

REPORT ON MACHINERY.

Port of Sunderland

No. in Survey held at Sunderland

Received at London Office..... 10

Reg. Book.

Date, first Survey 29th Aug. 1901 Last Survey 21st Jan'y 1902.

on the Screw Steamer "Poldhu"

(Number of Visits 18.)

Master J. Hambly

Built at Sunderland

By whom built J. Blumer & Co

(164)

Tons } Gross 2793.43
Net 1790.56

When built 1902.

Engines made at Sunderland

By whom made John Dickinson & Sons Ltd

(560)

when made 1902

Boilers made at Sunderland

By whom made John Dickinson & Sons Ltd

when made 1902

Registered Horse Power

Owners Ferguson & Co Ltd

Port belonging to St Jves

Nom. Horse Power as per Section 28 263

Is Refrigerating Machinery fitted no

Is Electric Light fitted no

ENGINES, &c.—Description of Engines Triple Expansion

No. of Cylinders 3

No. of Cranks 3

Dia. of Cylinders 23-38-68

Length of Stroke 42

Revs. per minute 70

Dia. of Screw shaft as per rule 12.71

Lgth. of stern bush 4'-3"

Dia. of Tunnel shaft as per rule 11.3

as fitted 11.3

Dia. of Crank shaft journals as per rule 11.6

as fitted 11.3

Dia. of Crank pin 11.3

Size of Crank webs Patent

Dia. of thrust shaft under collars 11.3/4

No. of Feed pumps 2

Diameter of ditto 3 1/4"

Stroke 21"

No. of blades 4

State whether moveable no

Total surface 71 1/4 ft

No. of Bilge pumps 2

Diameter of ditto 4 1/4"

Stroke 21"

Can one be overhauled while the other is at work yes

No. of Donkey Engines 2

Sizes of Pumps Ballast 7 1/4 x 9 x 10

Can one be overhauled while the other is at work yes

In Engine Room

No. and size of Suctions connected to both Bilge and Donkey pumps one 3" port. one 3" Cleatboard - Centre 3 1/2"

In Holds, &c. two of 3" each hold. well 3"

No. of bilge injections 1

sizes 4

Connected to condenser, or to circulating pump C.P.

Is a separate donkey suction fitted in Engine room & size yes 4"

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 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 the blow off cocks fitted with a spigot and brass covering plate yes

Are they each fitted with a discharge valve always accessible on the plating of the vessel 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 last vessel

Is the screw shaft tunnel watertight yes

Is it fitted with a watertight door yes

worked from top platform

If not, state whether, and when, one will be sent

Is a Report sent on the Hull of the ship

Lloyd's Register of Shipping

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BOILERS, &c.—

(Letter for record (37))

Total Heating Surface of Boilers 4118 1/2 ft

Is forced draft fitted no

No. and Description of Boilers Two Cylindrical Multitubular

Working Pressure 160 lb

Tested by hydraulic pressure to 320 lb

Date of test 11.12.01

Can each boiler be worked separately yes

Area of fire grate in each boiler 56 ft

No. and Description of safety valves to each boiler two direct Spring

Area of each valve 8.3"

Pressure to which they are adjusted 165 lb

Are they fitted with easing gear yes

Smallest distance between boilers or uptakes and bunkers or woodwork 18"

Mean dia. of boilers 15'-0"

Length 10'-6"

Material of shell plates Steel

Thickness 1 3/32

Range of tensile strength 25 T

Are they welded or flanged no

Descrip. of riveting: cir. seams D.R. Rap

long. seams In R.D.B.S

Top of plates or width of butt straps 1'-5 1/2"

Diameter of rivet holes in long. seams 1 3/16

Pitch of rivets 8 3/16

Working pressure of shell by rules 160 lb

Size of manhole in shell 16" x 12"

Per centages of strength of longitudinal joint rivets 91.70

Size of compensating ring 8 3/8 x 1 3/32

No. and Description of Furnaces in each boiler 3 plain

Material Steel

Outside diameter 3'-6"

Length of plain part top 7'-1"

Thickness of plates crown 4 1/2"

Description of longitudinal joint Welded

Working pressure of furnace by the rules 162 lb

Combustion chamber plates: Material Steel

Thickness: Sides 5"

Back 1 1/2"

Top 5"

Bottom 1 1/2"

No. of strengthening rings 1

Pitch of stays to ditto: Sides 9 1/8 x 9 1/8

Back 10 x 9 1/2

Top 9 1/8 x 9 1/8

If stays are fitted with nuts or riveted heads nuts

Working pressure by rules 162 lb

End plates in steam space:

Material Steel

Thickness 1 3/32

Pitch of stays 18 1/4 x 16 1/2

How are stays secured D.R. Rap

Working pressure by rules 166 lb

Material of stays Steel

Diameter at smallest part 2.53

Area supported by each stay 18 1/4 x 16 1/2

Working pressure by rules 167 lb

Material of Front plates at bottom Steel

Thickness 3/4"

Material of Lower back plate Steel

Thickness 1 1/16

Greatest pitch of stays 9 1/2 x 10

Working pressure of plate by rules 172 lb

Diameter of tubes 3 1/4"

Pitch of tubes 4 1/2"

Material of tube plates Steel

Thickness: Front 13/16

Back 3/4"

Mean pitch of stays 9"

Pitch across wide water spaces 15 1/4"

Working pressures by rules 195 lb

Girders to Chamber tops: Material Steel

Depth and thickness of girder at centre 8 1/8 x 3 1/4 x (2)

Length as per rule 30 1/16

Distance apart 9 1/8

Number and pitch of Stays in each 2 of 9 1/8 pitch

Working pressure by rules 161 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

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



W1273-0135

DONKEY BOILER— No. *one* Description *Cylindrical multibulbar, two plain furnaces*
 Made at *Stockton* By whom made *Riley Bros.* When made *3.12.01* Where fixed *on deck*
 Working pressure *80 lb* tested by hydraulic pressure to *160* No. of Certificate *2648* Fire grate area *23.54* Description of safety valves *direct spring*
 No. of safety valves *two* Area of each *7.0* Pressure to which they are adjusted *80 lb* If fitted with easing gear *yes* If steam from main boilers can enter the donkey boiler *no* Dia. of donkey boiler *9'-0"* Length *8'-6"* Material of shell plates *Steel* Thickness *1/2"* Range of tensile strength *27/32* Descrip. of riveting long seams *Hi Riv Cap* Dia. of rivet holes *15/16* Whether punched or drilled *dr* Pitch of rivets *4 1/8"*
 Lap of plating *6 1/2"* Per centage of strength of joint Rivets *85-90* Thickness of shell plates *3/4* Radius of do. *pitch* No. of Stays to do. *17 x 16 1/2*
 Dia. of stays *2 1/8" effed* Diameter of furnace Top *31"* Bottom *15"* Length of furnace *5'-4"* Thickness of furnace plates *7/16* Description of joint *weld* Thickness of furnace *cross* plates *3/32* Stayed by *1 1/8" eff SS 8 1/4" Riv* Working pressure of shell by rules *83.7 lb*
 Working pressure of furnace by rules *80 lb* Diameter of *tubes* *3 1/2"* Thickness of *uptake* plates *F 3/4 B 3/16* Thickness of *water* tubes *5/16"*

SPARE GEAR. State the articles supplied: *Two top end bolts and nuts, two bottom end bolts and nuts, two main bearing bolts and nuts, spare coupling bolts and nuts, assorted iron bolts and nuts,*

The foregoing is a correct description,
John G. Mack Manufacturer.

Dates of Survey while building
 During progress of work in shops - *Jan. 1901 - Aug. 29*
 During erection on board vessel - *Sept. 3, 11, 12, 15, 1901 - Oct. 15, 17, 30, Nov. 7, 11, 12, 19, 24, 29, Dec. 9, 1901 - Jan. 16, 21, 1902.*
 Total No. of visits *18*

Is the approved plan of main boiler forwarded herewith *no*
Scantling duplicate of Darwin donkey

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

Material of screw shaft *Wootton* 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

The machinery built under Special Survey the material and workmanship found good and efficient.
The main boilers and steam pipes tested under hydraulic pressure to 320 lbs per square inch and found sound and efficient in every respect at that pressure.
The engines tried under steam at their working pressures & found satisfactory.
In my opinion this vessel is worthy of the notification L.M.C. 1.02 to be made in the Register Book.

It is submitted that this vessel is eligible for THE RECORD :- L.M.C. 1.02

The amount of Entry Fee... £ *2* : When applied for, *5.2.02*
 Special ... £ *33* : :
 Donkey Boiler Fee ... £ : :
 Travelling Expenses (if any) £ : :
 When received, *6.2.02*

Leonard Challers
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute *FRI, FEB 7 1902*
 Assigned *+ 2 M.C. 1.02*



Certificate (if registered) to be sent to the Surveyors as requested not to write on or below the space for Committee's Minute.