

REPORT ON MACHINERY.

No. 23474

Port of Sunderland.

Received at London Office **WED. 16 OCT 1907**

No. in Survey held at Sunderland. Date, first Survey 6 June 1907 Last Survey 8 October 1907
 Reg. Book. on the Steel Screw Steamer "Ladywood" (Number of Visits 30)
 Master David Jones Built at Sunderland By whom built Stewart Graham & Co. When built 1907
 Engines made at Sunderland By whom made G. Clark & Co. when made do
 Boilers made at do By whom made do when made do
 Registered Horse Power Owners W. France Fenwick & Co. Port belonging to London
 Nom. Horse Power as per Section 28 198 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted no

ENGINES, &c.—Description of Engines Vertical triple fitted amidships No. of Cylinders Three No. of Cranks Three
 Dia. of Cylinders 20 1/2 33 54 Length of Stroke 39 Revs. per minute 65 Dia. of Screw shaft as per rule 12.4 Material of steel screw shaft
 Is the screw shaft fitted with a continuous liner the whole length of the stern tube no 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 no 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 no If two
 liners are fitted, is the shaft lapped or protected between the liners no Length of stern bush 4-2 1/2
 Dia. of Tunnel shaft as per rule 10.32 Dia. of Crank shaft journals as per rule 10.83 Dia. of Crank pin 11 Size of Crank webs 7 1/2 x 16 1/2 Dia. of thrust shaft under
 collars 11 1/2 Dia. of screw 4-10 1/2 Pitch of Screw 16-3 No. of Blades 4 State whether moveable no Total surface 66 sq.
 No. of Feed pumps 2 Diameter of ditto 2 1/2 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 BALLAST FEED 7 1/2 x 8 x 10 6 x 4 x 6 No. and size of Suctions connected to both Bilge and Donkey pumps
 In Engine Room Four 3 dia. In Holds, &c. Fore hold 2 x 3 dia After hold 2 x 2 1/2
Fore peak 2 1/2 Tunnel 2 1/2 1 x 3
 No. of Bilge Injections 1 sizes 4 dia Connected to condenser, or to circulating pump yes Is a separate Donkey Suction fitted in Engine room & size yes 4 dia
 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 no
 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 no
 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 5.9.07 of Stern Tube 27.8.07 Screw shaft and Propeller 18.9.07
 Is the Screw Shaft Tunnel watertight yes Is it fitted with a watertight door yes worked from top platform.

BOILERS, &c.—(Letter for record S.) Manufacturers of Steel J. Phoenix & Son & Newburn Steel Works.
 Total Heating Surface of Boilers 3038 Is Forced Draft fitted no No. and Description of Boilers Two single ended multitubular
 Working Pressure 180 lbs Tested by hydraulic pressure to 360 lbs Date of test 23.8.07 No. of Certificate 2646
 Can each boiler be worked separately yes Area of fire grate in each boiler 45 sq. No. and Description of Safety Valves to
 each boiler two direct spring Area of each valve 6.49 sq. 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 12 Mean dia. of boilers 22.9 3/4 Length 10-0 Material of shell plates steel
 Thickness 1 3/4 Range of tensile strength 28 1/2 to 32 tons Are the shell plates welded or flanged no Descrip. of riveting: cir. seams lap DR.
 long. seams lap DR. Diameter of rivet holes in long. seams 1 1/8 Pitch of rivets 7/16 Lap of plates or width of butt straps 16 3/8
 Per centages of strength of longitudinal joint rivets 95 plate 84.87 Working pressure of shell by rules 183 Size of manhole in shell End 16 x 13
 Size of compensating ring Dished end No. and Description of Furnaces in each boiler 3 plain Material steel Outside diameter 37.5
 Length of plain part top 70 1/4 bottom 70 Thickness of plates crown 1/16 bottom 1/16 Description of longitudinal joint bold No. of strengthening rings no
 Working pressure of furnace by the rules 180.6 Combustion chamber plates: Material steel Thickness: Sides 1/16 Back 1/16 Top 1/16 Bottom 1/16
 Pitch of stays to ditto: Sides 10 x 8 1/4 Back 9 1/2 x 9 1/2 Top 10 x 9 If stays are fitted with nuts or riveted heads nuts Working pressure by rules 180.6
 Material of stay steel Diameter at smallest part 1 1/2 Area supported by each stay 900 Working pressure by rules 203 End plates in steam space:
 Material steel Thickness 1 1/16 Pitch of stays 21 x 18 1/4 How are stays secured nuts Working pressure by rules 180 lbs Material of stays steel
 Diameter at smallest part 2 1/8 Area supported by each stay 3400 Working pressure by rules 191 Material of Front plates at bottom steel
 Thickness 1 3/16 Material of Lower back plate steel Thickness 3/8 Greatest pitch of stays 14 1/2 Working pressure of plate by rules 80.5
 Diameter of tubes 2 1/4 Pitch of tubes 4 1/2 x 4 1/2 Material of tube plates steel Thickness: Front 1/16 Back 1/16 Mean pitch of stays 10
 Pitch across wide water spaces 14 1/4 Working pressures by rules 262 Girders to Chamber tops: Material steel Depth and
 thickness of girder at centre 7 1/2 x 1 1/4 Length as per rule 21 Distance apart 9 Number and pitch of stays in each 2, 10
 Working pressure by rules 185 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

11487-0036

VERTICAL DONKEY BOILER— Manufacturers of Steel

No. _____ Description Appendix
 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 _____ Stayed by _____
 Diameter of uptake _____ Thickness of uptake plates _____ Thickness of water tubes _____ Dates of survey _____

SPARE GEAR. State the articles supplied:— 1 Propeller & coupling bolts, 2 Each bolt + nuts for top & bottom ends & main bearing, valves for all pumps, piston & pump bolts, nuts, iron & sundries

The foregoing is a correct description,
 FOR GEORGE CLARK, LIMITED
James C. Clark Manufacturers of main Engines & boilers only

Dates of Survey while building { During progress of work in shops - } 07 June 6.10.20, July 2.4.8.15.18.22.25.29. Aug 1.7.12.15.19.23.27.29. Sept 4.5.10.12.15.
 { During erection on board vessel - } 20.21.23.26. Oct 2.8.
 Total No. of visits 30 Is the approved plan of main boiler forwarded herewith Yes
 " " " donkey " " " Yes

Dates of Examination of principal parts—Cylinders 27.07 Slides 12.8.07 Covers 25.4.07 Pistons 4.9.07 Rods 4.9.07
 Connecting rods 10.9.07 Crank shaft 29.4.07 Thrust shaft _____ Tunnel shafts _____ Screw shaft 12.8.07 Propeller 7.8.07
 Stern tube 7.8.07 Steam pipes tested 21.9.07 Engine and boiler seatings 27.8.07 Engines holding down bolts 20.9.07
 Completion of pumping arrangements 2.10.07 Boilers fixed 2.10.07 Engines tried under steam 2.10.07
 Main boiler safety valves adjusted 2.10.07 Thickness of adjusting washers P 5/8 S 3/4 P 5/8 S 3/4
 Material of Crank shaft Subject Identification Mark on Do. 5725 335 G Material of Thrust shaft Subject Identification Mark on Do. 2078 P.A.
 Material of Tunnel shafts do Identification Marks on Do. 129.133.134 H.K. Material of Screw shafts Subject Identification Marks on Do. 335 G
 Material of Steam Pipes Length solid drawn deprim copper 4 1/2 dia 5ms Test pressure 400 lbs

General Remarks (State quality of workmanship, opinions as to class, &c.)
The machinery of this vessel has been constructed under special survey, the materials & workmanship found good and efficient, fitted & tested in accordance with the rules & eligible in my opinion for classification with record of + L.M.C. 10.07.

It is submitted that this vessel is eligible for THE RECORD. L.M.C. 10.07.

J.P.C. 16.10.07
R.S. 16.10.07

The amount of Entry Fee... £ 2 : : When applied for, 15.10.1907
 Special ... £ 29 : 14 : :
 Donkey Boiler Fee ... £ : : :
 Travelling Expenses (if any) £ : : :
 When received, 17/10/07

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

Committee's Minute FRI. 18 OCT 1907
 Assigned + L.M.C. 10.07



Certificate (if required) to be sent to

The Surveyors are requested not to write on or below the space for Committee's Minute.

MACHINELY WRITTEN