

REPORT ON MACHINERY.

Port of *Newcastle-on-Tyne*

Received at London Office *NOV 2 1901*

No. in Survey held at *Newcastle*

Date, first Survey *July 12^d*

Last Survey *Oct 25th 1901*

Book. *12* on the *5^s FORTUNATUS*

(Number of Visits *25*)

Tons { Gross *2425*
Net *2135*

Master *Frith* Built at *Newcastle* By whom built *Armstrong Whitworth & Co* When built *10-1901*

Machines made at *Newcastle* By whom made *The North Eastern Marine Eng^s & Co* when made *10-1901*

Boilers made at *Newcastle* By whom made *The North Eastern Marine Eng^s & Co* when made *10-1901*

Registered Horse Power Owners *Archibald Currie & Co.* Port belonging to *Melbourne*

Indicated Horse Power as per Section 28 *399 390* Is Refrigerating Machinery fitted *No* Is Electric Light fitted *yes*

GINES, &c.—Description of Engines *Triple* No. of Cylinders *3* No. of Cranks *3*

No. of Cylinders *24 1/2, 41, 66, 8* Length of Stroke *48"* Revs. per minute *75* Dia. of Screw shaft as per rule *14 5/8"* as fitted *15"* Lgth. of stern bush *5-1"*

No. of Tunnel shaft as fitted *13* Dia. of Crank shaft journals as per rule *13 3/8"* as fitted *13 3/8"* Dia. of Crank pin *3 5/8"* Size of Crank webs *25 1/2 x 9"* Dia. of thrust shaft under bars *3 5/8"* Dia. of screw *14.6* Pitch of screw *16.6* No. of blades *4* State whether moceable *yes* Total surface *94 sq ft*

No. of Feed pumps *2* Diameter of ditto *4"* Stroke *26"* Can one be overhauled while the other is at work *yes, also one pair rears feed pumps 7, 9 1/2 x 121"*

No. of Bilge pumps *2* Diameter of ditto *4 1/2"* Stroke *2.6"* Can one be overhauled while the other is at work *yes*

No. of Donkey Engines *5 duplex* Sizes of Pumps *6, 4, 6, 10 1/2, 7, 10, 6, 4 1/2, 6"* No. and size of Suctions connected to both Bilge and Donkey pumps

Engine Room *Iron 3 1/2"* In Holds, &c. *Fore, main & After main holds*

two *3 1/2"* each, After hold well one *3 1/2"*, Lunnel well one *3 1/2"*.

No. of bilge injections *1* sizes *6"* Connected to condenser, or to circulating pump *pump* 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 *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*

Are all pipes 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 *yes*

Are the bilge suction pipes, cocks, and valves arranged so as to prevent any communication between the sea and the bilges *yes*

Were stern tube, propeller, screw shaft, and all connections examined in dry dock *22-10-07* Is the screw shaft tunnel watertight *yes*

Is it fitted with a watertight door *yes* worked from *main deck*

BOILERS, &c.— (Letter for record *S*) Total Heating Surface of Boilers *5280 sq ft* Is forced draft fitted *yes*

No. and Description of Boilers *3 Mult, Single ended* Working Pressure *180 lbs* Tested by hydraulic pressure to *360 lbs*

Date of test *10-9-07* Can each boiler be worked separately *yes* Area of fire grate in each boiler *43 sq ft* No. and Description of safety valves to boiler *2 direct spring* Area of each valve *7.06"* Pressure to which they are adjusted *185 lbs* Are they fitted with easing gear *yes*

Least distance between boilers or uptakes and bunkers or woodwork *12"* Mean dia. of boilers *12-10 23/32"* Length *11.0* Material of shell plates *Steel*

Thickness *5/32"* Range of tensile strength *29.32* Are they welded or flanged *no* Descrip. of riveting: cir. seams *d r lap* long. seams *DBS TR*

Diameter of rivet holes in long. seams *1 3/32"* Pitch of rivets *8 5/16"* Lap of plates or width of butt straps *17 1/8"*

Percentages of strength of longitudinal joint rivets *90.2* Working pressure of shell by rules *206 lbs* Size of manhole in shell end *16 x 12*

plate *85.3*

Compensating ring *flanged in* No. and Description of Furnaces in each boiler *3 Deightons* Material *Steel* Outside diameter *40"*

Thickness of plain part top *1/2"* bottom *1/2"* Description of longitudinal joint *welded* No. of strengthening rings *none*

Working pressure of furnace by the rules *188 lbs* Combustion chamber plates: Material *Steel* Thickness: Sides *1/16"* Back *1/16"* Top *1/16"* Bottom *1/8"*

Thickness of stays to ditto: Sides *9 3/4 x 8 1/4"* Back *9 3/4 x 8 1/4"* Top *9 3/4 x 8 3/4"* If stays are fitted with nuts or riveted heads *Nuts* Working pressure by rules *190 lbs*

Material of stays *Steel* Diameter at smallest part *1 1/2"* Area supported by each stay *85.3"* Working pressure by rules *200 lbs* End plates in steam space: Material *Steel* Thickness *1 3/8"* Pitch of stays *20 x 18"* How are stays secured *D N + W* Working pressure by rules *247 lbs* Material of stays *Steel*

Diameter at smallest part *3 1/16"* Area supported by each stay *360 lbs* Working pressure by rules *201 lbs* Material of Front plates at bottom *Steel*

Thickness *7/8"* Material of Lower back plate *Steel* Thickness *3/4"* Greatest pitch of stays *14 1/2 x dbl* Working pressure of plate by rules *207 lbs*

Diameter of tubes *2 1/2"* Pitch of tubes *3 3/4 x 3 3/4"* Material of tube plates *Steel* Thickness: Front *7/8"* Back *3/4"* Mean pitch of stays *7 1/2"*

Thickness across wide water spaces *14 1/2 x dbl* Working pressures by rules *285 lbs* Girders to Chamber tops: Material *Steel* Depth and thickness of girder at centre *9 1/2 x 2 1/4"* Length as per rule *29"* Distance apart *8 3/4"* Number and pitch of Stays in each *2 - 9 3/4"*

Working pressure by rules *220 lbs* 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 *—*

Pitch of rivets *—* Working pressure of shell by rules *—* Diameter of flue *—* Material of flue plates *—* Thickness *—*

Are they fitted 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. 0 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 _____

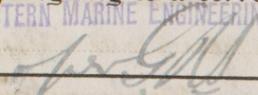
enter the donkey boiler _____ Dia. of donkey boiler _____ Length _____ Material of shell plates _____ Thickness _____ Range of ten-
strength _____ Descrip. of riveting long. seams _____ Dia. of rivet holes _____ Whether punched or drilled _____ Pitch of rivets _____

Lap of plating _____ Per centage of strength of joint _____ Rivets _____ Thickness of shell crown plates _____ Radius of do. _____ No. of Stays to do. _____
Plates _____

Dia. of stays. _____ Diameter of furnace Top _____ Bottom _____ Length of furnace _____ Thickness of furnace plates _____ Description
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 & two bottom end bolts, two main beam bolts, one set-coupling bolts, one set-geece, one set-bidge & one set-donkey feed valves, also one set-Meirs feed pump valves, propeller boss, 2 black propeller shaft, air & circulating pump rods & buckets, 2 feed pump rams etc*

The foregoing is a correct description,

 Manufacturer.

Dates of Survey while building

During progress of work in shops - -	1901. July. 12, 15, 19, 21, 24, 29, 30. Aug. 2, 12, 14, 16, 21, 22, 26. Sep. 10, 17, 20, 25. Oct. 2, 3, 14, 21, 22, 23, 25
Total No. of visits	25

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

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

Material of screw shaft *Bar iron* Is the screw shaft fitted with a continuous liner the whole length of the stern tube *yes, close fit*

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

The machinery of this vessel has been fitted on board under Special Survey the workmanship is sound & good.

The machinery has been tried under steam as required by the Rules & found satisfactory which in my opinion renders the vessel for the record of + L.M.C 10-01 in the Register Book.

It is submitted that
 this vessel is eligible for
 THE RECORD. + L.M.C 10. 01. Etc light.

C.M.
 2. 11. 01.

R.S.
 4. 11. 01

The amount of Entry Fee. £ 3 : 0 : 0 When applied for,
 Special £ 39 : 19 : 0 1 NOV 1901
 Donkey Boiler Fee £ : : : When received,
 Travelling Expenses (if any) £ : : : 14/11/01

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

Committee's Minute TUES. NOV 5 1901

Assigned

+ L.M.C 10, 01 72



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 Foundation

MACHINERY CERTIFICATE
 WRITTEN

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.