

REPORT ON MACHINERY.

Port of Sunderland

Received at London Office

19

No. in Survey held at Sunderland Date, first Survey 12th June 1900 Last Survey 27th Feb'y 1901
g. Book. (Number of Visits 25) Tons { Gross 3741
Net 2415Sup on the S. S. 'Cheltenham' When built 1901Master John Low Built at Sunderland By whom built W. D. Doxford & Sons Ltd when made 1901Engines made at Sunderland By whom made W. D. Doxford & Sons Ltd when made 1901Pilers made at Sunderland By whom made W. D. Doxford & Sons Ltd when made 1901Registered Horse Power Owners Galbraith, Pembroke & Co. Port belonging to Londonom. Horse Power as per Section 28 307 Is Refrigerating Machinery fitted No Is Electric Light fitted NoENGINES, &c.—Description of Engines Dr. Compound No. of Cylinders 3 No. of Cranks 3Dia. of Cylinders 24 1/2" x 40" x 66 1/2" Length of Stroke 42" Revs. per minute 60 Dia. of Screw shaft 12.5" Lgth. of stern bush 8' 4"Dia. of Tunnel shaft 11.3" Dia. of Crank shaft journals 11.9" Dia. of Crank pin 1' 0 1/2" Size of Crank webs 16 1/2" x 8 1/2" Dia. of thrust shaft underCollars 1' 0 1/2" Dia. of screw 17' 3" Pitch of screw 18' 3" No. of blades 4 State whether moveable No Total surface 91 sqNo. of Feed pumps 2 Diameter of ditto 4" Stroke 28" Can one be overhauled while the other is at work YesNo. of Bilge pumps 2 Diameter of ditto 4" Stroke 28" Can one be overhauled while the other is at work YesNo. of Donkey Engines 2 Sizes of Pumps 9x9 - 6x4x6 No. and size of Suctions connected to both Bilge and Donkey pumpsIn Engine Room 3 of 3 1/2" In Holds, &c. two in each hold of 3 1/2"Tunnel 2 1/2" No. of bilge injections 2 sizes 5 1/2" & 3 1/2" Connected to condenser, or to circulating pump C.P. Is a 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 NoneAre all connections with the sea direct on the skin of the ship Yes Are they Valves or Cocks BothAre 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 aboveAre 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 YesWhat pipes are carried through the bunkers None How are they protected ✓Are all pipes, cocks, valves, and pumps in connection with the machinery and all boiler mountings accessible at all times YesAre the bilge suction pipes, cocks, and valves arranged so as to prevent any communication between the sea and the bilges YesWhen were stern tube, propeller, screw shaft, and all connections examined in dry dock New vessel Is the screw shaft tunnel watertight YesIs it fitted with a watertight door Yes worked from Top platform Is forced draft fitted NoBOILERS, &c.—(Letter for record 5) Total Heating Surface of Boilers 4527.4 sq Working Pressure 180 lbs Tested by hydraulic pressure to 360 lbsNo. and Description of Boilers 2 single ended ordinary Marine Type No. and Description of safety valves toDate of test 17.12.00 Can each boiler be worked separately Yes Area of fire grate in each boiler 54 1/2 sq Are they fitted with easing gear Yeseach boiler 2 Direct spring Area of each valve 9.6 sq Pressure to which they are adjusted 180 lbs Are they fitted with easing gear YesSmallest distance between boilers or uptakes and bunkers or woodwork 18" Mean dia. of boilers 15' 6" Length 10' 9" Material of shell plates SThickness 1 7/32" Range of tensile strength 27 1/2-32 Are they welded or flanged shell ends flanged Descrip. of riveting: cir. seams D R L long seams S R D R LDiameter of rivet holes in long. seams 1 9/16" Pitch of rivets 4 1/2" Lap of plates or width of butt straps 19 1/2"Per centages of strength of longitudinal joint rivets 87 Working pressure of shell by rules 181 lbs Size of manhole in shell 16" x 12"Size of compensating ring flanged No. and Description of Furnaces in each boiler 3 Dightons Material S Outside diameter 3' 11 3/4"Length of plain part top 19 1/2" Thickness of plates bottom 19 1/2" Description of longitudinal joint Weld No. of strengthening rings ✓Working pressure of furnace by the rules 182 lbs Combustion chamber plates: Material S Thickness: Sides 1 1/6" Back 2 3/32" Top 2 3/32" Bottom 1 1/6"Pitch of stays to ditto: Sides 9 3/4" Back 10 1/2" Top 10 1/2" Stays are fitted with nuts or riveted heads Nuts Working pressure by rules 183 lbs End plates in steam space:Material of stays S Diameter at smallest part 1 3/4" Area supported by each stay 9 1/2 sq Working pressure by rules 181 lbs Material of stays SMaterial S Thickness 1 1/8" Pitch of stays 21 x 16" How are stays secured Nuts Working pressure by rules 181 lbs Material of Front plates at bottom SDiameter at smallest part 3" Area supported by each stay 336 sq Working pressure by rules 181 lbs Material of Front plates at bottom SThickness 27/32" Material of Lower back plate S Thickness 1 3/16" Greatest pitch of stays 13" Working pressure of plate by rules 182 lbsDiameter of tubes 3 1/2" Pitch of tubes 4 3/4" Material of tube plates S Thickness: Front 1 5/16" Back 27/32" Mean pitch of stays 9 1/2"Pitch across wide water spaces 13 1/2" Working pressures by rules 185 lbs Girders to Chamber tops: Material S Depth andthickness of girder at centre 12" x 3 1/4" x 2" Length as per rule 37' 4" Distance apart 10" Number and pitch of Stays in each 3 stays 9 3/4"Working pressure by rules 187 lbs Superheater or Steam chest; how connected to boiler None Can the superheater be shut off and the boiler work

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

DONKEY BOILER— No. 1 Description *Single ended 2 furnaces*
 Made at *Sunderland* By whom made *Wm Doxford & Sons Ltd* When made *17-12-00* Where fixed *On Deck*
 Working pressure *90 lbs* tested by hydraulic pressure to *180 lbs* No. of Certificate *1904* Fire grate area *24 sq ft* Description of safety valves *Direct spring*
 No. of safety valves *2* Area of each *5.9 sq ft* Pressure to which they are adjusted *90 lbs* If fitted with easing gear *Yes* If steam from main boilers can enter the donkey boiler *No* Dia. of donkey boiler *8'-6"* Length *8'-6"* Material of shell plates *S* Thickness *7/32"* Range of tensile strength *27-32* Descrip. of riveting long. seams *J. R. Lap* Dia. of rivet holes *27/32"* Whether punched or drilled *drilled* Pitch of rivets *3 1/2"*
 Lap of plating *6 7/8"* Per centage of strength of joint *76.6* Rivets *76.6* Thickness of shell *end* plates *11/16"* Radius of do. *pitch* No. of Stays to do. *12 x 13"*
 Dia. of stays. *1 7/8"* Diameter of furnace *Top 30" Bottom 26"* Length of furnace *5'-6"* Thickness of furnace plates *7/16"* Description of joint *Weld* Thickness of furnace *end* plates *9/16"* Stayed by *screwed stays 9/8"* Working pressure of shell by rules *94 lbs*
 Working pressure of furnace by rules *97 lbs* Diameter of *uptake* *3"* Thickness of uptake plates *✓* Thickness of water tubes *✓*

SPARE GEAR. State the articles supplied:— *Top and bottom end connecting rod, bolts and nuts, two main bearing bolts and nuts, one set of coupling bolts, feed and bilge pump valves, bolts, nuts, and iron assorted propeller etc*

The foregoing is a correct description,

Manufacturer.

WILLIAM DOXFORD & SONS, Limited

Wm Doxford Director

Dates of Survey while building { During progress of work in shops— *1900— June 12. July 30. Oct 11. Nov 9. 15. 20. 30. Dec 6. 10. 17. 19.*
 During erection on board vessel— *1901— Jan 3. 7. 10. 15. 23. Feb 1. 6. 8. 9. 13. 15. 19. 25. 27.*
 Total No. of visits *25*

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

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

Material of screw shaft *Scraper 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 in the propeller boss *Yes* If the liner is in more than one length are the joints burned *One length*
 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 *tight fit* If two liners are fitted, is the shaft lapped or protected between the liners *one liner*

The machinery of this vessel has been constructed under special survey, the material and workmanship being good and efficient, and the engines when tried under steam worked satisfactory.

The pumps, watertight doors, and steam steering gear are in good working order, and the main steam pipes have been tested by hydraulic pressure to 400 lbs per square inch.

In my opinion this vessel is eligible for the notification in the Register Book of * L M C 2-01

It is submitted that this vessel is eligible for THE RECORD * L M C. 2-01.

The amount of Entry Fee. £ 3 : = : When applied for, *14.3.1901*
 Special £ 35 1 : :
 Donkey Boiler Fee £ 2 2 : :
 Travelling Expenses (if any) £

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

Committee's Minute

TUES. MAR 19 1901

Assigned

MACHINERY CERTIFICATE WRITTEN.



Lloyd's Register Foundation