

Rpt. 4.

REPORT ON MACHINERY.

Received at London Office

THU. 20. JAN. 1916

TUE. 7-MAR. 1916

19. JAN 1916

Port of *Sunderland.*

Date of writing Report

When handed in at Local Office

Date, First Survey

25 Mar '14 Last Survey 26 Feb 1916

(Number of Visits)

Gross 4495

Net 2851

No. in Survey held at *Sunderland.*Reg. Book. 25 in Reg. on the *S.S. Kerry Range.*Master Built at *Newcastle* By whom built *Northumberland S.B. Cold* When built *1916*Engines made at *Sunderland* By whom made *Richardsons Westgarth Cold* when made *1916*Boilers made at *D.* By whom made *D.* when made *1916*Registered Horse Power Owners *Lunnis, Withy Cold.* Port belonging to *Liverpool.*Nom. Horse Power as per Section 28 *535* Is Refrigerating Machinery fitted for cargo purposes *No* Is Electric Light fitted *Yes*No. of Cylinders *3* No. of Cranks *3*DIA. OF CYLINDERS *26-43-73* Length of Stroke *48* Revs. per minute *70* Dia. of Screw shaft *14.7* Material of screw shaft *6.2*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 tightin the propeller boss *Yes* If the liner is in more than one length are the joints burned *Yes* If the liner does not fit tightly at the partbetween the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive *Yes* If twoliners are fitted, is the shaft lapped or protected between the liners *Yes* Length of stern bush *5-12*Dia. of Tunnel shaft *13.06* Dia. of Crank shaft journals *13.71* Dia. of Crank pin *14.2* Size of Crank webs *27 1/2 x 9* Dia. of thrust shaft undercollars *14* Dia. of screw *18.0* Pitch of Screw *17.0* No. of Blades *4* State whether moveable *No* Total surface *100 sq*No. of Feed pumps *2* Diameter of ditto *8* Stroke *21* Can one be overhauled while the other is at work *Yes*No. of Bilge pumps *2* Diameter of ditto *4* Stroke *27* Can one be overhauled while the other is at work *Yes*No. of Donkey Engines *2* Sizes of Pumps *7 1/2 x 5 x 6 duplex 9 x 11 x 10 rotary* No. and size of Suctions connected to both Bilge and Donkey pumpsIn Engine Room *2 of 3 1/2" & 2 of 3 1/2" in stokehold* In Holds, &c. *two each of 3 1/2" dia in Nos. 1, 2 & 3 holds*No. of Bilge Injections *1* sizes *8* Connected to condenser, or to circulating pump *C. pump* Is a separate Donkey Suction fitted in Engine room & size *Yes, 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 *none*Are all connections with the sea direct on the skin of the ship *Yes* Are they Valves or Cocks *both*Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold 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 *none* How are they protected *Yes*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 *28/9/15* of Stern Tube *7.12.15* Screw shaft and Propeller *7.12.15*Is the Screw Shaft Tunnel watertight *Yes* Is it fitted with a watertight door *Yes* worked from *upper platform.*Manufacturers of Steel *Spencer - Sons Ltd. Newburn.*BOILERS, &c.—(Letter for record *S*)Total Heating Surface of Boilers *8060 sq* Is Forced Draft fitted *Yes* No. and Description of Boilers *3 Cylindrical Multi Single E*Working Pressure *180 lbs sq* Tested by hydraulic pressure to *360 lbs sq* Date of test *1.4.15* No. of Certificate *3293*Can each boiler be worked separately *Yes* Area of fire grate in each boiler *60 sq* No. and Description of Safety Valves toeach boiler *2 - spring loaded* Area of each valve *8.3 sq* Pressure to which they are adjusted *185 lbs sq* Are they fitted with easing gear *Yes*Smallest distance between boilers or uptakes and bunkers or woodwork *3 feet* Mean dia. of boilers *15.6 3/16* Length *12'0"* Material of shell plates *steel*Thickness *1 1/32* Range of tensile strength *28,963-20* Are the shell plates welded or flanged *no* Descrip. of riveting: cir. seams *D.R. Lap*long. seams *T.R.A.B. steps* Diameter of rivet holes in long. seams *1 1/32* Pitch of rivets *9"* Lap of plates or width of butt straps *17"*Per centages of strength of longitudinal joint *87.4* Working pressure of shell by rules *183* Size of manhole in shell *16" x 12"*Size of compensating ring *flanged* No. and Description of Furnaces in each boiler *3 Morison* Material *steel* Outside diameter *4'7 1/2*Length of plain part *top 19 1/2* Thickness of plates *bottom 32* Description of longitudinal joint *welded* No. of strengthening rings *1*Working pressure of furnace by the rules *191.5* Combustion chamber plates: Material *steel* Thickness: Sides *3/4* Back *1/2* Top *3/4* Bottom *7/8*Pitch of stays to ditto: Sides *10 1/2 x 10* Back *9 1/2 x 8 3/4* Top *10 1/2 x 10* If stays are fitted with nuts or riveted heads *no* Working pressure by rules *180* End plates in steam space:Material of stays *steel* Diameter at smallest part *1.8* Area supported by each stay *105* Working pressure by rules *182* Material of stays *steel*Material *steel* Thickness *1 1/32* Pitch of stays *2 1/4 x 16* How are stays secured *d nuts & washers* Working pressure by rules *182* Material of Front plates at bottom *steel*Diameter at smallest part *6.1* Area supported by each stay *248* Working pressure by rules *182* Material of Front plates at bottom *steel*Thickness *25/32* Material of Lower back plate *steel* Thickness *27/32* Greatest pitch of stays *13 1/2 x 9 1/2* Working pressure of plate by rules *184*Diameter of tubes *2 1/2* Pitch of tubes *3 3/4 x 3 1/2* Material of tube plates *steel* Thickness: Front *25/32* Back *25/32* Mean pitch of stays *10 1/16*Pitch across wide water spaces *14* Working pressures by rules *185* Girders to Chamber tops: Material *steel* Depth andthickness of girder at centre *9 1/2 x 13 1/4* Length as per rule *2'5 3/4* Distance apart *10 1/2* Number and pitch of stays in each *2 @ 10"*Working pressure by rules *189* Superheater or Steam chest; how connected to boiler *Can the superheater be shut off and the boiler worked*separately *Yes* Diameter *Length* Thickness of shell plates *Material* Description of longitudinal joint *Diam. of rivet*holes *Pitch of rivets* Working pressure of shell by rules *Diameter of flue* Material of flue plates *Thickness*If stiffened with rings *Distance between rings* Working pressure by rules *End plates: Thickness* How stayed *Yes*Working pressure of end plates *Area of safety valves to superheater* Are they fitted with easing gear *Yes*

Is a Report also sent on the hull of the ship?

Lloyd's Register Foundation

W228-0141

IS A DONKEY BOILER FITTED?

No

If so, is a report now forwarded?

SPARE GEAR. State the articles supplied:—

Two top end & 2 bottom end bolts, 2 main bearing bolts, 1 set of coupling bolts, 1 set of feed and bidge pump valves, H.P. piston rings, a quantity of assorted bolts nuts & iron, spare propeller & propeller shaft & minor details.

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

Rudene H. Russell

Manufacturer.

Dates of Survey while building	During progress of work in shops - -	1914 Mar 25 Apr 28 May 11 19 21 27 Jun 24 Jul 1 9 27 Aug 21 31 Sep 17 24 Oct 2 9 12 14 16 21 23 26 29 Nov 3 13 18 21 23
	During erection on board vessel - -	Dec 4 22 Jan 12 15 20 26 27 Feb 1 4 5 10 18 23 Mar 9 11 15 18 22 24 25 29 31 Apr 1 9 22 May 11 17 Jun 22 24 28 30
	Total No. of visits	Nov 16 18 23 29 Dec 2 7 11 13 29 30 31 Jan 5 8 10 13 13 14 (76) + 3

Is the approved plan of main boiler forwarded herewith

Yes

Is the approved plan of main boiler forwarded herewith

Yes

“ “ “ donkey “ “

Dates of Examination of principal parts—Cylinders 22.6.15 Slides 22.6.15 Covers 22.6.15 Pistons 22.6.15 Rods 22.6.15

Connecting rods 22.6.15 Crank shaft 17.12.15 Thrust shaft 7.12.15 Tunnel shafts 7.12.15 Screw shaft 7.12.15 Propeller 7.12.15

Stern tube 7.12.15 Steam pipes tested 12.6.15 Engine and boiler seatings 8.10.15 Engines holding down bolts 10.1.16

Completion of pumping arrangements 12.1.16 Boilers fixed 10.1.16 Engines tried under steam 13.1.16

Main boiler safety valves adjusted 13.1.16 Thickness of adjusting washers Port Blr $p \frac{15}{32}$ s $\frac{7}{16}$ Centre Blr $p \frac{1}{2}$ s $\frac{7}{16}$ Abd Blr $p \frac{1}{2}$ s $\frac{7}{16}$

Material of Crank shaft steel Identification Mark on Do. 5591 Material of Thrust shaft steel Identification Mark on Do. 2109

Material of Tunnel shafts iron Identification Marks on Do. same as Material of Screw shafts iron Identification Marks on Do. Do

Material of Steam Pipes wrought iron lap welded ✓ Test pressure 540 lbs. sq. ✓

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 duplicate of a previous case Yes ✓ If so, state name of vessel SS. Krasnoiarst

General Remarks (State quality of workmanship, opinions as to class, &c. To complete the survey, the spare gear requires to be examined. This is to be fitted on board at Newcastle, & the Surveyors have been advised. Also safety valve raising gear to be connected up.

The machinery of this vessel has been built under special survey. The material & workmanship are sound & efficient. The boilers have been tested by hydraulic pressure, & the engine boilers tried & examined under steam & all found satisfactory.

The machinery is now in a good safe working condition, reliable in my opinion to have the record of $\frac{1}{2}$ L.M.C. 2,16. on completion of survey.

The spare gun and safety valve casing have now been examined.

It is submitted that
this vessel is eligible for
THE RECORD, + LMC 2-16

The amount of Entry Fee ...	£ 3 :	:	When applied for,
Special ...	£ 46 :	15 :	19. JAN 1916
Donkey Boiler Fee ...	£ :	:	When received,
Travelling Expenses (if any) £	:	:	19.15

Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute FRI. 10 MAR. 1916

Assigned

+ LMC 2:16

70
Machinery Certificate
Written