

REPORT ON STEAM TURBINE MACHINERY. No. 85267

Date of writing Report 19 When handed in at Local Office 4/11/29 Port of NEWCASTLE-ON-TYNE
 No. in Survey held at Walker Date, First Survey 3rd June Last Survey 28 Oct 1929
 Reg. Book. on the Gas pressure turbine for the S. S. (Number of Visits 11) Tons Gross 5884
Net 3708
 Built at South Shields By whom built J. Readhead, Sons, Ltd Yard No. 499 When built 1929
 Engines made at Walker By whom made Bruce & Hunter, W. R. & Co Engine No. 1344 When made do
 Boilers made at South Shields By whom made J. Readhead, Sons, Ltd Boiler No. 499 When made do
 Shaft Horse Power at Full Power 1200 (est) Owners _____ Port belonging to _____
 Nom. Horse Power as per Rule 228 Is Refrigerating Machinery fitted for cargo purposes _____ Is Electric Light fitted Yes
 Trade for which Vessel is intended General Cargo

STEAM TURBINE ENGINES, &c.—Description of Engines one Bauer-Wash Turbine

No. of Turbines one Ahead one Direct coupled, single reduction geared to one propelling shafts. No. of primary pinions to each set of reduction gearing one
 Astern one double reduction geared
 Direct coupled to Alternating Current Generator phase _____ periods per second _____
Direct Current Generator rated _____ Kilowatts _____ Volts at _____ revolutions per minute;
 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 STAGING.	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 1/4"	10 4/6"	6			
2nd							119 "	10 8/8 "	"			
3rd							140 "	11 3/2 "	"			
4th							161 "	11 4/2 "	"			
5th							191 "	12 3/2 "	"			
6th							250 "	12 9/0 "	"			

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

Motor Shaft diameter at journals { H.P. _____ I.P. _____ L.P. 140 mm }
 Pitch Circle Diameter { 1st pinion 255.23 2nd pinion 461.59 }
 1st reduction wheel 1808.34 main wheel 2329.4
 Width of Face { 1st reduction wheel 290 mm main wheel 660 mm }

Distance between centres of pinion and wheel faces and the centre of the adjacent bearings { 1st pinion 295.34 2nd pinion 505 }
 1st reduction wheel 415 main wheel 1855
 main wheel 590

Flexible Pinion Shafts, diameter { 1st 110 mm 2nd _____ }
 Pinion Shafts, diameter at bearings External 1st 140 mm 2nd 420 mm Internal 1st _____ 2nd 355
 diameter at bottom of pinion teeth { 1st 246.59 2nd 446.96 }

Wheel Shafts, diameter at bearings { 1st 300 mm main 550 }
 diameter at wheel shroud, { 1st 1438 mm main 2234 }
 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 15.31 as fitted 394
 Tube Shaft, diameter as per rule _____ as fitted _____

Screw Shaft, diameter as per rule _____ as fitted _____
 Is the { tube } 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 H.P. Turbine _____ Can the H.P. or I.P. Turbine exhaust direct to the condenser _____

No. of Turbines fitted with astern wheel _____
 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 _____
 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 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 _____

Repeat of Report attached

BOILERS, &c. — (Letter for record)

Total Heating Surface of Boilers

Working Pressure

Is Forced Draft fitted

No. and Description of Boilers

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:—

As per attached List.

FOR SWAN, HUNTER & WIGHAM RICHARDSON, LTD.

E. J. Jewell

DIRECTOR. Manufacturer

The foregoing is a correct description,

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

Dates of Examination of principal parts—Casings 13.9.29. Rotors 13.9.29. Blading 13.9.29. Gearing 13.9.29.

Wheel shaft 2.10.29. Thrust shaft 2.10.29. 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. See attached reports Identification Mark LLOYDS No 6048 U.R. 8.2.8.13.9.29

Pinion shaft, Material and tensile strength Steel. ~ do ~ Identification Mark LLOYDS No 6046 8.2.8.10.29

Pinion shaft, Material and tensile strength Steel. ~ do ~ Identification Mark LLOYDS No 6048 8.2.8.10.29

Wheel shaft, Material Steel Identification Mark LLOYDS No 6049 8.2.8.10.29 Thrust shaft, Material Steel Identification Mark LLOYDS No 6048 8.2.8.10.29

Intermediate shafts, Material Steel Identification Marks ~ do ~ Tube shaft, Material - Identification Marks

Shafting Shafts, Material Steel Identification Marks ~ do ~ 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 -

Is this machinery a duplicate of a previous case? Yes If so, state name of vessel S. S. "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 turbine will be fitted on board the vessel at Messrs Readhead & Sons Yard where it has not been forwarded.

	When applied for,	When received,
The amount of Entry Fee ... £	231. 19 30	
Special ... £	22. 16 -	
Donkey Boiler Fee ... £		30. 1. 19 30
Travelling Expenses (if any) £		

Wm. A. Ferguson, Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

FRI, 7 FEB 1930

Assigned

See other Awe J.E. Rpt



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