

REPORT ON MACHINERY.

Port of Newcastle

Received at London Office **FRI 30 DEC 1898**

No. in Survey held at Newcastle
eg. Book.

Date, first Survey 2nd Dec 1898
Last Survey 16th Dec 1898

in Charge of the

S.S. Broadgarth

(Number of Visits 22)
mdbw 6

Master Rowell

Built at Middlesbrough By whom built R. Briggs & Co.

Tons { Gross 3224
Net 2049
When built 1898

Engines made at Newcastle

By whom made North Eastern Marine when made 12-98

Boilers made at do

By whom made North Eastern Marine when made 12-98

Registered Horse Power 290

Owners Clapham S.S. Coy. Ltd

Port belonging to Newcastle

nom. Horse Power as per Section 28 281

Is Electric Light fitted Yes

ENGINES, &c.—Description of Engines

Triple

No. of Cylinders 3

No. of Cranks 3

Diameter of Cylinders 24. 40. 64 Length of Stroke 42" Revolutions per minute 70 Diameter of Screw shaft as per rule 11-9"

Diameter of Tunnel shaft as fitted 11 1/2" Diameter of Crank shaft journals 13" Diameter of Crank pin 13" Size of Crank webs 24 1/2 x 8 1/2"

Diameter of screw 17-0 Pitch of screw 16-0 No. of blades 4 State whether moveable no Total surface 85 sq

No. of Feed pumps 2 Diameter of ditto 3 1/2" Stroke 24 Can one be overhauled while the other is at work yes

No. of Bilge pumps 2 Diameter of ditto 3 1/2" Stroke 24 Can one be overhauled while the other is at work yes

No. of Donkey Engines 2 Sizes of Pumps Duplex 6x4x6. Ballast 9x9x12 No. and size of Suctions connected to both Bilge and Donkey pumps

Engine Room four 3 1/2" dia In Holds, &c. Fore Hold Two, 3 1/2" dia.

Fore Hold Two, 3 1/2" dia. After Main Hold Two, 3 1/2" dia. After Hold Keelwell, one 3" dia. Aft peak one 3" dia.

No. of bilge injections 1 sizes 4 Connected to condenser or to circulating pump yes 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 yes

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 that 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 at launch Is the screw shaft tunnel watertight yes

Is it fitted with a watertight door yes worked from upper platform

BOILERS, &c.—

(Letter for record S)

Total Heating Surface of Boilers 4430

Is forced draft fitted no

No. and Description of Boilers Two, Multitubular Working Pressure 160 Tested by hydraulic pressure to 320

Date of test 4.10.98 Can each boiler be worked separately yes Area of fire grate in each boiler 63.5 sq No. and Description of safety valves to

each boiler 2. Spring loaded Area of each valve 7.06 sq Pressure to which they are adjusted 165 lb Are they fitted

with easing gear yes Smallest distance between boilers 24" and bunkers 24" Mean diameter of boilers 15-0 13/32"

Length 10-6" Material of shell plates steel Thickness 1 1/2" Description of riveting: circum. seams D.R. Lap long. seams D.B.S. D.R.

Diameter of rivet holes in long. seams 1 1/8" Pitch of rivets 9 1/2" Length of plates 16 3/4" width of butt straps 16 3/4"

Percentages of strength of longitudinal joint rivets 83-4 plate 83-3 Working pressure of shell by rules 161 lb Size of manhole in end 16 x 12"

Size of compensating ring flanged No. and Description of Furnaces in each boiler 4 plain Material steel Outside diameter 36"

Length of plain part top 6-5" bottom 8-9" Thickness of plates crown 2 1/2" bottom 3 1/2" Description of longitudinal joint D.B.S. S.R. No. of strengthening rings bottom

Working pressure of furnace by the rules 160 Combustion chamber plates: Material steel Thickness: Sides 9 x 11" - see 11" Back 7 1/6" Top 9 1/6" Bottom 23 1/2"

Pitch of stays to ditto: Sides 10 x 10 Back 10 x 10 Top 10 x 10 If stays are fitted with nuts or riveted heads nuts Working pressure by rules 163 lb

Material of stays steel Diameter at smallest part 1 5/8" Area supported by each stay 107 sq Working pressure by rules 160 End plates in steam space

Material steel Thickness 1 7/8" Pitch of stays 24 1/2 x 24 How are stays secured D.N.W. Working pressure by rules 165 lb Material of stays steel

Diameter at smallest part 3 1/2" Area supported by each stay 594 sq Working pressure by rules 165 lb 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" doubled Working pressure of plate by rules 164

Diameter of tubes 3 1/4" Pitch of tubes 4 1/2 x 4 1/2" Material of tube plates steel Thickness: Front 3/4 x 2 1/2" Back 3/4" Mean pitch of stays 9 1/2"

Pitch across wide water spaces 14 1/2" dbl Working pressures by rules 165 lb Girders to Chamber tops: Material steel Depth and

thickness of girder at centre 2 plates 7 1/4 x 3/4" Length as per rule 29" Distance apart 10" Number and pitch of Stays in each two off 10"

Working pressure by rules 161 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

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— Description *Multitubular 2 plain fur.*
 Made at *Stockton* By whom made *Ludron & Co L^o* When made *23.9.98* Where fixed *stakehold*
 Working pressure *80 lb* tested by hydraulic pressure to *160 lb* No. of Certificate *1794* Fire grate area *210* Description of safety valves *d. Spring*
 No. of safety valves *1* Area of each *11.00* Pressure to which they are adjusted *80 lb* If fitted with easing gear *yes* If steam from main boilers
 enter the donkey boiler *no* Diameter of donkey boiler *8.6* Length *8.56* Material of shell plates *Steel* Thickness *15*
 Description of riveting long. seams *tub riv lap 88* Diameter of rivet holes *1 3/16* Whether punched or drilled *drilled* Pitch of rivets *27-32*
 Lap of plating *6 5/8* Per centage of strength of joint *80.8* Thickness of shell crown plates *19/32* Radius of do. *Pitch* Stays to do. *17*
 Dia. of stays *1 7/8* Diameter of furnace Top *30* Bottom *C.C. 9 1/16* Length of furnace *5.3* Thickness of furnace plates *7/16* Description
 joint *weld* Thickness of furnace crown plates *17 19 32* Stayed by *1 1/2" off stays 9" p.* Working pressure of shell by rules *84*
 Working pressure of furnace by rules *80 lb* Diameter of uptake *3"* Thickness of uptake plates *1/16 5/8* Thickness of water tubes *5/16*

SPARE GEAR. State the articles supplied:— *2 top & bottom end & 2 main bearing bolts*
1 set of coupling bolts, 1 spare propeller, 1/3 crank shaft, one set
of feed, bilge and circulating pump valves, 1 Tail Shaft—

The foregoing is a correct description,
 FOR THE NORTH EASTERN MARINE ENGINEERING CO^Y L^{td} Manufacturer.

During progress of work in shops:— *1898— (June) July 6. 29. Aug 5. 19. 23. 30 Sep 8-15 22. 27. 29 Oct*
 Dates of Survey while building:— *17. 24 Nov 14. 16. 18. 21. 22. 28. 29. Mdb. 1897. Dec 2. 5. 7. 13. 15. 16*
 Total No. of visits *22* Mdb *W. B.*

General Remarks (State quality of workmanship, opinions as to class, &c.)
ENGINES—Length of stern bush *4.6* Diameter of crank shaft journals *as per rule 11.35* Diameter of thrust shaft under collars *12 1/2"*
BOILERS—Range of tensile strength *29-32* Are they welded or flanged *flanged* **DONKEY BOILERS**—No. *1* Range of tensile strength *27*
 Is the approved plan of main boiler forwarded herewith *yes* Is the approved plan of donkey boiler forwarded herewith *retained*

The machinery of this vessel has been constructed & fitted on board under special survey, the workmanship was found to be sound & good throughout, which in our opinion renders the vessel eligible for **+L.M.C 12-98** the Register Book.

It is submitted that this vessel is eligible for THE RECORD. + L.M.C. 12.98.

R.S.
 30.12.98

The amount of Entry Fee... £ 2 : :
 Special... £ 34 : :
 Donkey Boiler Fee... £ : :
 Travelling Expenses (if any) £ : :
 When applied for, Dec 16th 98
 When received, 27.2.99
Lidley Towell Robert-Hall
 Engineer Surveyor to Lloyd's Register of British & Foreign Ships

TUES, 3 JAN 1899

Committee's Minute
 Assigned



Builder's Signature (here only)