

REPORT ON MACHINERY.

No. 50478.

Port of *Newcastle-on-Tyne*Received at London Office *HL 6 APL 1906*No. in Survey held at *Newcastle-on-Tyne*Date, first Survey *Nov. 25*Last Survey *April 2nd 1906*

Reg. Book.

(Number of Visits *24*)*944 (Sub) on the Steel ss. "Mersey"*Master *S. Arnold* Built at *Newcastle*By whom built *Swan, Hunter & Wigham Richardson* When built *1906*Engines made at *Newcastle*By whom made *Swan, Hunter & Wigham Richardson* When made *1906*Boilers made at *Newcastle*By whom made *Swan, Hunter & Wigham Richardson* When made *1906*

Registered Horse Power

Owners *Lancashire & Yorkshire Ry Co* Port belonging to *Goole*Nom. Horse Power as per Section 28 *342*Is Refrigerating Machinery fitted *no*Is Electric Light fitted *yes*

ENGINES, &c.—Description of Engines

*Inverted triple expansion*No. of Cylinders *3*No. of Cranks *3*Dia. of Cylinders *23, 38, 62*Length of Stroke *42*Revs. per minute *98*Dia. of Screw shaft *as per rule 13.04*Material of *Stainless*Is the screw shaft fitted with a continuous liner the whole length of the stern tube *no liner* Is the after end of the liner made water tight in the propeller boss *no* 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'-6"*Dia. of Tunnel shaft *as per rule 11.475*Dia. of Crank shaft journals *as per rule 12.052*Dia. of Crank pin *12.4*Size of Crank webs *7'8"x9"*Dia. of thrust shaft under collars *12.2*Dia. of screw *14'-3"*Pitch of screw *16'-0"*No. of blades *4*State whether moveable *not*Total surface *6544*No. of Feed pumps *3*Diameter of ditto *1.65 3/4"*Stroke *24"*Can one be overhauled while the other is at work *yes*No. of Bilge pumps *One*Diameter of ditto *2.25 7/8"*Stroke *24"*Can one be overhauled while the other is at work *✓*No. of Donkey Engines *3*Sizes of Pumps *9"x10"x10" - 4"x4"x5"*No. and size of Suctions connected to both Bilge and Donkey pumps *1 1/2" Inspirator*In Holds, &c. *Two 22 in no 2 & 3 holds*In Engine Room *3*each *2 1/2"*No. of bilge injections *One*sizes *7"*Connected to condenser, or to circulating pump *✓* 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 *yes*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 *both*Are they each fitted with a discharge valve always accessible on the plating of the vessel *yes*What pipes are carried through the bunkers *Bilge Pipes*How are they protected *boxed in wood*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*When were stern tube, propeller, screw shaft, and all connections examined in dry dock *When building the screw shaft tunnel watertight*Is it fitted with a watertight door *yes*worked from *Top platform*

BOILERS, &c.—

(Letter for record *2*)Total Heating Surface of Boilers *50264*Is forced draft fitted *yes*No. and Description of Boilers *2, S.E. Cylindrical multitubular*Working Pressure *180 lbs*Tested by hydraulic pressure to *360 lbs*Date of test *23/2/06*Can each boiler be worked separately *yes*Area of fire grate in each boiler *724*No. and Description of safety valves to each boiler *Spring loaded, 2*Area of each valve *110*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 *3'-0"*Mean dia. of boilers *15'-0 3/8"*Length *11'-7 1/2"*Material of shell plates *Steel*Thickness *1 3/16"*Range of tensile strength *284-32*Are they welded or flanged *no*Descrip. of riveting: cir. seams *Double lap*long. seams *treble*No. of rivets *10 BS*Diameter of rivet holes in long. seams *1 1/4"*Pitch of rivets *8 3/8"*Lap of plates or width of butt straps *18 3/8"*Per centages of strength of longitudinal joint *89.2*Working pressure of shell by rules *180 lbs*Size of manhole in shell *17" x 13"*Size of compensating ring *9" x 1 3/16"*No. and Description of Furnaces in each boiler *4 (Brighton)*Material *Steel*Outside diameter *3'-9"*Length of plain part *top*Thickness of plates *bottom*Description of longitudinal joint *welded*No. of strengthening rings *✓*Working pressure of furnace by the rules *184 lbs*Combustion chamber plates: Material *Steel*Thickness: Sides *7/16"*Back *7/16"*Top *7/16"*Bottom *3/32"*Pitch of stays to ditto: Sides *8" x 10"*Back *9" x 10"*Top *9" x 10"*If stays are fitted with nuts or riveted heads *nuts*Working pressure by rules *180 lbs*Material of stays *Iron*Area at smallest part *2.36*Area supported by each stay *900*Working pressure by rules *197 lbs*End plates in steam space: Material *Steel*Thickness *1 3/4"*Pitch of stays *18 x 15 1/2"*How are stays secured *10 1/4" nuts*Working pressure by rules *183 lbs*Material of Front plates at bottom *Steel*Thickness *25/32"*Material of Lower back plate *Steel*Thickness *7/8"*Greatest pitch of stays *12 1/4"*Working pressure of plate by rules *181 lbs*Diameter of tubes *2 1/2"*Pitch of tubes *3 3/4"*Material of tube plates *Steel*Thickness: Front *25/32"*Back *7/16"*Mean pitch of stays *9 3/8"*Pitch across wide water spaces *13 1/2"*Working pressures by rules *280 lbs*Girders to Chamber tops: Material *Steel*Depth and thickness of girder at centre *10 1/2" x 1 1/4"*Length as per rule *2'-10 1/4"*Distance apart *9"*Number and pitch of Stays in each *Two, 10"*Working pressure by rules *182*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 *✓*

DONKEY BOILER—

No. ☒ Description ☒

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

Working pressure _____ tested by hydraulic pressure to _____ No. of Certificate _____ Fire grate area _____ Description of safety valves _____

No. of safety valves _____ Area of each _____ Pressure to which they are adjusted _____ 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 _____ 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 _____

Thickness of furnace crown plates _____ Stayed by _____ Working pressure of shell by rules _____

Working pressure of furnace by rules _____ Diameter of uptake _____ Thickness of uptake plates _____ Thickness of water tubes _____

SPARE GEAR. State the articles supplied:— *Two top end bolts & nuts, two connecting rod bottom end bolts & nuts, two main bearing bolts, one set of coupling bolts, one set of feed & bilge pump valves, quantity of bolts & nuts assorted, Iron of various sizes.*

The foregoing is a correct description,

FOR SWAN, HUNTER & WIGHAM RICHARDSON & WIGHAM *R.A. Wintourley* Manufacturer.

Dates of Survey while building { During progress of work in shops - 1905 Nov. 25 Dec. 1, 15, 22, 28, 1906 Jan. 5, 15, 24, 25, 31, Feb. 12, 14, 19, 23, 27, Mar. 1, 14, 16, 20, 21, 22, 26, 30, Apr. 2. During erection on board vessel - - - - - Total No. of visits *24*

Is the approved plan of main boiler forwarded herewith *Yes.* (Ref. *for dup.*)
" " " donkey " " " *✓*

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

The machinery and boilers for this vessel have been constructed under Special Survey. The materials & workmanship good & efficient.

Engines and boilers examined under steam, and found in satisfactory working order.

All safety valves adjusted under steam.

In my opinion this vessel is now eligible to have the record of + LMC 4.06.

The Report on the Electric Light Installation will be forwarded on the receipt of same from the builders.

Please see Secretary's letter E. March 27th 1906, respecting bilge pumps for this vessel.

It is submitted that this vessel is eligible for THE RECORD *LMC 4.06 F.D. ELEC. LIGHT.*

The amount of Entry Fee... £ *3* : : : When applied for, *5 APR 1906*
Special ... £ *37* : : :
Donkey Boiler Fee ... £ : : :
Travelling Expenses (if any) £ : : : When received, *6.4.06*

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

Committee's Minute

FRI. 6 APR 1906

Assigned

*+ LMC 4.06
F.D. Elec. Light*

MACHINERY CERTIFICATE
WRITTEN.



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Foundation

Certificate (if required) to be sent to Newcastle-on-Tyne.

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