

REPORT ON MACHINERY.

Port of Newcastle

Received at London Office 18 Feb 1905

No. in Survey held at Newcastle
Reg. Book. 3/5 Netherton

Date, first Survey 28 July '04 Last Survey 10 Feb 1905
(Number of Visits 48)

Master Built at Newcastle By whom built Northumberland Shipbldg When built 1904-5

Engines made at Newcastle By whom made H. C. M. Eng Co Ltd when made 1904-5

Boilers made at " By whom made " when made 1904-5

Registered Horse Power Owners Greenlees & Co Port belonging to Glasgow

Nom. Horse Power as per Section 28 350 Is Refrigerating Machinery fitted no. Is Electric Light fitted no.

ENGINES, &c.—Description of Engines Tri Cpd. No. of Cylinders 3 No. of Cranks 3

Dia. of Cylinders 24 1/2" 40" 66" Length of Stroke 48" Revs. per minute 65 Dia. of Screw shaft 1 1/2" Material of screw shaft 9.

Is the screw shaft fitted with a continuous liner no. the whole length of the stern tube no. Is the after end of the liner made water tight in the propeller boss yes. If the liner is attached 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 at inner ends. Length of stern bush 5ft.

Dia. of Tunnel shaft 1 1/2" Dia. of Crank shaft journals 1 1/2" Dia. of Crank pin 1 1/2" Size of Crank webs 13 1/2 x 8 1/2 Dia. of thrust shaft under collars 1 1/2" Dia. of screw 1 7/8" Pitch of screw 17ft No. of blades 4 State whether moceable f Total surface 90ft

No. of Feed pumps 2 Diameter of ditto 4" Stroke 22 1/2 Can one be overhauled while the other is at work yes

No. of Bilge pumps 2 Diameter of ditto 5" Stroke 22 1/2 Can one be overhauled while the other is at work yes

No. of Donkey Engines 2 Sizes of Pumps 7x9x9 & 7 1/2 x 5 1/2 No. and size of Suctions connected to both Bilge and Donkey pumps 2 of 3 1/2 in all holds

In Engine Room 4 of 3 1/2 In Holds, &c. 2 of 3 1/2 in all holds

tunnel well 2 1/2

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

Are all connections with the sea direct on the skin of the ship yes. Are they Valves or Cocks both

Are they sized 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 2. 2. 04 Is the screw shaft tunnel watertight yes

Is it fitted with a watertight door yes. worked from top platform.

BOILERS, &c.— (Letter for record B) Total Heating Surface of Boilers 5715 f Is forced draft fitted no.

No. and Description of Boilers 3 Marine type Working Pressure 180 Tested by hydraulic pressure to 360

Date of test 15/12/04 Can each boiler be worked separately yes Area of fire grate in each boiler 51.8 f No. and Description of safety valves to each boiler 2 spring Area of each valve 7.07. Pressure to which they are adjusted 185. Are they fitted with easing gear yes

Smallest distance between boilers or uptakes and bunkers or woodwork 2 feet. Mean dia. of boilers 13 9" Length 11 ft Material of shell plates S

Thickness 18 Range of tensile strength 29-32 Are they welded or flanged ends Descrip. of riveting: cir. seams 2. 7 lap. long. seams 2 butt & lap

Diameter of rivet holes in long. seams 1 1/2 Pitch of rivets 8 1/2" Lap of plates or width of butt straps 15 1/8

Per centages of strength of longitudinal joint rivets 82.4 plate 82.3 Working pressure of shell by rules 181 Size of manhole in shell 16" x 12"

Size of compensating ring flanged No. and Description of Furnaces in each boiler 3 deg 1/2 Material S Outside diameter 35 1/2

Length of plain part top Thickness of plates bottom Description of longitudinal joint weld. No. of strengthening rings —

Working pressure of furnace by the rules 182. Combustion chamber plates: Material S Thickness: Sides 5/8 Back 1 1/8 Top 5/8 Bottom 3/4

Pitch of stays to ditto: Sides 8 1/2 x 8 1/2 Back 9 x 9 Top 8 1/2 x 8 1/2 If stays are fitted with nuts or riveted heads nuts Working pressure by rules 182

Material of stays S Diameter at smallest part 2.03 Area supported by each stay 83.25 Working pressure by rules 183 End plates in steam space:

Material S Thickness 1 1/8 Pitch of stays 25 x 21 1/2 How are stays secured 2. nuts Working pressure by rules 180 Material of stays S

Diameter at smallest part 9.8 Area supported by each stay 537 Working pressure by rules 183 Material of Front plates at bottom S

Thickness 3 1/2 Material of Lower back plate S Thickness 29 Greatest pitch of stays 14 1/2" Working pressure of plate by rules 182

Diameter of tubes 3 1/4 Pitch of tubes 4 1/2 + 4 3/8 Material of tube plates S Thickness: Front 2 1/2 Back 3/4 Mean pitch of stays 8.8"

Pitch across wide water spaces 14 1/2 Working pressures by rules 182 1/2 Girders to Chamber tops: Material S Depth and thickness of girder at centre 8 1/2 x 6 Length as per rule 30" Distance apart 8 5/8 Number and pitch of Stays in each 2 of 8 1/2

Working pressure by rules 194 Superheater or Steam chest; how connected to boiler — Can the superheater be shut off and the boiler worked separately —

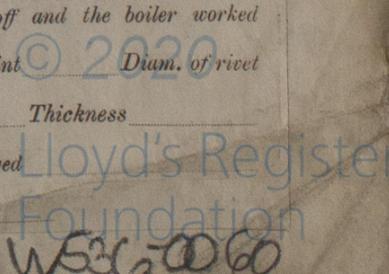
Diameter Length Thickness of shell plates Material Description of longitudinal joint Diam. of rivet

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? Is a Report also sent on the Hull of the ship?



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

Di. 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.

Plates 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:— 1 Set connecting rod top and bottom end bolts and nuts, 2 main bearing bolts and nuts, 1 set of coupling bolts and nuts, 1 set feed and bilge pump valves, propeller shaft, nuts bolts and assorted iron

The foregoing is a correct description,

FOR THE NORTH EASTERN MARINE ENGINEERING CO. LD.

Manufacturer.

J. Y. Findlay

ASSISTANT SECRETARY.

Dates of Survey while building

During progress of work in shops - 1904 July 31 Aug 22 23 25 31 Sept 2 13 14 15 21 30 Oct 4 7 13 19 25 26 27 Nov 3 4 7 10 11 14 15 16 Dec 16 17 19 15 16 19

During erection on board vessel - 22 29 1905 Jan 4 5 6 13 16 19 24 28 Feb 3 10

Total No. of visits 48

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. Engines & boilers examined on full speed trial at sea and found satisfactory. In my opinion this vessel is eligible for the record in the Register Book of L.M.C 2/05*

It is submitted that this vessel is eligible for THE RECORD L.M.C. 2.05

Findlay
18.2.05

Newcastle-on-Tyne.

Certificates (if required) to be sent to

The amount of Entry Fee. . . £ 3 : : : When applied for, *17 FEB 1905*

Special £ 37 : 10 : : : When received, *23/2/05*

Donkey Boiler Fee £ . : : : *24/2/05*

Travelling Expenses (if any) £ . : : : *23/2/05*

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

Committee's Minute

TUES. 21 FEB 1905

Assigned

+ L.M.C 2/05



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