

REPORT ON STEAM TURBINE MACHINERY. No. 96352

Rpt. 4a. Received at London Office 15/6/38

Date of writing Report 19 When handed in at Local Office 15/6/1938 Port of NEWCASTLE-ON-TYNE

No. in Survey held at Newcastle on Tyne Date, First Survey 24 March Last Survey 13/6/1938
 Reg. Book. S.S. Corinthian (Number of Visits 14) Tons } Gross
 on the S.S. Corinthian Net

Built at West Hartlepool By whom built Wm. Gray & Co Yard No. 1083 When built
 Engines made at ditto By whom made Central Mar. Eng. Co Engine No. 1083 When made
 L.P. Turbine Newcastle By whom made Salea, Hunter & Wigham Reeds Turbine Turbine No. 1590 When made 1938
 Shaft Horse Power at Full Power 1043 Owners _____ Port belonging to _____
 Nom. Horse Power as per Rule 174 Is Refrigerating Machinery fitted for cargo purposes _____ Is Electric Light fitted _____
 Trade for which Vessel is intended _____

STEAM TURBINE ENGINES, &c. — Description of Engines 2ch. Stem Turbine on Bauer Wack System with D.R. Gearung & hydraulic Coupling.

No. of Turbines Ahead one Direct coupled, single reduction geared } to One propelling shaft. 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 _____ } rated _____ Kilowatts Volts at _____ revolutions per minute;
 for supplying power for driving Propelling Motors, Type Direct Current Generator }
 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. ^m / _m	DIAMETER AT TIP. ^m / _m	NO. OF ROWS.	HEIGHT OF BLADES.	DIAMETER AT TIP.	NO. OF ROWS.
1ST EXPANSION							57.	864.	one			
2ND "							78.	906.	one			
3RD "							99.	948.	one			
4TH "							120.	990.	one			
5TH "							141.	1032	one			
6TH "							171.	1092	one			
7TH "							200.	1150	one			
8TH "												
9TH "												
10TH "												
11TH "												
12TH "												

Shaft Horse Power at the turbine { H.P. _____ } 1st reduction wheel 516.5
 { I.P. _____ } main shaft 90.
 { L.P. 1043 } ✓

Rotor Shaft diameter at journals { H.P. _____ } 1st pinion 233.51 ^m/_m 1st reduction wheel 1515.13 ^m/_m Width of { 1st reduction wheel 260 ^m/_m
 { I.P. _____ } 2nd pinion 380.14 ^m/_m main wheel 2112.49 ^m/_m Face { main wheel 580 ^m/_m
 { L.P. 170 ^m/_m } ✓

Distance between centres of pinion and wheel faces and the centre of the adjacent bearings { 1st pinion 285 ^m/_m AFT 265 ^m/_m 1st reduction wheel 1645 ^m/_m AFT 380 ^m/_m
 { 2nd pinion 440 ^m/_m main wheel 550 ^m/_m } ✓

Flexible Pinion Shafts, diameter { 1st 150 ^m/_m } External 1st { 350 ^m/_m } diameter at bottom of pinion teeth { 1st 218.87
 { 2nd _____ } Internal 1st { 285 ^m/_m } { 2nd 365.49 } ✓

Wheel Shafts, diameter at bearings { 1st 260 ^m/_m } diameter at wheel shroud, { 1st 1445 ^m/_m } Generator Shaft, diameter at bearings ✓
 { main 500 ^m/_m Ext. 400 ^m/_m Int. } main 2015 ^m/_m } Propelling Motor Shaft, diameter at bearings ✓

Quill Intermediate Shaft, diameter as per rule _____ Thrust Shaft, diameter at collars as per rule _____
 For THRUST SH. as fitted 350 ^m/_m (13.8) ✓ as fitted _____

Tube Shaft, diameter as per rule _____ Screw Shaft, diameter as per rule _____ Is the { tube } shaft fitted with a continuous liner { ✓
 as fitted _____ as fitted _____ as fitted _____ screw }

Bronze Liners, thickness in way of bushes as per rule _____ Thickness between bushes as per rule _____ Is the after end of the liner made watertight in the propeller boss _____
 as fitted _____ as fitted _____ 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 _____

Ballast Pumps, No. and size _____ Lubricating Oil Pumps, including Spare Pump, No. and size 8" x 9" x 18" Stroke
 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 stowage 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 _____

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? _____ If so, is a report now forwarded? _____
 { an Auxiliary }

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

Plans. Are approved plans forwarded herewith for Shafting No. 13/5/37 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 } *One bearing of each size fitted.
 One set Thrust Pads for each Thrust Bearing.
 One Spring + one set Washers for Emergency Govt etc etc.*

SWAN, HUNTER, & WISHAM RICHARDSON, LTD.

G. J. Jewry Manufacturer.

The foregoing is a correct description,

1938
 Dates of Survey while building { During progress of work in shops - - } *Jan. 24. Apr. 4. 5. 13. 19. 25. 27. May 5. 9. 27. June 1. 2. 10. 13.*
 { During erection on board vessel - - - }
 Total No. of visits *14.*

Dates of Examination of principal parts—Casings *1/6/38* Rotors *25/4/38* Blading *13/6/38* Gearing *27/5/38*

Wheel shaft *27/5/38* Thrust shaft Intermediate shaft *Quill 27/5/38* 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 *in Shop* under steam *10/6/38*

Main boiler safety valves adjusted Thickness of adjusting washers

Rotor shaft, Material and tensile strength *SM Steel 36.2 tons/□* Identification Mark *7542 H.A.I.*

1st Redn Flexible Pinion Shaft, Material and tensile strength *S.M. Steel (Nickel) 47.5 tons/□ (yield 33.0 tons)* Identification Mark *7542 H.A.I.*

2nd Redn Pinion shaft, Material and tensile strength *do " 48.0 " (" 38.5 ")* Identification Mark *7695 H.A.I.*

1st Reduction Wheel Shaft, Material and tensile strength *SM Steel 30.8 tons* Identification Mark *7542 H.A.I.*

Wheel shaft, Material *SM Steel* Identification Mark *7542 H.A.I.* Thrust shaft, Material Identification Mark

Quill Intermediate shaft, Material *SM Steel* Identification Marks *7542 H.A.I.* 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 *S. H. W. B. LP Mark. No 1542 & No 1578
 Wm Gray's Yard No 1073 & No 1082
 S/S BELGRAVIAN.*

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

*The machinery has been built under special survey in accordance with the Rules & approved plan. and the materials & workmanship are good.
 The machinery has been sent to W. Hartlepool to be installed on board.*

After installation on board examined under full working conditions and found satisfactory.

The amount of Entry Fee ... £ : :
 Special ... £ *17 : 8* : :
 Donkey Boiler Fee ... £ : :
 Travelling Expenses (if any) £ : :
 When applied for, *15 JUN 1938*
 When received, *13th July 1938.*

A. Watt *J. Brooke Smith*
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute **TUE. 13 SEP 1938**

Assigned *See Hpl. 17862*



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