

REPORT ON MACHINERY.

No. 27250

Received at London Office

Date of writing Report 10.9.18 When handed in at Local Office 4.6.18 Port of Sunderland
 No. in Survey held at Sunderland Date, First Survey 13 Feb 18 Last Survey 21 Sept 1918
 Reg. Book. on the new steel S/S "WAR RAPIER" (Number of Visits 23)

Master Edmt. Built at Bristol By whom built C. Hill & Sons (S/N 128) Gross Tons 1918
 Engines made at Sunderland By whom made Richardsons Wedgath & Co. Ld (N 2143) when made 1918
 Boilers made at Renfrew By whom made Balcock & Wilson Ld. when made 1918
 Registered Horse Power 498 Owners The Shipping Controller Port belonging to Bristol
 Nom. Horse Power as per Section 28 498 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

ENGINES, &c.—Description of Engines Triple expansion No. of Cylinders 3 No. of Cranks 3
 Dia. of Cylinders 25", 41", 68" Length of Stroke 45 Revs. per minute 76 Dia. of Screw shaft 3.4" Material of Scrap Iron
 Is the screw shaft fitted with a continuous liner the whole length of the stern tube yes Is the after end of the liner made water tight
 in the propeller boss yes If the liner is in more than one length are the joints burned ✓ 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 — Length of stern bush 5'-0"
 Dia. of Tunnel shaft 12.4" Dia. of Crank shaft journals 13.02" Dia. of Crank pin 13.4" Size of Crank webs 8" x 20" Dia. of thrust shaft under
 collars 13.2" Dia. of screw 15.6" Pitch of Screw 17.0" No. of Blades 4 State whether moceable No Total surface 758
 No. of Feed pumps 2 Diameter of ditto 3.2" Stroke 24" Can one be overhauled while the other is at work yes
 No. of Bilge pumps 2 Diameter of ditto 3.2" Stroke 24" Can one be overhauled while the other is at work yes
 No. of Donkey Engines 5 Sizes of Pumps 1 1/2", 1", 1", 1", 1" No. and size of Suctions connected to both Bilge and Donkey pumps
 In Engine Room Three of three inch In Holds, &c. Four hold two of 3", No. 2 two of 3", No. 3 two of 3"
 No. of Bilge Injections 8 Connected to condenser, or to circulating pump Yes Is a separate Donkey Suction fitted in Engine room & size 4"
 Are all the bilge suction pipes fitted with roses Yes Are the roses in Engine room always accessible Yes Are the sluices on Engine room bulkheads always accessible Yes
 Are all connections with the sea direct on the skin of the ship Yes Are they Valves or Cocks Valves & locks
 Are they fixed sufficiently high on the ship's side to be seen without lifting the stowhold plates Yes Are the Discharge Pipes above or below the deep water line above
 Are they each fitted with a Discharge Valve always accessible on the plating of the vessel Yes Are the Blow Off Cocks fitted with a spigot and brass covering plate Yes
 What pipes are carried through the bunkers Sections for Hold & Fore peak How are they protected At sides & clipped
 Are all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times Yes
 Are the Bilge Suction Pipes, Cocks, and Valves arranged so as to prevent any communication between the sea and the bilges Yes
 Dates of examination of completion of fitting of Sea Connections 4.7.18 of Stern Tube 4.7.18 Screw shaft and Propeller 4.7.18
 Is the Screw Shaft Tunnel watertight Yes Is it fitted with a watertight door No worked from Two Escapes

BOILERS, &c.—(Letter for record) Manufacturers of Steel —
 Total Heating Surface of Boilers — Is Forced Draft fitted — No. and Description of Boilers —
 Working Pressure — 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 easing gear —
 Smallest distance between boilers or uptakes and bunkers or woodwork — Mean dia. of boilers — Length — Material of shell plates —
 Thickness — Range of tensile strength — Are the shell plates welded or flanged — Descrip. of riveting: cir. seams —
 Long. seams — Diameter of rivet holes in long. seams — Pitch of rivets — Lap of plates or width of butt straps —
 Percentages of strength of longitudinal joint — Working pressure of shell by rules — Size of manhole in shell —
 No. of compensating ring — No. and Description of Furnaces in each boiler — Material — Outside diameter —
 Length of plain part — Thickness of plates — Description of longitudinal joint — No. of strengthening rings —
 Working pressure of furnace by the rules — Combustion chamber-plates: Material — Thickness: Sides — Back — Top — Bottom —
 Pitch of stays to ditto: Sides — Back — Top — If stays are fitted with nuts or riveted heads — Working pressure by rules —
 Material of stays — Diameter at smallest part — 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 pressures 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 — Superheater or Steam chest; how connected to boiler — Can the superheater be shut off and the boiler worked —
 Material — Diameter — Length — Thickness of shell plates — Material — Description of longitudinal joint — Diam. of rivet —
 Pitch of rivets — Working pressure of shell by rules — Diameter of flue — Material of flue plates — Thickness —
 Fitted with rings — Distance between rings — Working pressure by rules — End plates: Thickness — How stayed —
 Working pressure of end plates — Area of safety valves to superheater — Are they fitted with easing gear —

IS A DONKEY BOILER FITTED? *no*

If so, is a report now forwarded?

SPARE GEAR. State the articles supplied :- 2 Top end, 2 bottom end, 2 main bearing + 6 coupling bolts + nuts. Main + donkey check valves, H.P. piston springs, spare suction & delivery valves all pumps, 2 Safety Valve springs, 1 Solid Piston valve, connecting rod + piston springs + 1 piston valve centrifugal pump, 12 pump ring studs + nuts, bolts iron assorted. outfit as per amended specification.
Boilers 4 Large Return tubes, 16 small, spare joints, bricks, complete set expanders + screws

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

Ruderic H. Russell

Manufacturer of Main Engines

ASSISTANT MANAGER

Dates of Survey while building { During progress of work in shops -- } 1918 Feb 19 Mar 20 Apr 5 11 16 25 May 10 14 24 28 29
{ During erection on board vessel -- } Judge 25th July 6th 25th 30th Aug 16th Aug 21st Aug 27th Sept 12th Sept 14th 20th Sept 24th
Total No. of visits 23

Is the approved plan of main boiler forwarded herewith

" " " donkey " "

Dates of Examination of principal parts - Cylinders 20-3-18 Slides 25-4-18 Covers 14-5-18 Pistons 27-4-18

Connecting rods 16-4-18 Crank shaft *Hpl* Thrust shaft 24-5-18 Tunnel shafts 24-5-18 Screw shaft 24-5-18

Stern tube 14-5-18 Steam pipes tested *12.9.18* Engine and boiler seatings 26-7-18 Engines holding down bolts

Completion of pumping arrangements 20-9-18 Boilers fixed 27-8-18 Engines tried under steam 27-8-18

Main boiler safety valves adjusted 20th Sept 1918 Thickness of adjusting washers P 5/16 5/16 5/16 5/16

Material of Crank shaft *Steel* Identification Mark on Do. 5994 A.B. Material of Thrust shaft *Steel* Identification Mark on Do. 5994 A.B.

Material of Tunnel shafts *Steel* Identification Marks on Do. 1112 B.W. Material of Screw shafts *Steel* Identification Marks on Do. 1112 B.W.

Material of Steam Pipes *Steel* Test pressure 540 lbs

Is an installation fitted for burning oil fuel Is the flash point of the oil to be used over 100° F

Have the requirements of Section 49 of the Rules been complied with

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

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

The material and workmanship is good.

The engines have been constructed under special survey and have been found to be fitted in the vessel.

These engines have now been fitted in the above vessel & tried with satisfactory results. Two Babcock & Wilcox Water tube Boilers (Glasgow Report No. 37565) have now been erected on board & tested by hydraulic pressure to 360 lbs sq. in., carrying gas fitted & the Safety Valves adjusted under steam to 185 lbs sq. in.

However Forced Draught is fitted but this will not be used unless present arrangement is altered as in the first instance it was found that the Boilers generated more steam than could be used by the engines & secondly because it was found that it was not advisable to open any furnace door when the fan was running unless all the draught dampers were closed on account of blow back of flame.

This vessel machinery in my opinion is eligible for record F.L.M.C. 9-15

The amount of Entry Fee ... £ : :
Special fee due *£ 26 0 0*
Donkey/Boiler Fee *£ 13 0 0*
Travelling Expenses (if any) *£ 52 0 0*

L. Davis G. A. Dyden Esq
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute
Assigned

FRI OCT 19 1919
TUE MAY 10 1921
+ L. D. B. 9. 18. F. D.
MACHINERY CERTIFICATE WRITTEN
FRI JUL 30 1920

It is submitted that this vessel is eligible for THE RECORDS + L.M.C. 9.18 F.D.
WATER TUBE BOILERS SUBJECT TO ANNUAL SURVEY
Lloyd's Register Foundation

SUNDERLAND
Certificates (if required) to be sent to the Surveyors or to the office of the Committee's Minute.