

REPORT ON MACHINERY.

No. 2771

Received at London Office

Date of writing Report 25-7-1913 When handed in at Local Office 26-7-1913 Port of Sunderland MON. JUL. 28. 1913

No. in Survey held at Sunderland Date, First Survey 24-7-1913 Last Survey 24-7-1913

Reg. Book.

(Number of Visits)

Supp 5 on the new steel S/S "DURLEY CHINE".

Gross 1918

Net 1157

Master F. J. Christie Built at Sunderland By whom built Osborne Graham & Co. When built 1913

Engines made at Sunderland By whom made George Black Ltd (No. 974) when made 1913

Boilers made at Sunderland By whom made George Black Ltd (No. 974) when made 1913

Registered Horse Power Owners Alumbhine S/S Co. Ltd Port belonging to Cardiff

Nom. Horse Power as per Section 28 209 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 20 1/2", 33", 56" Length of Stroke 36" Revs. per minute 65 Dia. of Screw shaft as per rule 11 1/2" Material of screw shaft as fitted 11 3/4" steel

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 3'-11"

Dia. of Tunnel shaft as per rule 10-06" Dia. of Crank shaft journals as per rule 10-56" Dia. of Crank pin 10 5/8" Size of Crank webs 7 1/2" x 16 1/2" Dia. of thrust shaft under

collars 10 3/4" Dia. of screw 14-9" Pitch of Screw 15-6" No. of Blades 4 State whether moveable no Total surface 69.8 sq ft

No. of Feed pumps 2 Diameter of ditto 2 3/4" Stroke 22" Can one be overhauled while the other is at work yes

No. of Bilge pumps 2 Diameter of ditto 3 1/2" Stroke 22" Can one be overhauled while the other is at work yes

No. of Donkey Engines 2 Sizes of Pumps 8 1/2" x 8" 5 1/2" x 3 1/2" x 5" No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room 4 @ 3" In Holds, &c. Forward hold - 2 @ 3"

After hold - 2 @ 2 1/2" (wump) and 1 @ 3" in well. Tunnel well - 1 @ 3"

No. of Bilge Injections 1 sizes 4" Connected to condenser, or to circulating pump b.p. Is a separate Donkey Suction fitted in Engine room & size yes 2 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 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 forward hold suction How are they protected under wood ceiling

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 13-6-13 of Stern Tube 27-6-13 Screw shaft and Propeller 27-6-13

Is the Screw Shaft Tunnel watertight yes Is it fitted with a watertight door yes worked from Top platform

BOILERS, &c.—(Letter for record (5)) Manufacturers of Steel John Spence & Sons Ltd

Total Heating Surface of Boilers 3288 sq ft Is Forced Draft fitted no No. and Description of Boilers Two single ended marine

Working Pressure 180 Tested by hydraulic pressure to 360 Date of test 17-6-13 No. of Certificate 3120

Can each boiler be worked separately yes Area of fire grate in each boiler 50 sq ft No. and Description of Safety Valves to

each boiler Two direct spring Area of each valve 7.06 sq in Pressure to which they are adjusted 185 Are they fitted with easing gear yes

Smallest distance between boilers or uptakes and bunkers on woodwork 1'-8" Mean dia. of boilers 13'-6" Length 10'-6" Material of shell plates steel

Thickness 1 1/2" Range of tensile strength 29 1/2"-33 Are the shell plates welded or flanged no Descrip. of riveting: cir. seams 10R

long. seams TR. 10RS Diameter of rivet holes in long. seams 1 1/8" Pitch of rivets 7 3/8" Lap of plates or width of butt straps 16"

Per centages of strength of longitudinal joint rivets 86.5 plate 85.5 Working pressure of shell by rules 180 Size of manhole in shell 16" x 13"

Size of compensating ring flanged No. and Description of Furnaces in each boiler 3 plain Material steel Outside diameter 3'-3 3/4"

Length of plain part top 6'-3 1/2" bottom 5'-10" Thickness of plates crown 1 1/4" Description of longitudinal joint welded No. of strengthening rings none

Working pressure of furnace by the rules 183 Combustion chamber plates: Material steel Thickness: Sides 1 1/8" Back 4 5/8" Top 1 1/8" Bottom 1 1/8"

Pitch of stays to ditto: Sides 9 1/2" x 9 1/2" Back 10 1/2" x 9 1/2" Top 10" x 9" If stays are fitted with nuts or riveted heads nuts in usual Working pressure by rules 180

Material of stays steel Diameter at smallest part 2-03 sq in Area supported by each stay 936 sq in Working pressure by rules 195 End plates in steam space:

Material steel Thickness 1 3/8" Pitch of stays 18" x 19" How are stays secured WN Working pressure by rules 180 Material of stays steel

Diameter at smallest part 5-930 Area supported by each stay 3420 sq in Working pressure by rules 180 Material of Front plates at bottom steel

Thickness 1 3/16" Material of Lower back plate steel Thickness 2 3/8" Greatest pitch of stays 16 7/4" x 9 Working pressure of plate by rules 180

Diameter of tubes 3 1/4" Pitch of tubes 4 1/2" x 4 1/8" Material of tube plates steel Thickness: Front 1 3/16" Back 3/4" Mean pitch of stays 11"

Pitch across wide water spaces 14 1/2" Working pressures by rules 262 Girders to Chamber tops: Material steel Depth and

thickness of girder at centre 20 7/8" x 8 1/4" Length as per rule 2'-8" Distance apart 10" Number and pitch of stays in each 2 @ 9"

Working pressure by rules 182 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

If not, state whether, and when, one will be sent?

Is a Report also sent on the Hull of the Ship?

27.0 ft.

given as it

Water Capacity.

Tons.

57

86

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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	Pire 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:— Two connecting rod top and bottom end bolts and nuts, two main bearing bolts, one set of coupling bolts, one set of feed and bilge pump valves, iron and bolts of various sizes, one screw shaft and one propeller.

The foregoing is a correct description,
FOR GEORGE CLARK, LIMITED

Manufacturer. *W. S. Bruce*
of Main Engines & Boilers.

Dates of Survey while building	During progress of work in shops --	1912 June 21. Sep 2. Oct 1. 14 Nov 12. Dec 10. 20 Jan 17. Mar 14. 28
	During erection on board vessel ---	Apr 11. 19. May 6. 15. 20. 30. Jun 4. 5. 7. 13. 16. 17. 20. 24. 27. Jul 5. 5. 11. 23. 25
	Total No. of visits	(23)

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

Dates of Examination of principal parts—Cylinders	6-5-13	Slides	11-4-13	Covers	17-4-13	Pistons	20-5-13	Rods	30-5-13
Connecting rods	28-3-13	Crank shaft	7-6-13	Thrust shaft	10-12-12	Tunnel shafts	20-5-13	Screw shaft	7-6-13
Propeller	16-6-13	Stern tube	5-6-13	Steam pipes tested	5, 8-7-13	Engine and boiler seatings	13-6-13	Engines holding down bolts	11-7-13
Completion of pumping arrangements	24-7-13	Boilers fixed	3-7-13	Engines tried under steam	11-7-13				
Main boiler safety valves adjusted	11-7-13	Thickness of adjusting washers	5 1/4 lb. with 2 1/2" Pol. sh. P 13 1/2 5 3/8 full						
Material of Crank shaft	9. steel	Identification Mark on Do.	A134 HK	Material of Thrust shaft	9. steel	Identification Mark on Do.	7882 KH		
Material of Tunnel shafts	9. steel	Identification Marks on Do.	691-2 MB	Material of Screw shafts	9. steel	Identification Marks on Do.	4048 HK & 3743 P		
Material of Steam Pipes	Sap welded steel	Test pressure	540 lbs per sq. in.						

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

The materials and workmanship are good.
The machinery has been made under special survey and is eligible in my opinion for classification and the Record + LMC 7.13

It is submitted that
this vessel is eligible for
THE RECORD. + LMC 7.13

The amount of Entry Fee	£ 2	When applied for	26. 7. 13
Special	£ 30	When received	1. 8. 13
Donkey Boiler Fee	£		
Travelling Expenses (if any)	£		

Committee's Minute

TUE. JUL. 29. 1913

Assigned

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



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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.)