

REPORT ON MACHINERY.

Port of Newcastle-on-TyneReceived at London Office SAT. 11 OCT 1902No. in Survey held at Newcastle
Reg. Book.Date, first Survey Jan 16Last Survey Oct 1st 1902(Number of Visits 24)on the S/S "Cymbeline"Gross 4506
Tons Net 2940Master Hopwood Built at NewcastleBy whom built Armstrong Whitworth & CoWhen built 1902Engines made at NewcastleBy whom made Wallsend Shipway & Eng. Cowhen made 1902Boilers made at NewcastleBy whom made Wallsend Shipway & Eng. Cowhen made 1902

Registered Horse Power

Owners Bowditch & Co LtdPort belonging to LiverpoolNom. Horse Power as per Section 28 412Is Refrigerating Machinery fitted noIs Electric Light fitted yes

ENGINES, &c.—Description of Engines

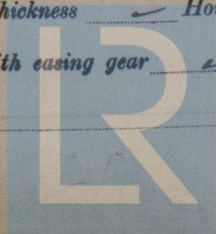
Triple ExpansionNo. of Cylinders 3No. of Cranks 3

Dia. of Cylinders 25" 42" 70" Length of Stroke 48" Revs. per minute 70 Dia. of Screw shaft as per rule 14.2 as fitted 14.2 Agth. of stern bush 5'0"
 Dia. of Tunnel shaft as per rule 7 as fitted none Dia. of Crank shaft journals as per rule 13.2 as fitted 13.2 Dia. of Crank pin 13.2 Size of Crank webs 9x21 1/2 Dia. of thrust shaft under collars 13 3/4 Dia. of screw 17-6" Pitch of screw 18-0" No. of blades 4 State whether moveable yes Total surface 98 sq
 No. of Feed pumps 2 Diameter of ditto 10 1/2" Stroke 26" Can one be overhauled while the other is at work yes
 No. of Bilge pumps 2 Diameter of ditto 4 1/2" Stroke 26" Can one be overhauled while the other is at work yes
 No. of Donkey Engines 2 Sizes of Pumps 10 1/2" x 10", 6 x 7 1/2" x 6" No. and size of Suctions connected to both Bilge and Donkey pumps
 In Engine Room Five 3 1/2" In Holds, &c. one in fore peak 3" two in fore hold 3" one in forward coffer-dam 3" one 6" suction in each cargo tank. Two steam suction in each pump room
 No. of bilge injections 1 sizes 7" Connected to condenser, or to circulating pump yes Is a separate donkey suction fitted in Engine room & size 4 1/2 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
 What pipes are carried through the bunkers none How are they protected yes
 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 now Is the screw shaft tunnel watertight none
 Is it fitted with a watertight door yes worked from yes

BOILERS, &c.—

(Letter for record N)Total Heating Surface of Boilers 7032 sqIs forced draft fitted noNo. and Description of Boilers Three cyl. Simp. EndlessWorking Pressure 180 lbsTested by hydraulic pressure to 360 lbs

Date of test 19/2/02 Can each boiler be worked separately yes Area of fire grate in each boiler 65 1/2 sq No. and Description of safety valves to each boiler Two spring valves Area of each valve 9.62 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 19" Mean dia. of boilers 15-0" Length 11-9" Material of shell plates S
 Thickness 3/16 Range of tensile strength 24-32 Are they welded or flanged no Descrip. of riveting: cir. seams 4 1/2" to 1 1/2" lap long. seams 2 1/2" to 1 1/2" lap
 Diameter of rivet holes in long. seams 1 1/4" Pitch of rivets 8 3/4" Lap of plates or width of butt straps 18 1/2"
 Per centages of strength of longitudinal joint 87.8 rivets 85.7 Working pressure of shell by rules 182 Size of manhole in shell 16 x 12
 Size of compensating ring 16 1/2" No. and Description of Furnaces in each boiler 3 Sims Material S Outside diameter 47 1/2"
 Length of plain part top 9" Thickness of plates bottom 9" Description of longitudinal joint Weld No. of strengthening rings yes
 Working pressure of furnace by the rules 185 Combustion chamber plates: Material S Thickness: Sides 5/8" Back 1/2" Top 5/8" Bottom 3/16"
 Pitch of stays to ditto: Sides 9 x 8 1/2" Back 9 1/2 x 9 1/2" Top 9 x 8 1/2" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 181
 Material of stays Iron Diameter at smallest part 1 5/8" Area supported by each stay 74 sq in Working pressure by rules 200 End plates in steam space: yes
 Material S Thickness 1 1/4" Pitch of stays 19 1/2 x 19 1/2" How are stays secured now Working pressure by rules 184 Material of stays S
 Diameter at smallest part 7.24" Area supported by each stay 380 sq in Working pressure by rules 187 Material of Front plates at bottom S
 Thickness 1" Material of Lower back plate S Thickness 3/32 Greatest pitch of stays 14 1/2" Working pressure of plate by rules 206
 Diameter of tubes 3" Pitch of tubes 4 3/8 x 4 3/8" Material of tube plates S Thickness: Front 1" Back 3/32" Mean pitch of stays 8 1/2"
 Pitch across wide water spaces 14" Working pressures by rules 196 Girders to Chamber tops: Material S Depth and thickness of girder at centre 12 1/2" x 11 1/2" Length as per rule 37 1/2" Distance apart 9" Number and pitch of Stays in each 3, 8 1/4"
 Working pressure by rules 180 Superheater or Steam chest; how connected to boiler yes Can the superheater be shut off and the boiler worked separately yes
 Diameter yes Length yes Thickness of shell plates yes Material yes Description of longitudinal joint yes Diam. of rivet holes yes Pitch of rivets yes Working pressure of shell by rules yes Diameter of flue yes Material of flue plates yes Thickness yes
 If stiffened with rings yes Distance between rings yes Working pressure by rules yes End plates: Thickness yes How stayed yes
 Working pressure of end plates yes Area of safety valves to superheater yes Are they fitted with easing gear yes



DONKEY BOILER— No. *None* 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:— *one propeller shaft, two top end and two bottom end connecting rod bolts and nuts, two main bearing bolts, one at coupling bolts, one at put and bilge pump valves, assorted bolts & nuts. Iron of various sizes.*

The foregoing is a correct description,

Oct 3/02

Manufacturer.

Dates { During progress of work in shops— 1902 Jan. 16, 24, 30, Feb. 5, 10, 19, 21, 26, March 10, April 16, May 5, 15, 26, July 1, 9, 16, August 16, Sep. 1, 9, 17, 18, 22.
of Survey while building { During erection on board vessel — Oct. 1
Total No. of visits 24

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 *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 ✓

The Machinery of this vessel has been built under special survey, the materials and workmanship are sound and good and under the vessel clift in my opinion to have record of + L.M.C. 10.02

It is submitted that this vessel is eligible for THE RECORD — L M C 10.02 *Plus Light*

13.10.02

13.10.02

The amount of Entry Fee. £ *2* : : : When applied for, *10 OCT 1902*
Special .. £ *40 12* : : :
Donkey Boiler Fee .. £ : : : When received, *13.10.02*
Travelling Expenses (if any) £ : : : *13.10.02*

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

Committee's Minute

TUES. 14 OCT 1902

Assigned

+ L M C 10.02

MACHINERY CERTIFICATE WRITTEN.



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