

REPORT ON MACHINERY.

Port of *Sunderland*

WED. 27 MAY 1903

No. in Survey held at *Sunderland & Blyth* Date, first Survey *Dec 23rd '01* Last Survey *24th Oct 1902*
Reg. Book. (Number of Visits *48*)

on the *Screw Steamer*

Tons { Gross *1836.09*
Net *1166.15*

Master *X* Built at *Blyth* By whom built *Blyth S. B. Co. (112)* When built *1902*

Engines made at *Sunderland* By whom made *North Eastern M. E. Coy. Ltd. (1410)* when made *1902*

Boilers made at *Sunderland* By whom made *North Eastern M. E. Coy. Ltd.* when made *1902*

Registered Horse Power Owners *Lombard & Co* Port belonging to

Nom. Horse Power as per Section 28 *209* Is Refrigerating Machinery fitted *no* Is Electric Light fitted *yes*

ENGINES, &c.—Description of Engines *Triple Expansion* No. of Cylinders *3* No. of Cranks *3*
D. of Cylinders *20 1/2 - 33 - 54* Length of Stroke *36* Revs. per minute *70* Dia. of Screw shaft *as per rule 11.33* Lgth. of stern bush *4'-0"*
Dia. of Tunnel shaft *as per rule 9.8* Dia. of Crank shaft journals *as per rule 10.44* Dia. of Crank pin *10 1/2* Size of Crank webs *16x6 1/2* Dia. of thrust shaft under
collars *10 1/2* Dia. of screw *1 1/4 - 3* Pitch of screw *1 1/4 - 3* No. of blades *4* State whether moveable *no* Total surface *61 1/4*

No. of Feed pumps *2* Diameter of ditto *2 3/4* Stroke *1'-9"* Can one be overhauled while the other is at work *yes*

No. of Bilge pumps *2* Diameter of ditto *3* Stroke *1'-9"* Can one be overhauled while the other is at work *yes*

No. of Donkey Engines *2* Sizes of Pumps *8x9x10 & 5 1/4 x 3 1/2 x 5* No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room *4 7 3* In Holds, &c. *Two of 2 1/4 & one 3* in each hold

No. of bilge injections *1* sizes *3 1/2* Connected to *condenser* to circulating pump *C.P.* Is a separate donkey suction fitted in Engine room & size *yes 3"*

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 *yes*

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 *ruvernel* Is the screw shaft tunnel watertight *yes*

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

OILERS, &c.— (Letter for record *S*) Total Heating Surface of Boilers *3586 1/4* Is forced draft fitted *no*

No. and Description of Boilers *2 Cylindrical Multitubular S. E.* Working Pressure *170 lb* Tested by hydraulic pressure to *340 lb*

Date of test *15-9-02* Can each boiler be worked separately *yes* Area of fire grate in each boiler *57 1/4* No. and Description of safety valves to

each boiler *2 direct spring* Area of each valve *5.94* Pressure to which they are adjusted *175 lb* Are they fitted with easing gear *yes*

Smallest distance between boilers or uptakes and bunkers or woodwork *18"* Mean dia. of boilers *13-10 3/2* Length *10'-0"* Material of shell plates *steel*

Thickness *1 1/2* Range of tensile strength *39/32* Are they welded or flanged *no* Descrip. of riveting: cir. seams *D.R. Riv* long. seams *J.R. Riv* shop

Diameter of rivet holes in long. seams *1 1/8"* Pitch of rivets *7 7/8"* Lap of plates or width of butt straps *16 3/4"*

Per centages of strength of longitudinal joint rivets *85-8* Working pressure of shell by rules *180.6 lb* Size of manhole in *End 16" x 12"*

Size of compensating ring *Flanged* No. and Description of Furnaces in each boiler *3 plain* Material *steel* Outside diameter *3'-6"*

Length of plain part *top 4'-8"* Thickness of plates *bottom 6 1/4* Description of longitudinal joint *welded* No. of strengthening rings *yes*

Working pressure of furnace by the rules *172.3* Combustion chamber plates: Material *steel* Thickness: Sides *3/2* Back *1 1/2* Top *3/2* Bottom *1 1/2*

Pitch of stays to ditto: Sides *8 7/8 x 9 1/4* Back *10 1/4 x 9 1/8* Top *8 7/8 x 8 7/8* If stays are fitted with nuts or riveted heads *nuts* Working pressure by rules *177 lb*

Material of stays *steel* Diameter at smallest part *1.49* Area supported by each stay *93.5* Working pressure by rules *172.3* End plates in steam space:

Material *steel* Thickness *1 1/2* Pitch of stays *9 7/8 x 17* How are stays secured *8 7/8 x 20* Working pressure by rules *170.5 lb* Material of stays *steel*

Diameter at smallest part *6.1* Area supported by each stay *329* Working pressure by rules *185 lb* Material of Front plates at bottom *steel*

Thickness *1 3/16* Material of Lower back plate *steel* Thickness *7/8* Greatest pitch of stays *14 1/2 x 9 1/8* Working pressure of plate by rules *180 lb*

Diameter of tubes *3 1/4* Pitch of tubes *4 7/16 x 4 1/16* Material of tube plates *steel* Thickness: Front *13/16* Back *13/16* Mean pitch of stays *8 7/8"*

Pitch across wide water spaces *14 1/2"* Working pressures by rules *315 lb* Girders to Chamber tops: Material *steel* Depth and

thickness of girder at centre *6 1/4 x 2 7/8* Length as per rule *28* Distance apart *8 1/8"* Number and pitch of Stays in each *2 7/8 7/8"*

Working pressure by rules *180 lb* 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

© 2021

Lloyd's Register
Foundation

DONKEY BOILER— No. *Free* Description *Ordinary cross tube*
Made at *Aman* By whom made *Cochran & Co* When made *1902* Where fixed *Stokelhold*
Working pressure *80 lbs* Tested by hydraulic pressure to *160 lbs* No. of Certificate *6421* Fire grate area *25 1/2* Description of safety valves *Spring loaded*
No. of safety valves *2* Area of each *7.07* Pressure to which they are adjusted *85 lbs* If fitted with easing gear *yes* If steam from main boilers can enter the donkey boiler *No* Dia. of donkey boiler *7'-0"* Length *14'-0"* Material of shell plates *Steel* Thickness *15/32"* Range of tensile strength *27-32* Descrip. of riveting long. seams *double* Dia. of rivet holes *3/32* Whether punched or drilled *drilled* Pitch of rivets *2 3/4"*
Lap of plating *4 1/8"* Per centage of strength of joint Rivets *74.5* Thickness of shell crown plates *9/16"* Radius of do. *7'-0"* No. of Stays to do. *8*
area *3.49* Diameter of furnace Top *5'-0 1/8"* Bottom *5'-1 1/2"* Length of furnace *6'-4"* Thickness of furnace plates *1/16"* Description of joint *riveted* Thickness of furnace crown plates *1/8"* Stayed by *as above* Working pressure of shell by rules *88 lbs*
Working pressure of furnace by rules *98 lbs* Diameter of uptake *15 1/4"* Thickness of uptake plates *3/8"* Thickness of water tubes *3/8"*

SPARE GEAR. State the articles supplied:— *Two top end bolts and nuts, two bottom end bolts & nuts, two main bearing bolts & nuts, spare coupling bolts & nuts, spare feed & bilge pump valves, assorted iron bolts & nuts, 1 set coach springs for piston rings, 1 safety valve spring, 1 main feed check valve, 1 donkey feed check valve.*

The foregoing is a correct description,
NORTH EASTERN MARINE ENGINEERING CO. LTD.
Manufacturer.
Walter Beattie Esq.

Dates { During progress of work in shops— 1901. Dec. 23. 1902. Jan. 7. 10. 15. 20. 23. 29. Feb. 6. 11. 17. 20. 24. 26. Mar. 1. 6. 10. 12. 17. 21. 24. 26. Apr. 7. 9. 15. 18. 25. 28. May.
of Survey { During erection on board vessel— 1. 13. 22. 30. June 4. 9. 11. 20. July 1. 23. 30. Aug. 14. 18. 20. 25. Sep. 12. 15. 19. 23. *Nov. 7. Oct. 17. 24.*
building { Total No. of visits *48*
Machinery similar to that fitted in Blythe No 109 & 109 1/2 "Susitama" donkey " " " "

General Remarks (State quality of workmanship, opinions as to class, &c.)

Material of screw shaft *Wrot-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 *yes* If two liners are fitted, is the shaft lapped or protected between the liners *yes*

The machinery built under Special Survey, the materials & workmanship found good and efficient.
The boiler and main steam pipes tested under hydraulic pressure to 340 lbs. and found efficient.
The machinery fitted on board, tested under steam and found satisfactory.
In our opinion this vessel is worthy of the notification of L.M.C. 2,03.

It is submitted that
this vessel is eligible for
THE RECORD. L.M.C. 2.03. ELECT LIGHT

Bal
28.5.03

The amount of Entry Fee... £ 2 : 0 :
Special ... £ 30 : 9 :
Donkey Boiler Fee ... £ : :
Travelling Expenses (if any) £ : :
When applied for, 26 MAY 1903
When received, 17.6.03

Committee's Minute

Assigned

FRI. 29 MAY 1903

+ L.M.C. 2.03
Elect Light

W. F. Gilmore *Andrew J. Graham*
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

TUES. 14 JUL 1903

MACHINERY CERTIFICATE
WRITTEN 6-10-03

© 2021

+ L.M.C. 10.02
Elect Light

Lloyd's Register
Foundation