

REPORT ON MACHINERY

S.L.D. No. 22049
Vine No. 48.050

Port of Sunderland

Received at London Office 19th Dec 1904

No. in Survey held at Sunderland

Date, first Survey 12th October

Last Survey 12th Nov 1904

Book.

on the 3/5 "Arrival"

(Number of Visits 19)

Tons } Gross 358
Net 126

Master W. J. Thompson Built at Newcastle

By whom built Wood Skinner & Co.

When built 1904

Plates made at Newcastle

By whom made W. G. M. & Co.

when made 1904

Boilers made at Sunderland

By whom made North Eastern Marine Engineering Co. when made 1904

Registered Horse Power

Owners C. Rowbottom

Port belonging to London

Net Horse Power as per Section 28 71 1/2

Is Refrigerating Machinery fitted no

Is Electric Light fitted yes

GINES, &c.—Description of Engines

Tri. Exp.

No. of Cylinders 3

No. of Cranks 3

No. of Cylinders 13 21" 35"

Length of Stroke 24"

Revs. per minute 60

Dia. of Screw shaft as per rule 1 3/4"

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

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

shafts are fitted, is the shaft lapped or protected between the liners ✓

Length of stern bush 2' 11"

Dia. of Tunnel shaft as per rule 6.5"

Dia. of Crank shaft journals as per rule 6.70"

Dia. of Crank pin 6 7/8"

Size of Crank webs 13 1/2" x 4 1/2"

Dia. of screw 9 1/4" Pitch of screw 10 ft.

No. of blades 4

State whether moveable f.

Total surface 26 f.

No. of Feed pumps 2 Diameter of ditto 2 1/2" Stroke 13 1/2" Can one be overhauled while the other is at work yes

No. of Bilge pumps 2 Diameter of ditto 2 1/2" Stroke 13 1/2" Can one be overhauled while the other is at work yes

No. of Donkey Engines 2

Sizes of Pumps 6" x 5 1/4" x 6 1/4" x 2 1/2" x 4" No. and size of Suctions connected to both Bilge and Donkey pumps

Engine Room 2 of 2 1/2"

In Hold, &c. 2 of 2"

No. of bilge injections 1 sizes 3 Connected to condenser, or to circulating pump CP

Is a separate donkey suction fitted in Engine room & size 2 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 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

How are pipes 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.

Were stern tube, propeller, screw shaft, and all connections examined in dry dock new vessel Is the screw shaft tunnel watertight none

Is it fitted with a watertight door ✓ worked from ✓

BOILERS, &c.—

(Letter for record B) Total Heating Surface of Boilers 1177 f.

Is forced draft fitted no.

No. and Description of Boilers one single ended cylindrical Working Pressure 180 lb. Tested by hydraulic pressure to 360 lb.

Date of test 12/11/04 Can each boiler be worked separately ✓

Area of fire grate in each boiler 35.5 f. No. and Description of safety valves to boiler 2 Spring

Area of each valve 2 Pressure to which they are adjusted 180 lb. Are they fitted with easing gear yes

Smallest distance between boilers or uptakes and bunkers or woodwork 18" Mean dia. of boilers 11' 10" Length 10' 0" Material of shell plates steel

Thickness 1" Range of tensile strength 29632 Are they welded or flanged no Descrip. of riveting: cir. seams double riv. by long. seam double riveted, double butt strap

Diameter of rivet holes in long. seams 1 5/16" Pitch of rivets 7 7/16" Lap of plates or width of butt straps 14"

Percentages of strength of longitudinal joint rivets 82.5 plate 82.0 Working pressure of shell by rules 182.3 lb. Size of manhole in shell 16" x 12"

Are there compensating rings flanged No. and Description of Furnaces in each boiler 3-plain Material steel Outside diameter 33"

Height of plain part top 6' 9" Thickness of plates crown 1 1/16" bottom 1 1/16" Description of longitudinal joint weld No. of strengthening rings ✓

Working pressure of furnace by the rules 189.7 Combustion chamber plates: Material steel Thickness: Sides 1/16" Back 1/16" Top 1/16" Bottom 1 1/16"

Height of stays to ditto: Sides 9 1/2" x 9 3/8" Back 9 1/2" x 9 3/8" Top 9 1/2" x 9 3/8" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 183.5

Material of stays steel Diameter at smallest part 1.79 Area supported by each stay 89.06 Working pressure by rules 180.8 End plates in steam space:

Material steel Thickness 1 1/32" Pitch of stays 20 1/4" x 23" How are stays secured double nuts washers Working pressure by rules 182.1 Material of stays steel

Diameter at smallest part 8.45 Area supported by each stay 465.75 Working pressure by rules 181.4 Material of Front plates at bottom steel

Thickness 3 1/32" Material of Lower back plate steel Thickness 1 5/16" Greatest pitch of stays 14 1/2" x 9 3/8" Working pressure of plate by rules 203.8

Diameter of tubes 3 1/4" Pitch of tubes 4 1/2" x 4 3/4" Material of tube plates steel Thickness: Front 3 1/32" Back 3/4" Mean pitch of stays 9 1/2" x 9"

Height across wide water spaces 14 1/2" Working pressures by rules 182.8 lb. Girders to Chamber tops: Material steel Depth and

Thickness of girder at centre 7 3/4" x 1 1/2" Length as per rule 27' Distance apart 9 1/2" Number and pitch of Stays in each 2-9 3/8"

Working pressure by rules 191.2 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

Pitch of rivets Working pressure of shell by rules Diameter of flue Material of flue plates Thickness

Strengthened 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

W494-0237

DONKEY BOILER— No. 1 Description *Vertical*
 Made at *Stockton* By whom made *J. Sudron & Co. L^d* When made *1904* Where fixed *Stokehold*
 Working pressure *90 lb* tested by hydraulic pressure to *180 lb*. No. of Certificate *3319* Fire grate area *11 sq* Description of safety valves *Spring*
 No. of safety valves *2*. Area of each *4.9* Pressure to which they are adjusted *90 lb*. If fitted with easing gear *Yes* If steam from main boilers can enter the donkey boiler *No*. Dia. of donkey boiler *4' 6"* Length *10' 6"* Material of shell plates *S*. Thickness *3/8"* Range of tensile strength *27-32* Descrip. of riveting long. seams *2.7 lap*. Dia. of rivet holes *13/16* Whether punched or drilled *D*. Pitch of rivets *2 3/4*
 Lap of plating *4 1/2* Per centage of strength of joint Rivets *85.17* Plates *70.4* Thickness of shell crown plates *1/2* Radius of do. *3' 9"* No. of Stays to do. *✓*
 Dia. of stays. *✓* Diameter of furnace Top *3' 5 1/2"* Bottom *3' 11"* Length of furnace *3' 11"* Thickness of furnace plates *1/2"* Description of joint *S.R. lap* Thickness of furnace crown plates *1/2"* Stayed by *dished* Working pressure of shell by rules *101 lb*
 Working pressure of furnace by rules *109* Diameter of uptake *12"* Thickness of uptake plates *3/8"* Thickness of water tubes *3/8"*

SPARE GEAR. State the articles supplied:— *1 set connecting rod bolts and nuts. 2 main bearing bolts & nuts. 1 set of coupling bolts & nuts. 1 set feed and bilge pump valves. propeller. nuts. bolts and assorted iron*

The foregoing is a correct description,

NORTH EASTERN MARINE ENGINEERING CO. LTD. Manufacturer.

Malcolm Smith Esq

Dates of Survey while building
 During progress of work in shops— 1904: — Oct 12, 24, 27, Nov. 1, 3, 9, 12,
 During erection on board vessel — N.W.C.: 1904. Oct. 17, 25, 27, Nov. 1, 11, 21, 28, 30, Dec. 1, 8, 12. N.W.C. — 12 Visits
 Total No. of visits (Sld) 7, Total 19. 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 and boilers examined under steam & found satisfactory. In my opinion this vessel is eligible for the record in the Register Book of L.M.C 12/04.*)

It is submitted that this vessel is eligible for THE RECORD L.M.C. 12.04. ELEC. LIGHT.

Publ.
J.S. 22.12.04
 22.12.04

Newcastle-on-Tyne.

Certificate (if required) to be sent to
 (The Surveys are requested not to write on or below the space for Committee's Minute.)

The amount of Entry Fee.. £ 1 : : :
 Special *3.11.0* .. £ 10 : 13 : :
 Donkey Boiler Fee .. £ : : :
 Travelling Expenses (if any) £ : : :
 When applied for, 20 DEC 1904
 When received, 22.12.04

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

Committee's Minute WED, 28 DEC 1904
 Assigned + L.M.C. 12.04
 Elec. light



MACHINERY CERTIFICATE WRITTEN.