25. Aug. 15. 19. 27. Sep. 4.

8.

Dates of Examination of principal parts—Casings 23. 4. 29. Rotors 23. 4. 29. Blading 23. 4. 29. Gearing 23. 4. 29.

Wheel shaft 23. 4. 29. Thrust shaft 23. 4. 29. Intermediate shafts - Tube shaft - Screw shaft -

Propeller - Stern tube - Engine and boiler seatings - Engine holding down bolts -

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

Steel

Hammerhead

Pinion Shaft, Material and tensile strength

Steel

1st Red

Pinion shaft, Material and tensile strength

Steel

2nd Red

Pinion Shaft, Material and tensile strength

Steel

3rd Red

Wheel shaft, Material

Steel

Identification Mark

N 6044 M.R.

23. 4. 29.

Thrust shaft, Material

Steel

Identification Mark

~ do -

Intermediate shafts, Material

Steel

Identification Marks

~ do -

Tube shaft, Material

-

Identification Marks

-

Steam Pipes, Material

Steel

Identification Marks

~ do -

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 carrying and burning oil fuel been complied with

Is this machinery a duplicate of a previous case yes If so, state name of vessel "Arabistan."

General Remarks (State quality of workmanship, opinions as to class, &c.) The Machinery has been built under special survey in accordance with the approved plans & the Rules of the Society. The workmanship & materials are of good quality throughout. The machine will be fitted on board the vessel at Messrs Readhead & Co. yard to which they have now been forwarded

The amount of Entry Fee ... £

Special ...

Donkey Boiler Fee ... £

Travelling Expenses (if any) £

When applied for,

4. 11. 19 29

When received,

8. 11. 19 29

Thos. A. Ferguson.

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

TUE. 26 NOV 1929

TUE. 17 DEC 1929

Assigned

All P.B. rpt. attached



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Foundation