

REPORT ON MACHINERY.

No. 26320
MON. JAN. 4 - 1915

Received at London Office

Date of writing Report 19 When handed in at Local Office 2.1.14 Port of SUNDERLAND.
No. in Survey held at Sunderland Date, First Survey 12 Aug. Last Survey Dec 27 1914.
Reg. Book. (Number of Visits 28)

Supp 53 on the new steel 9/8 "ARKLESIDE".

Master J. G. Russell Built at Middlesbrough By whom built W. Harkness & Sons Ltd No. 208 When built 1914
Engines made at Sunderland By whom made Maclellan & Pollock Ltd (No. 255) when made 1914
Boilers made at Sunderland By whom made Maclellan & Pollock Ltd (No. 255) when made 1914
Registered Horse Power Owners Rose Bros Port belonging to Sunderland
Nom. Horse Power as per Section 28 115 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted no

ENGINES, &c.—Description of Engines Triple expansion No. of Cylinders 3 No. of Cranks 3
Dia. of Cylinders 15 1/2, 25, 41 Length of Stroke 30 Revs. per minute 84 Dia. of Screw shaft as per rule 9 3/4 Material of screw shaft steel
Is the screw shaft fitted with a continuous liner the whole length of the stern tube no liners Is the after end of the liner made water tight in the propeller boss
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 3-1 3/4
Dia. of Tunnel shaft as per rule 7 5/8 Dia. of Crank shaft journals as per rule 8 3/4 Dia. of Crank pin 8 1/2 Size of Crank webs 12 1/2 Dia. of thrust shaft under collars 8 1/2 Dia. of screw 10-6 Pitch of Screw 13-9 No. of Blades 4 State whether moveable no Total surface 44
No. of Feed pumps 2 Diameter of ditto 2 1/4 Stroke 15 Can one be overhauled while the other is at work yes
No. of Bilge pumps 2 Diameter of ditto 2 1/4 Stroke 15 Can one be overhauled while the other is at work yes
No. of Donkey Engines 2 Sizes of Pumps 5 1/4 & 4 x 10. 6 & 7 x 7 No. and size of Suctions connected to both Bilge and Donkey pumps In Engine Room 4. of 2. In Holds, &c. two of 2.

No. of Bilge Injections 1 sizes 3 1/2 Connected to condenser, or to circulating pump CP. Is a separate Donkey Suction fitted in Engine room & size 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 How are they protected
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 15/12/1914 Stern Tube 15-12-1914 Screw shaft and Propeller 16. 12. 1914
Is the Screw Shaft Tunnel watertight none Is it fitted with a watertight door machy aft. worked from

BOILERS, &c.—(Letter for record S) Manufacturers of Steel John Spence & Sons Ltd
Total Heating Surface of Boilers 1975 1/2 Is Forced Draft fitted no No. and Description of Boilers one single ended marine
Working Pressure 180 Tested by hydraulic pressure to 360 Date of test 16-11-14 No. of Certificate 3259
Can each boiler be worked separately Area of fire grate in each boiler 60 sq ft No. and Description of Safety Valves to each boiler two direct spring Area of each valve 5.940 Pressure to which they are adjusted 105. Are they fitted with easing gear yes
Smallest distance between boilers or uptakes and bunkers or woodwork 15 Mean dia. of boilers 14-9 Length 10-9 Material of shell plates steel
Thickness 1 5/8 Range of tensile strength 29-33 Are the shell plates welded or flanged no Descrip. of riveting: cir. seams W.B.S.T.R.
long. seams W.B.S.T.R. Diameter of rivet holes in long. seams 1 1/4 Pitch of rivets 8 9/16 Lap of plates or width of butt straps 18 5/16
Per centages of strength of longitudinal joint rivets 92 plate 85.4 Working pressure of shell by rules 181 Size of manhole in shell 16 x 12
Size of compensating ring 27 x 29 x 1 5/8 No. and Description of Furnaces in each boiler 3 plain Material steel Outside diameter 3-9 3/4
Length of plain part top 7 1/4 Thickness of plates crown 1 1/2 bottom 1 1/8 Description of longitudinal joint welded No. of strengthening rings none
Working pressure of furnace by the rules 185 Combustion chamber plates: Material steel Thickness: Sides 7/8 Back 7/8 Top 7/8 Bottom 1 1/8
Pitch of stays to ditto: Sides 9 1/2 x 9 Back 9 x 9 Top 9 x 9 If stays are fitted with nuts or riveted heads nuts in use Working pressure by rules 185
Material of stays steel Diameter at smallest part 2-050 Area supported by each stay 99.50 Working pressure by rules 183 End plates in steam space:
Material steel Thickness 1 1/2 Pitch of stays 17 1/4 x 14 1/2 How are stays secured D.N. Working pressure by rules 181 Material of stays steel
Diameter at smallest part 4.57 Area supported by each stay 257.60 Working pressure by rules 184 Material of Front plates at bottom steel
Thickness 1 1/8 Material of Lower back plate steel Thickness 1 3/8 Greatest pitch of stays 12 5/8 x 9 Working pressure of plate by rules 190
Diameter of tubes 3 1/4 Pitch of tubes 4 1/2 x 4 1/2 Material of tube plates steel Thickness: Front 1 3/16 Back 1 3/16 Mean pitch of stays 11 1/4
Pitch across wide water spaces 4 7/8 Working pressures by rules 218 Girders to Chamber tops: Material steel Depth and thickness of girder at centre 20 8 1/2 x 13 Length as per rule 30 5/8 Distance apart 9 Number and pitch of stays in each 2 @ 9
Working pressure by rules 193 Superheater or Steam chest; how connected to boiler none 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

VERTICAL DONKEY BOILER— Manufacturers of Steel

No. _____ Description _____

Made at _____ By whom made _____ When made _____ Where fixed _____

Working pressure tested by hydraulic pressure to _____ Date of test _____ No. of Certificate _____ Fire grate area _____ Description of Safety _____

Valves _____ No. of Safety Valves _____ Area of each _____ Pressure to which they are adjusted _____ Date of adjustment _____

If fitted with easing gear _____ If steam from main boilers can enter the donkey boiler _____ Dia. of donkey boiler _____ Length _____

Material of shell plates _____ Thickness _____ Range of tensile strength _____ Descrip. of riveting long. seams _____

Dia. of rivet holes _____ Whether punched or drilled _____ Pitch of rivets _____ Lap of plating _____ Per centage of strength of joint _____ Rivets _____ Plates _____

Working pressure of shell by rules _____ Thickness of shell crown plates _____ Radius of do. _____ No. of stays to do. _____ Dia. of stays _____

Diameter of furnace Top _____ Bottom _____ Length of furnace _____ Thickness of furnace plates _____ Description of joint _____

Working pressure of furnace by rules _____ Thickness of furnace crown plates _____ Radius of do. _____ Stayed by _____

Diameter of uptake _____ Thickness of uptake plates _____ Thickness of water tubes _____ Dates of survey _____

SPARE GEAR. State the articles supplied:— *Spawl. propeller, two top and bottom end bolts & nuts; set of main bearing nuts; set of coupling bolts; set of feed & bilge pump valves; assorted nut & bolts & iron of various sizes*

The foregoing is a correct description,

MAO COLL & POLLJOK LTD.

Manufacturer.

Ship MacColl
Managing Director

Dates of Survey while building { During progress of work in shops -- } 1914 Aug 12, 14, 19, 21, 27, Sep 8, 11, 17, 18, 22, 28 Oct 16, 19, 22, 23, 29, Nov 2, 9, 11, 16
{ During erection on board vessel -- } Dec 14, 15, 16, 17, 22
Total No. of visits (22)

Is the approved plan of main boiler forwarded herewith *yes*
" " " donkey " " " *yes*

Dates of Examination of principal parts— Cylinders 14-10-14 Slides 29-10-14 Covers 6-10-14 Pistons 8-9-14 Rods 8-9-14
Connecting rods 11-9-14 Crank shaft 21-8-14 Thrust shaft 19-8-14 Tunnel shafts none Screw shaft 19-10-14 Propeller 1-10-14
Stern tube 9-11-14 Steam pipes tested 16-12-1914 Engine and boiler seatings 14-12-1914 Engines holding down bolts 14-12-1914
Completion of pumping arrangements 17-12-1914 Boilers fixed 14-12-1914 Engines tried under steam 17-12-1914
Main boiler safety valves adjusted 17-12-1914 Thickness of adjusting washers 5/16"
Material of Crank shaft *Steel* Identification Mark on Do *3860NDH* Material of Thrust shaft *Steel* Identification Mark on Do *3853AFB*
Material of Tunnel shafts *None* Identification Marks on Do. ✓ Material of Screw shafts *Steel* Identification Marks on Do. *3863AFB*
Material of Steam Pipes *Copper* ✓ Test pressure *400 lbs*

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

*The materials and workmanship are good
The machinery has been constructed under special survey
Engines and boilers examined under full working conditions & found satisfactory*

The machinery and boilers of this vessel have been built under special survey. Examined after steam trial. It is submitted that this vessel is eligible for the record of L.M.C. 12.1914.

It is submitted that this vessel is eligible for THE RECORD, + L M C 12.14.

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|------------------------------------|-------------------|
| The amount of Entry Fee .. £ 2 : - | When applied for, |
| Special .. £ 17 : 5 | When received, |
| Donkey Boiler Fee .. £ : | |
| Travelling Expenses (if any) £ : | |

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

Committee's Minute FRI. JAN. 8 - 1915

Assigned *L.M.C. 12.14*

MACHINERY CERTIFICATE WRITTEN.



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