

REPORT ON MACHINERY.

Port of *Newcastle*FRI 30 DEC 1898
Received at London OfficeNo. in Survey held at *Newcastle*
Reg. Book.Date, first Survey *2nd Dec 1898*Last Survey *16th Dec 1898*(Number of Visits *22*)
Mdb. No. 6

Registered on the

*S.S. Broadgarth*Gross *3224*Net *2049*When built *1898*Master *Rowell*Built at *Middlesbrough*

By whom built

*R. Briggs & Son*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 *In*

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 ft*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 6-4 x 6 Ballast 9-9 x 12

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.

Main Hold Two, 3 1/2" dia.

*After Main Hold Two, 3 1/2" dia.**After Hold Tunnel well, 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*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 ft*

No. and Description of safety valves to

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

Are they fitted

with easing gear *yes*

Smallest distance between boilers

*24"*and bunkers *woodwork*Mean diameter of boilers *15-0 1/32"*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"*

Top of plates on

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"*

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"*Back *7 x 11"*Top *9 x 11"*Bottom *23 x 11"*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 in*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 *DN.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 in*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 7/8"*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 1/2 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 *—*Working pressure of end plates *—*Area of safety valves to superheater *—*Are they fitted with easing gear *—*

MDB761-0022

DONKEY BOILER— Description *Multitubular 2 plain fur.*
Made at *Northampton* By whom made *Andrews & Co L^{rs}* When made *23.9.98* Where fixed *stokehold*
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' 6"* Material of shell plates *Steel* Thickness *15*
Description of riveting long. seams *trib riv lap 88* Diameter of rivet holes *1 1/8"* 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"* Length of furnace *5' 3"* Thickness of furnace plates *7/16"* Description
joint *weld* Thickness of furnace crown plates *17/32* 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 6* 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 crank shaft, 1 set
of feed, bilge and circulating pump valves, 1 Tail Shaft—

The foregoing is a correct description,

FOR THE NORTH EASTERN MARINE ENGINEERING CO. L^{td} Manufacturer.

Dates During progress of work in shops:— *1898—(June) July 6. 29. Aug 5. 19. 23. 30. Sep 8. 15. 22. 27. 29. Oct*
of Survey During erection on:— *17. 24. Nov. 14. 16. 18. 21. 22. 28. 29. Mdb. 1897. Dec 2. 5. 7. 13. 15. 16.*
while building Board vessel:— *Mdb. 1896.*
Total No. of visits *22*

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.*

A.S.
30.12.98

The amount of Entry Fee... £ *2:*
Special... £ *34:*
Donkey Boiler Fee... £
Travelling Expenses (if any) £

When applied for,

When received,

MACHINERY CERTIFICATE

TUES. 3 JAN 1899

Committee's Minute

Assigned

WRITTEN



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