

REPORT ON MACHINERY.

Port of *Newcastle-on-Tyne*

Received at London Office *SAT. 14 JUN 1902*

No. in Survey held at *Newcastle-on-Tyne*

Date, first Survey *Nov 21 1901*

Last Survey *June 6 1902*

Reg. Book.

on the *5/3 "Pure Oil"*

(Number of Visits *25*)

Tons { Gross *4487*
Net *2917*
When built *1902*

Master *Moige*

Built at *Newcastle*

By whom built *Armstrong Whitworth & Co.*

Engines made at *Newcastle*

By whom made *Walsland Shipway & Eng. Co.*

when made *1902*

Boilers made at *Newcastle*

By whom made *Walsland Shipway & Eng. Co.*

when made *1902*

Registered Horse Power

Owners *Pure Oil Co.*

Port belonging to *Hamburg*

Com. Horse Power as per Section 28 *412*

Is Refrigerating Machinery fitted *no*

Is Electric Light fitted *yes*

ENGINES, &c.—Description of Engines

Triplic Expansion

No. of Cylinders *3*

No. of Cranks *3*

Dia. of Cylinders *25" 42" 70"*

Length of Stroke *48"*

Revs. per minute *70*

Dia. of Screw shaft *as per rule 14.2.3*

Lgth. of stern bush *5'-0"*

Dia. of Tunnel shaft *as per rule 13.3.4*

Dia. of Crank shaft journals *as fitted 13.3.4*

Dia. of Crank pin *13.3.4*

Size of Crank webs *9.2.1.2*

Dia. of thrust shaft under

Blades *13.3.4*

Dia. of screw *17'-6"*

Pitch of screw *18'-0"*

No. of blades *4*

State whether moceable *no*

Total surface *98.5*

No. of Feed pumps *2*

Diameter of ditto *10'-6" 12"*

Stroke *duplex*

Can one be overhauled while the other is at work *yes*

No. of Bilge pumps *2*

Diameter of ditto *4.5"*

Stroke *26"*

Can one be overhauled while the other is at work *yes*

No. of Donkey Engines *2*

Sizes of Pumps *10'-6" 12" 16'-7.5" 6"*

No. and size of Suctions connected to both Bilge and Donkey pumps

Engine Room *Five 3.5"*

In Holds, &c. *one in fore peak 3" two in fore hold 3" one in*

ward Liverpool 3" one 6" suction in each tank + after Liverpool, two bilge suctions in each pump room.

No. of bilge injections *1* sizes *7"*

Connected to condenser, or to circulating pump *yes*

Is a separate donkey suction fitted in Engine room & size *yes 3.5"*

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 *now*

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 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 *now*

Is the screw shaft tunnel watertight *now*

Is it fitted with a watertight door *yes*

worked from *yes*

BOILERS, &c.—

(Letter for record *2*)

Total Heating Surface of Boilers *7032.5*

Is forced draft fitted *no*

Name and Description of Boilers *Three simple Endless*

Working Pressure *180 lbs*

Tested by hydraulic pressure to *360 lbs*

Date of test *22/1/02*

Can each boiler be worked separately *yes*

Area of fire grate in each boiler *65.4*

No. and Description of safety valves to boiler *Two spring valves*

Area of each valve *9.62*

Pressure to which they are adjusted *185 lbs*

Are they fitted with easing gear *yes*

Greatest distance between boilers or uptakes and bunkers or woodwork *12"*

Mean dia. of boilers *15'-0"*

Length *11'-9"*

Material of shell plates *S*

Thickness *1.3/4"*

Range of tensile strength *29-32*

Are they welded or flanged *no*

Descrip. of riveting: cir. seams *d. to riv.*

long. seams *d. 6.5" to riv.*

Diameter of rivet holes in long. seams *1.5/8"*

Pitch of rivets *9.7/8"*

Lap of plates or width of butt straps *2.1/2"*

Percentages of strength of longitudinal joint rivets *91.7*

plate *85.0*

Working pressure of shell by rules *215*

Size of manhole in shell *16" x 12"*

No. of compensating ring *7 x 1.5"*

No. and Description of Furnaces in each boiler *3 Furnaces*

Material *S*

Outside diameter *47.5"*

Thickness of plain part top *3.1/2"*

bottom *3.1/2"*

Thickness of plates crown *3.1/2"*

bottom *3.1/2"*

Description of longitudinal joint *Welded*

No. of strengthening rings *yes*

Working pressure of furnace by the rules *199*

Combustion chamber plates: Material *S*

Thickness: Sides *5/8"*

Back *5/8"*

Top *5/8"*

Bottom *3/32"*

Working pressure of stays to ditto: Sides *8.4 x 7.5"*

Back *8 x 8"*

Top *8 x 8.4"*

If stays are fitted with nuts or riveted heads *nuts*

Working pressure by rules *204*

Material of stays *Iron*

Diameter at smallest part *1.5/8"*

Area supported by each stay *66"*

Working pressure by rules *231*

End plates in steam space: Material *S*

Thickness *3/32"*

Pitch of stays *15.5" 14.4"*

How are stays secured *d.n.w.*

Working pressure by rules *182*

Diameter at smallest part *2.7/32"*

Area supported by each stay *230"*

Working pressure by rules *219*

Material of Front plates at bottom *S*

Thickness *1"*

Material of Lower back plate *S*

Thickness *1.5/8"*

Greatest pitch of stays *13 x 8"*

Working pressure of plate by rules *194*

Diameter of tubes *3"*

Pitch of tubes *4.3/8" 4.1/8"*

Material of tube plates *S*

Thickness: Front *1"*

Back *2.5/32"*

Mean pitch of stays *8.5"*

Working pressures across wide water spaces *14"*

Working pressures by rules *195*

Girders to Chamber tops: Material *S*

Depth and weight of girder at centre *11 x 1.5"*

Length as per rule *39"*

Distance apart *8"*

Number and pitch of Stays in each *3. 8.4"*

Working pressure by rules *187*

Superheater or Steam chest; how connected to boiler *now*

Can the superheater be shut off and the boiler worked *yes*

Material *yes*

Description of longitudinal joint *yes*

Diam. of rivet *yes*

Pitch of rivets *yes*

Working pressure of shell by rules *yes*

Diameter of flue *yes*

Material of flue plates *yes*

Thickness *yes*

Distance between rings *yes*

Working pressure by rules *yes*

End plates: Thickness *yes*

How stayed *yes*

Working pressure of end plates *yes*

Area of safety valves to superheater *yes*

Are they fitted with easing gear *yes*

DONKEY BOILER — *None* 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 _____
 Dia. 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 _____ Patch 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. _____
 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: — *One propeller shaft, two top end & two bottom end con. nut bolts & nuts, two main bearing bolts, one set fuel & bilge pump valves, one set coupling bolts, assorted bolts & nuts, Iron of various sizes.*

The foregoing is a correct description.
WALLSEND SLIPWAY & ENGINEERING CO. LIMITED Manufacturer.

Dates of Survey while building: During progress of work in shops — *1901 Nov. 7, 18, Dec. 8, 1902 Jan. 10, 16, 22, 24, 30, Feb. 5, 10, 21, March 6, 20, April 10, 17, 18, 22, 26, May 5, 12, 15.*
 During erection on board vessel — *27 June 26*
 Total No. of visits *20*
 Is the approved plan of main boiler forwarded herewith *Yes*
 " " " donkey " " " " *Yes*

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

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

The machinery of this vessel has been constructed under special survey. The materials and workmanship are sound and good and under the vessel class in my opinion to have record of L.M.C. 6.02

It is submitted that this vessel is eligible for THE RECORD. + L.M.C. 6.02. Etc. light.

The amount of Entry Fee... £ *3* : : When applied for, *19 JUN 1902*
 Special ... £ *40 12* : :
 Donkey Boiler Fee ... £ : : When received, *21/6/02*
 Travelling Expenses (if any) £ : : 1902

G. A. Saxe
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.
17/6/02

Committee's Minute **TUES. 17 JUN 1902**
 Assigned *+ L.M.C. 6.02*

Certificate (if required) to be sent to Newcastle-on-Tyne.

The Surveyors are requested not to write on or below the space for Committee's Minute.

MACHINERY CERTIFICATE WRITTEN.

