

REPORT ON MACHINERY.

Port of Newcastle

Received at London Office 1UES. 27 SEP 1904

No. in Survey held at Newcastle Date, first Survey May 16 Last Survey 20th Sep 1904
 Reg. Book. 5/5 Cayo Manzanillo (Number of Visits 31)
 Master Wintee Built at Newcastle By whom built Armstrong Whit 16^o Tons { Gross 3001 Net 1909 When built 1904
 Engines made at Newcastle By whom made H & M. Engle L^o when made 1904
 Boilers made at " By whom made " when made 1904
 Registered Horse Power 328 Owners C. Bigland & Co Port belonging to London
 Nom. Horse Power as per Section 28 328 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted no

ENGINES, &c.—Description of Engines In Cp'd No. of Cylinders 3 No. of Cranks 3
 Dia. of Cylinders 24.5 40.66 Length of Stroke 45 Revs. per minute 65 Dia. of Screw shaft 13.8 Material of screw shaft 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 ✓ 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 5' 3"
 Dia. of Tunnel shaft 12.2 Dia. of Crank shaft journals 12.8 Dia. of Crank pin 1' 1" Size of Crank webs 252 x 8 Dia. of thrust shaft under collars 1' 1" Dia. of screw 16' 6" Pitch of screw 16' 6" No. of blades 4 State whether moveable f Total surface 83
 No. of Feed pumps 2 Diameter of ditto 4" Stroke 1' 10" Can one be overhauled while the other is at work yes
 No. of Bilge pumps 2 Diameter of ditto 4 1/2" Stroke 1' 10" Can one be overhauled while the other is at work yes
 No. of Donkey Engines 3 Sizes of Pumps 9" 11" 10" 7 1/2" 5 x 6 1/4" 2 1/2" 4" No. and size of Suctions connected to both Bilge and Donkey pumps In Engine Room 4 of 3" tunnel 3" In Holds, &c. 2 of 3" in all holds
 No. of bilge injections 1 sizes 5" Connected to condenser, or to circulating pump C.P. Is a separate donkey suction fitted in Engine room & size 400.
 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 ✓
 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 ✓
 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 new vessel Is the screw shaft tunnel watertight yes
 Is it fitted with a watertight door yes worked from top platform

BOILERS, &c.— (Letter for record R.) Total Heating Surface of Boilers 5210 sq. ft. Is forced draft fitted no.
 No. and Description of Boilers 2 Marine type S.C. Working Pressure 180 lb Tested by hydraulic pressure to 360 lb
 Date of test 30.7.04 Can each boiler be worked separately yes Area of fire grate in each boiler 48 sq. ft. No. and Description of safety valves to each boiler 2 Spring Area of each valve 8.03 Pressure to which they are adjusted 185 lb Are they fitted with easing gear yes
 Smallest distance between boilers or uptakes and bunkers or woodwork 20" Mean dia. of boilers 16' 4 1/2" Length 10' 6" Material of shell plates 8
 Thickness 1 1/2" Range of tensile strength 32 Are they welded or flanged ends Descrip. of riveting: cir. seams dr. lap long. seams t.r.d. butt.
 Diameter of rivet holes in long. seams 1 3/8" Pitch of rivets 10" Lap of plates or width of butt straps 2 1/4"
 Per centages of strength of longitudinal joint rivets 91 Working pressure of shell by rules 215 lb. Size of manhole in shell 16 x 12" plate 8 1/4"
 Size of compensating ring flanged No. and Description of Furnaces in each boiler 4 Dought's Material S. Outside diameter 44 1/2"
 Length of plain part top ✓ Thickness of plates bottom 3 1/16" Description of longitudinal joint weld No. of strengthening rings ✓
 Working pressure of furnace by the rules 198 lb Combustion chamber plates: Material S Thickness: Sides 3 3/8" Back 3 1/2" Top 3 3/8" Bottom 1 5/16"
 Pitch of stays to ditto: Sides 8 1/2" x 10" Back 8 1/2" x 8 1/2" Top 8 1/2" x 10" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 198 lb
 Material of stays Iron Diameter at smallest part 1.6" Area supported by each stay 870 Working pressure by rules 193 lb End plates in steam space: Material S Thickness 1 1/8" Pitch of stays 1 1/2" x 2 1/2" How are stays secured dr. nuts Working pressure by rules 289 lb Material of stays S.
 Diameter at smallest part 7 1/4" Area supported by each stay 3580 Working pressure by rules 201 Material of Front plates at bottom S.
 Thickness 1" Material of Lower back plate S Thickness 3 3/8" Greatest pitch of stays 14 1/2" Working pressure of plate by rules 230 lb
 Diameter of tubes 3 1/2" Pitch of tubes 4 1/2" x 4 3/8" Material of tube plates S Thickness: Front 1" Back 1 1/8" Mean pitch of stays 8.87"
 Pitch across wide water spaces 14 1/2" Working pressures by rules 200 lb Girders to Chamber tops: Material S. Depth and thickness of girder at centre 8 1/2" x 1 1/2" Length as per rule 30" Distance apart 8 1/2" Number and pitch of Stays in each 2 of 10
 Working pressure by rules 201 lb 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

If not, state whether, and when, one will be sent? In a Report also sent on the Hull of the Ship [2000-604-Copyable Ink.]

DONKEY BOILER— No. 1 Description Marine Type
 Made at Newcastle By whom made W. G. Ingle When made 1904 Where fixed Main deck
 Working pressure 100 lb tested by hydraulic pressure to 200 lb No. of Certificate 6830 Fire grate area 25 sq ft Description of safety valves 2 Spring
 No. of safety valves 2 Area of each 4.9 Pressure to which they are adjusted 105 lb If fitted with easing gear Yes If steam from main boilers can enter the donkey boiler No
 Dia. of donkey boiler 9 ft Length 9 ft Material of shell plates 8 Thickness 3/8 Range of tensile strength 28 Descrip. of riveting long seams Lap & rwd. Dia. of rivet holes 1 1/16 Whether punched or drilled 8 Pitch of rivets 3 3/8
 Lap of plating 6 1/2 Per centage of strength of joint 67 Thickness of shell crown-plates 7/8 Radius of do. — No. of Stays to do. 6
 Dia. of stays 2.16 Diameter of furnace Top 33 Bottom — Length of furnace 5.4 Thickness of furnace plates 3 Description of joint held. Thickness of furnace crown-plates 9/16 Stayed by 12 iron stays @ 10 1/2 x 9 1/2 Working pressure of shell by rules 102 1/2
 Working pressure of furnace by rules 112 1/2 Diameter of uptake 3 1/2 Thickness of uptake plates 1 1/2 + 1/8 Thickness of water tubes 5/16

SPARE GEAR. State the articles supplied:— 1 set connecting rod bolts & nuts
2 main bearing bolts & nuts. 1 set coupling bolts and nuts. 1 set feed and bilge pump valves
propeller and shaft. nuts bolts and iron
 The foregoing is a correct description,

FOR THE NORTH EASTERN MARINE ENGINEERING CO. LD. Manufacturer. Man & Ingle main & Donkey boilers

J. Y. Findlay
 Dates of Survey while building
 During progress of work in shops— 1904 May 10 June 9 12 14 15 17 20 21 30 July 6 7 8 11 12 15 16 30 22 23 25 27 Aug 12 18 19
 During erection on board vessel 20 23 24 25 31 Sep 6 20
 Total No. of visits 31

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

General Remarks (State quality of workmanship, opinions as to class, &c. Machinery and boilers)
constructed under special survey. Materials and workmanship good and efficient. Engines and boilers examined under steam & found satisfactory. In my opinion this vessel is now eligible for the record of L.M.C 9/04 in the Register Book.

It is submitted that this vessel is eligible for THE RECORD. L.M.C. 9.04

326
27.9.04
27.9.04

Newcastle-on-Tyne.

Certificate (if required) to be sent to

The amount of Entry Fee... £ 3
 Special... £ 36.8
 Donkey Boiler Fee... £ —
 Travelling Expenses (if any) £ —

When applied for, 26 SEP 1904
 When received, 27.9.04

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

Committee's Minute FRI. 30 SEP 1904
 Assigned + L.M.C. 9.04
 MACHINERY CERTIFICATE WRITER.

