

REPORT ON MACHINERY.

No. 15959

Date of writing Report 1-3-22

When handed in at Local Office

7th Mar 1922

Port of

WEST HARTLEPOOL

Received at London Office

THU. 2 MAR. 1922

No. in Survey held at Hartlepool
Reg. Book.
on the Turbines No. T 196.Date, First Survey 13th Feb 1920Last Survey 23rd Feb 1922

S. S. No 18

Number of Plates 77

Gross
Tons
Net

Master

Built at Middlesbrough

By whom built

Furness S. B. Co. Ltd.

When built

Engines made at Hartlepool

By whom made

Richardsons Westgarth & Co. Ltd.

When made 1922

Boilers made at

By whom made

When made

Registered Horse Power 28,101 1/2

Owners

Port belonging to

Shaft Horse Power at Full Power 5000

Is Refrigerating Machinery fitted for cargo purposes

Is Electric Light fitted

TURBINE ENGINES, &c. Description of Engines Single reduction geared turbines No. of Turbines 2

Diameter of Rotor Shaft Journals, H.P. $7\frac{1}{2}$ " L.P. 10 " Diameter of Piston Shaft 9 "
 Diameter of Journals 9 " Distance between Centres of Bearings $3-1\frac{1}{2}$ " Diameter of Pitch Circle 10.012 "
 Diameter of Wheel Shaft 17 " Distance between Centres of Bearings $7-1\frac{1}{2}$ " Diameter of Pitch Circle of Wheel 144.21 "
 Width of Face 50 " Diameter of Thrust Shaft under Collars $17\frac{1}{2}$ " Diameter of Tunnel Shaft as per rule 15.4 "
 No. of Screw Shafts 1 Diameter of same as per rule $17\frac{1}{2}$ " Diameter of Propeller $18-9$ " Pitch of Propeller $17-3$ "
 No. of Blades 4 State whether Movable no Total Surface 118.24 " Diameter of Rotor Disc, H.P. Discs 1 L.P. 1 Astern 1
 Thickness at Bottom of Groove, H.P. L.P. Astern Revs. per Minute at Full Power, Turbines 1270 Propeller 88

PARTICULARS OF BLADING. all impulse blades.

H. P.				L. P.				ASTERN.			
1ST EXPANSION	HEIGHT OF BLADES	DIAMETER AT TIP	NO. OF ROWS	2ND	HEIGHT OF BLADES	DIAMETER AT TIP	NO. OF ROWS	HP	HEIGHT OF BLADES	DIAMETER AT TIP	NO. OF ROWS
1ST	$2\frac{1}{2}$ "	$57\frac{1}{2}$ "	2	2ND	$2\frac{1}{2}$ "	$74\frac{1}{2}$ "	1	1	$2\frac{1}{2}$ "	$57\frac{1}{2}$ "	1
2ND	$1\frac{1}{2}$ "	$57\frac{1}{2}$ "	2	3RD	$2\frac{1}{2}$ "	$74\frac{1}{2}$ "	1	2	$1\frac{1}{2}$ "	$58\frac{1}{2}$ "	1
3RD	$1\frac{1}{2}$ "	$58\frac{1}{2}$ "	1	4TH	$3\frac{1}{2}$ "	$74\frac{1}{2}$ "	1	3	$2\frac{1}{2}$ "	$59\frac{1}{2}$ "	1
4TH	$1\frac{1}{2}$ "	$58\frac{1}{2}$ "	1	5TH	$4\frac{1}{2}$ "	$74\frac{1}{2}$ "	1	4	$1\frac{1}{2}$ "	$73\frac{1}{2}$ "	1
5TH	$1\frac{1}{2}$ "	$58\frac{1}{2}$ "	1	6TH	$5\frac{1}{2}$ "	$75\frac{1}{2}$ "	1	5	$2\frac{1}{2}$ "	$74\frac{1}{2}$ "	1
6TH	$1\frac{1}{2}$ "	$58\frac{1}{2}$ "	1	7TH	7 "	76 "	1	6	$3\frac{1}{2}$ "	$75\frac{1}{2}$ "	1
7TH	$1\frac{1}{2}$ "	$58\frac{1}{2}$ "	1	8TH	$9\frac{1}{2}$ "	$78\frac{1}{2}$ "	1	7			
8TH	$2\frac{1}{2}$ "	$59\frac{1}{2}$ "	1	9TH	$11\frac{1}{2}$ "	$78\frac{1}{2}$ "	1	8			
10TH	$2\frac{1}{2}$ "	$59\frac{1}{2}$ "	1	11TH	$12\frac{1}{2}$ "	$79\frac{1}{2}$ "	1	9			
11TH	$2\frac{1}{2}$ "	$59\frac{1}{2}$ "	1	12TH	$12\frac{1}{2}$ "	$79\frac{1}{2}$ "	1	10			

No. and size of Bilge suction in Engine Room

In Holds, &c.

No. of Bilge Injections sizes Connected to condenser, or to circulating pump Is a separate Donkey Suction fitted in Engine Room & size
 Are all the bilge suction pipes fitted with roses Are the roses in Engine room always accessible
 Are all connections with the sea direct on the skin of the ship Are they Valves or Cocks
 Are they fixed sufficiently high on the ship's side to be seen without lifting the stakehold plates Are the Discharge Pipes 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 are carried through the bunkers How are they protected
 Are all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times
 Are the Bilge Suction Pipes, Cocks, and Valves arranged so as to prevent any communication between the sea and the bilges
 Is the Screw Shaft Tunnel watertight Is it fitted with a watertight door

BOILERS, &c. (Letter for record Manufacturers of Steel

Total Heating Surface of Boilers 3360 sq. ft. Forced Draft fitted Yes No and Description of Boilers 4
 Working Pressure 190 lb. Tested by hydraulic pressure to Date of test No. of Certificate
 Can each boiler be worked separately Area of fire grate in each boiler No. and Description of Safety Valves to each boiler
 Area of each valve Pressure to which they are adjusted Are they fitted with spring gear
 Smallest distance between boilers or uptakes and bunkers or woodwork From diam. of boilers Length of shell plates
 Thickness Range of tensile strength Are the shell plates riveted or flanged Degree of riveting, cir. seams
 long. seams Diameter of rivet holes in long. seams Pitch of rivets Lap of rivets or width of butt straps
 Per centages of strength of longitudinal joint rivets Working pressure of shell by rules Size of rivets in shell
 plates
 Size of compensating ring No. and Description of Furnaces in each Boiler Material Outside diameter
 Length of plain part top Thickness of plates crown Description of longitudinal joint No. of strengthening rings
 bottom
 Working pressure of furnace by the rules Combustion chamber plates: Material Thickness: Sides Back Top Bottom
 Pitch of stays to shells: Sides Back Top If stays are fitted with nuts or riveted heads Working pressure by rules
 Material of stays Diameter at shell face Area supported by each stay Working pressure by rules End plates in steam space
 Material Thickness Pitch of stays How are stays secured Working pressure by rules Material of stays
 Diameter at smallest part Area supported by each stay Working pressure by rules Material of Front plates at bottom
 Thickness Material of Lower back plate Thickness Greatest pitch of stays Working pressure of plate by rules
 Diameter of tubes Pitch of tubes Material of tube plates Thickness: Front Back Mean pitch of stays
 Pitch across wide water spaces Working pressure by rules Girders to Chamber tops: Material Depth and
 thickness of girder at centre Length as per rule Distance apart Number and pitch of stays in each
 Working pressure by rules Steam dome: description of joint to shell 1/4 of strength of joint Diameter
 Thickness of shell plates Material Description of longitudinal joint Diameter of rivet holes Pitch of rivets
 Working pressure of shell by rules Crown plates: Thickness How stayed

Tested by Hydraulic Pressure to

Is a Safety Valve fitted to each Section of the Superheater which can be shut off from the Boiler

Is Easing Gear fitted

If so, is a report now forwarded?

The foregoing is a correct description,
FOR RICHARDSONS, WESTGARTH & CO. LIMITED.

L. S. Wright GENERAL MANAGER

Manufacturer.

[illegible]

Is the approved plan of main boiler forewarded herewith

Dates of Examination of principal parts—Casings 31.8-24.11.21 Rotors 31.8.21-7.2.22 Blading 27.9.21-29.11.21 Gearing 27.9.21-8.11.21

Rotor shaft 7.2.22 Thrust shaft 7.2.22. Tunnel shafts 38 Screw shaft Propeller

Stern tube	Steam pipes tested	Engine and boiler seatings	Engines holding down bolts
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Completion of pumping arrangements	Boilers fixed	Engines tried under steam
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Main boiler safety valves adjusted	Thickness of adjusting washers
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Material and tensile strength of Rotor shaft *Siemens Manton Steel 34/38 tons* Identification Mark on Ds. *2635 W.G.H.*
2724 V.V.G.H.

Material and tensile strength of Pinion shaft *Nickel Steel 40/45 tons* Identification Mark on Dr. *3806D, 3807D*

Material of Wheel shaft *Ingot Steel* Identification Mark on Do. *5489 J.P.* Material of Thrust shaft *Ingot S.* Identification Mark on Do. *5942 N.*

Material of Tunnel shafts *Scrap iron* Identification Marks on Do. *6285*. Material of Screw shafts *Scrap iron* Identification Marks on Do. *6285*

Material of Steam Pipes

Test pressure

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 Section 49 of the Rules been complied with

Is this machinery a duplicate of a previous case _____ If so, state name of vessel _____

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

These turbines ^{and gearing} have been built under Special Survey.
The materials and workmanship are good.
The turbines and gearing have been tried under steam
in the shop. They have been despatched to
Middlesbrough for fitting on board.

The amount of Entry Fee	£	:	:	When applied for,
Special	£	:	10	19
Donkey Boiler Fee	£	:	:	When received,
Travelling Expenses (if any)	£	:	:	30.3.22

R. D. Shilston

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

FRI. 48 SEP. 1922

Assigned