

REPORT ON MACHINERY

No. 26581

1916

Received at London Office

Date of writing Report 19 When handed in at Local Office -7 DEC 1915 Port of SUNDERLAND.

in Survey held at SUNDERLAND Date, First Survey 13 July '15 Last Survey 19

Book. on the steel s.s. Alto Built at Londonderry By whom built North of Ireland S.B. & Co. Ltd. Tons Gross Net When built 1915.

Engines made at Sunderland By whom made Richardsons, Westgarth & Co. Ltd. when made 1915.

Motors made at S. By whom made S. when made 1915.

Registered Horse Power Owners Pelton S.S. Coy. Ltd. Port belonging to Newcastle

Com. Horse Power as per Section 28 243 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted Yes

Engines, &c.—Description of Engines Triple expansion No. of Cylinders three No. of Cranks three

Dia. of Cylinders 21.34.56 Length of Stroke 39 Revs. per minute 65 Dia. of Screw shaft as per rule 11.92 as fitted 12.1/2 Material of screw shaft 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

Is 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 4.2 1/4

Dia. of Tunnel shaft as per rule 10.49 as fitted 10.5/8 Dia. of Crank shaft journals as per rule 11.02 as fitted 11/8 Dia. of Crank pin 11 3/4 Size of Crank webs 17 1/2 x 7 Dia. of thrust shaft under

rollers 11 1/8 Dia. of screw 14.9 Pitch of Screw 15.3 No. of Blades 4 State whether moveable no Total surface 70.8 sq

No. of Feed pumps 2 Diameter of ditto 2 3/4 Stroke 24 Can one be overhauled while the other is at work Yes

No. of Bilge pumps 2 Diameter of ditto 3 1/2 Stroke 24 Can one be overhauled while the other is at work Yes

No. of Donkey Engines two Sizes of Pumps 11 x 13 x 12 4 6 x 4 x 6 No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room 4-3 In Holds, &c. 4-3-4 1-2 1/2

No. of Bilge Injection One size 3 Connected to condenser, or to circulating pump Pump separate Donkey Suction fitted in Engine room & size Yes-3 1/2

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

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 Four hold suction How are they protected Wood casings

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 15-11-15 of Stern Tube 1-12-15 Screw shaft and Propeller 6-12-15

Is the Screw Shaft Tunnel watertight Yes Is it fitted with a watertight door Yes worked from Top Platform Engine Room

BOILERS, &c.—(Letter for record S) Manufacturers of Steel John Spencer Sons Leeds Forge

Total Heating Surface of Boilers 4164 sq ft Is Forced Draft fitted no No. and Description of Boilers two S.E. cyl Multi.

Working Pressure 180 lbs Tested by hydraulic pressure to 360 lbs Date of test 15.9.15 No. of Certificate 3314

Can each boiler be worked separately Yes Area of fire grate in each boiler 54 sq ft No. and Description of Safety Valves to

each boiler two spring Area of each valve 8.3 sq in Pressure to which they are adjusted 185 lbs Are they fitted with easing gear Yes

Smallest distance between boilers or uptakes and bunkers or woodwork About 10 ft Mean dia. of boilers 14.9 1/2 Length 10.6 Material of shell plates Steel

Thickness 1/32 Range of tensile strength 28.9 to 32 Are the shell plates welded or flanged No Descrip. of riveting: cir. seams J.R. Lap.

long. seams T.R. D Butts Diameter of rivet holes in long. seams 1 3/16 Pitch of rivets 8 1/2 Lap of plates or width of butt straps 16

Per centages of strength of longitudinal joint rivets 85.5 Working pressure of shell by rules 180.5 Size of manhole in shell 16 x 12

Size of compensating ring flanged No. and Description of Furnaces in each boiler 3 Morrison Material Steel Outside diameter 3.11 1/2

Length of plain part top Thickness of plates crown 19.55 Description of longitudinal joint welded No. of strengthening rings

bottom 19.32 Working pressure of furnace by the rules 199 3/4 Combustion chamber plates: Material Steel Thickness: Sides 3/4 Back 1/16 Top 3/4 Bottom 13/16

Pitch of stays to ditto: Sides 11 1/2 x 9 Back 10 x 8 7/8 Top 11 1/2 x 9 If stays are fitted with nuts or riveted heads nuts Working pressure by rules 182

Material of stays steel Area at smallest part 1.788 Area supported by each stay 88.75 Working pressure by rules 181 End plates in steam space:

Material steel Thickness 1/32 Pitch of stays 20 7/8 x 20 How are stays secured Obli nuts Working pressure by rules 180 Material of stays steel

Area at smallest part 7.24 Area supported by each stay 400.75 Working pressure by rules 184 Material of Front plates at bottom Steel

Thickness 27/32 Material of Lower back plate steel Thickness 27/32 Greatest pitch of stays 13 1/2 x 8 7/8 Working pressure of plate by rules 188

Diameter of tubes 3 1/4 Pitch of tubes 4 1/2 x 4 1/4 Material of tube plates steel Thickness: Front 27/32 Back 27/32 Mean pitch of stays 11

Pitch across wide water spaces 14 1/2 Working pressures by rules 204 Girders to Chamber tops: Material steel Depth and

thickness of girder at centre 9 3/4 x 1 1/2 Length as per rule 3 1/2 Distance apart 11 1/2 Number and pitch of stays in each two of 9

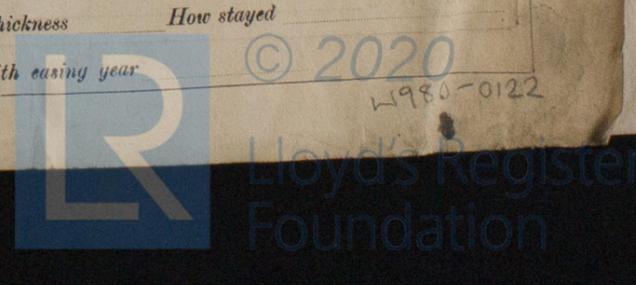
Working pressure by rules 186 Superheater or Steam chest; how connected to boiler Can the superheater be shut off and the boiler worked

separately 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

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:— *1 C. Iron propeller; set main bearing set top end + set bottom end bolts; set coupling bolts; set for helge pump valves; boiler main and donkey check valves.*

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

Fredrick Russell

Manufacturer.

ASSISTANT MANAGER

Dates of Survey while building { During progress of work in shops --- 1915 Jul 12, Sept 8, 15, 17, 18, 27 Oct. 5, 7, 8, Nov. 5, 8, 13.
During erection on board vessel --- 1915: Nov 15, Dec 1, 6, 18, 30, 1916, Jan 31, Feb 7, 10.
Total No. of visits *20*

Is the approved plan of main boiler forwarded herewith *Yes*

Dates of Examination of principal parts—Cylinders *8. 9. 15* Slides *17. 9. 15* Covers *8. 9. 15* Pistons *8. 9. 15* Rods *17. 9. 15*
Connecting rods *8. 9. 15* Crank shaft *7. 10. 15* Thrust shaft *7. 10. 15* Tunnel shafts *7. 10. 15* Screw shaft *7. 10. 15* Propeller *7. 10. 15*
Stern tube *12. 11. 15* Steam pipes tested *31-1-16* Engine and boiler seatings *1-12-15* Engines holding down bolts *31-1-16*
Completion of pumping arrangements *10-2-16* Boilers fixed *31-1-16* Engines tried under steam *7-2-16*
Main boiler safety valves adjusted *7-2-16* Thickness of adjusting washers *7-11-16*

Material of Crank shaft *S* Identification Mark on Do. *LR J.T.F.* Material of Thrust shaft *S* Identification Mark on Do. *LR J.T.F.*
Material of Tunnel shafts *S* Identification Marks on Do. *LR J.T.F.* Material of Screw shafts *W.I.* Identification Marks on Do. *LR J.T.F.*
Material of Steam Pipes *W. Iron* Test pressure *540 lbs*

Is an installation fitted for burning oil fuel *No* 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 *No* If so, state name of vessel *✓*

General Remarks (State quality of workmanship, opinions as to class, &c.) *Machinery and Boilers built under Special Survey. Material & workmanship good. Boilers tested by hydraulic pressure found satisfactory. Engines & boilers dispatched to Londonderry to be refitted on board.*

Engines and boilers securely fitted on board, and tried under steam. In my opinion, this vessel will be eligible for record + L.M.C. on completion of survey, as per copy of letter sent to Newcastle Survey Committee advised.
R. J. Beveridge, Belfast.

SUNDERLAND.

Certificate (if required) to be sent to.

The amount of Entry Fee ... £ *2* : - : - :
Special { ... £ *21* : *9* : - :
Donkey Boiler Fee { ... £ *10* : *14* : - :
Travelling Expenses (if any) £ *11-18-0* : - : - :
Incurred at Belfast 11-18-0 (Advised) 19-2-16
Committee's Minute *11-18-0 19-2-16*
Assigned *TUE. 4 APR 1916*
th. m. c. 2. 16

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

MACHINERY CERTIFICATE WRITTEN.

