

## REPORT ON MACHINERY.

Port of

Falmouth

MON. 5 SEP 1892

Received at London Office

13

No. in Survey held at  
Reg. Book.

Hoyle

Date, first Survey 3<sup>rd</sup> March 1892 Last Survey 30<sup>th</sup> August 1892

(Number of Visits 24)

on the

S. S. "Volney" S. S. No 155

Tons

Gross 361

Net 110.93

Master

Built at Hoyle

By whom built

Messrs Harvey &amp; Co (Lim)

When built

1892-8

Engines made at

Hoyle

By whom made

Messrs Harvey &amp; Co (Lim)

when made

1892

Boilers made at

Hoyle

By whom made

Messrs Harvey &amp; Co (Lim)

when made

1892

Registered Horse Power

73

Owners Allen Heywood Bright &amp; Earnest Cooke

Port belonging to

Liverpool

Nom. Horse Power as per Section 28

96.36

## ENGINES, &amp;c.—

Description of Engines

Tri Corn Inverted Surface Condensing

No. of Cylinders

3

Diameter of Cylinders

15", 23", 35"

Length of Stroke

30"

Revolutions per minute

98

Diameter of Screw shaft

as per rule 4" 3/16

Diameter of Tunnel shaft

as per rule 6" 9/32

Diameter of Crank shaft journals

7 1/2"

Diameter of Crank pin

7 1/2"

Size of Crank webs

as fitted 15" x 5"

Diameter of screw

9-3"

Pitch of screw

14-6"

No. of blades

4

State whether moveable

No

Total surface

22 1/2 sq ft

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 3/4"

Stroke

13 1/2"

Can one be overhauled while the other is at work

Yes

No. of Donkey Engines

One

Sizes of Pumps

One 2" Pump, duplex Pumps

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

In Engine Room

Two, 2 1/2"

In Holds, &amp;c.

Two, 2", One, 2 1/2", One in Tunnel 2 1/2",

No. of bilge injections

1

sizes

4 1/4"

Connected to condenser, or to circulating pump

Pump

Is a separate donkey suction fitted in Engine room &amp; size

Yes, 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

Yes

Are all connections with the sea direct on the skin of the ship

Yes

Are they Valves or Cocks

Valves and Cocks

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

✓

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

16<sup>th</sup> August 1892

Is the screw shaft tunnel watertight

Yes

Is it fitted with a watertight door

None fitted

worked from

✓

## BOILERS, &amp;c.—

(Letter for record)

Total Heating Surface of Boilers

1703 sq ft

No. and Description of Boilers

One cylindrical multitubular

Working Pressure

160 lbs

Tested by hydraulic pressure to

320 lbs

Date of test

24<sup>th</sup> June

Can each boiler be worked separately

✓

Area of fire grate in each boiler

56 1/4 sq ft

and Description of safety valves to

each boiler

Two, Harveys Lepped Spring

Area of each valve

12.56

Pressure to which they are adjusted

160 lbs

Are they fitted

with easing gear

Yes

Smallest distance between boilers or uptakes and bunkers or woodwork

12"

Mean diameter of boilers

13-6"

Length

10-5"

Material of shell plates

Steel

Thickness

13/16"

Description of riveting: circum. seams

Double Riveted Lap

seams

Double Riveted Butts

Diameter of rivet holes in long. seams

1 1/4"

Pitch of rivets

4 1/4"

Lap of plates or width of butt straps

1-6 3/8"

Per centages of strength of longitudinal joint

rivets 84.7

plate 85.7

Working pressure of shell by rules

163.3

Size of manhole in shell

16 x 12"

Size of compensating ring

The High Patent

No. and Description of Furnaces in each boiler

3, Plain

Material

Steel

Outside diameter

39"

Length of plain part

top 6-8"

Thickness of plates

crown 23/32"

bottom 23/32"

Description of longitudinal joint

Double Butts Strap

No. of strengthening rings

Two

Working pressure of furnace by the rules

169

Combustion chamber plates: Material

Steel

Thickness: Sides

5/8"

Back

5/8"

Top

5/8"

Bottom

23/32"

Pitch of stays to ditto: Sides

8 1/2"

Back

8 1/2"

Top

8 1/2"

If stays are fitted with nuts or riveted heads

Nuts

Working pressure by rules

166

Material of stays

Steel

Diameter at smallest part

1' 3 3/4"

Area supported by each stay

72.25

Working pressure by rules

165

End plates in steam space:

Material

Steel

Thickness

31/32"

Pitch of stays

5 1/2" x 1 1/2"

How are stays secured

Double Nuts

Working pressure by rules

182

Material of stays

Steel

Diameter at smallest part

2' 3 3/8"

Area supported by each stay

224.75

Working pressure by rules

160

Material of Front plates at bottom

Steel

Thickness

1"

Material of Lower back plate

Steel

Thickness

7/8"

Greatest pitch of stays

only one stay fitted

Working pressure of plate by rules

184

Diameter of tubes

3 1/2"

Pitch of tubes

4 3/4"

Material of tube plates

Steel

Thickness: Front

1"

Back

13/16"

Mean pitch of stays

11 3/8"

Pitch across wide water spaces

14"

Working pressures by rules

160

Girders to Chamber tops: Material

Steel

Depth and

thickness of girder at centre

6 1/4" x 3 1/4"

Length as per rule

2-1 1/2"

Distance apart

7 1/2"

Number and pitch of Stays in each

Two, 8 1/2"

Working pressure by rules

161.3

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

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

✓

Lloyd's Register

Foundation



DONKEY BOILER— Description *Vertical with Cross Water Tubes*  
Made at *Gateshead* By whom made *Clarke Chapman & Co* When made *1892* Where fixed *Between 2. Room 1st class*  
Working pressure *75 lbs* tested by hydraulic pressure to *150* No. of Certificate *3844* Fire grate area *41'04* Description of safety valves *Lipped Spring*  
No. of safety valves *1* Area of each *7'068* Pressure to which they are adjusted *45 lbs* If fitted with easing gear *yes* If steam from main boiler can enter the donkey boiler *no* Diameter of donkey boiler *4-6* Length *10-6* Material of shell plates *Steel* Thickness *1/2*  
Description of riveting long. seams *Double Riveted Lap* Diameter of rivet holes *1 1/16* Whether punched or drilled *Drilled* Pitch of rivets *2 1/2*  
Lap of plating *3 3/8* Per centage of strength of joint *72.5* Rivets *72.5* Thickness of shell crown plates *1/2* Radius of do. *5* No. of Stays to do. *3*  
Dia. of stays *1 1/2* Diameter of furnace Top *3-2 1/4* Bottom *3-9* Length of furnace *5-0* Thickness of furnace plates *15/32* Description of joint *Single Lap* Thickness of furnace crown plates *15/32* Stayed by *as shell crown* Working pressure of shell by rules *97 lbs*  
Working pressure of furnace by rules *89 lbs* Diameter of uptake *12* Thickness of uptake plates *3/8* Thickness of water tubes *3/8*

SPARE GEAR. State the articles supplied:—*Two Connecting Rods and Two Bottom End Bolts and Nuts, Two Main Bearing Bolts, One set of Coupling Bolts, One set of Piston Springs for each Engine, One set of Safety Valve Springs for Main and Donkey Boilers, One Spring for each escape Valve, One set of Head and Bilge Pump Valves, Twelve Boiler Tubes, Twelve Condenser Tubes, Twelve joint Ring Bolts, Two Horns*  
The foregoing is a correct description, *dred Wood Ferrules, a quantity of assorted Bolts and Nuts, Iron of various sizes, One Propeller,*  
*Harvey & Co. Manufacturer.*

General Remarks (State quality of workmanship, opinions as to class, &c. *The Machinery has been made and fitted under Special Survey and under my inspection from commencement to completion, I have every reason to believe the material to be of the very best quality. The Workmanship is good throughout, The Feed and Steam Pipes are made of solid drawn Copper and have been tested in my presence to 3500 lbs per square inch showing no appearance of weakness or bad work. The Main Boiler has been constructed under Special Survey and the materials and Workmanship are good, being tested to 320 lbs per square inch and were found perfectly tight and satisfactory. Safety Valves are set to relieve at 160 lbs pressure lifting freely with 6% accumulation.*

*The Donkey Boiler was constructed by Clarke Chapman & Co at Gateshead and under Special Survey, see Report Attached, Safety Valve set to relieve at 75 lbs pressure lifting freely with no apparent accumulation. At the Trial the Engines worked well and efficiently with no signs of heat. Bearings, Steam 155, Vac 26 1/2, Rev 98, Vessel being light, All the Auxiliary Machinery appears good and efficient, Every thing being fitted in accordance with the Rules and Instructions I am of opinion that the Machinery is fit for Classification in the Society's Register Book and beg to Recommend for the Committee's approval that a Machinery Certificate be granted and the notation of +LMC 8,92 made in the Register Book.*

Certificate (if required) to be sent to *This Office*  
The amount of Entry Fee. . . £ *1-0-0* When applied for, £ *26-8-0* 1892  
Special . . . £ *14-8-0*  
Donkey Boiler Fee *Received at Newcastle on Tyne* When received, £ *27-8-0* 1892  
Travelling Expenses (if any) £ *14-2-0*  
Committee's Minute *TBM*  
Assigned *+LMC 8,92*

*R. H. Cooper*  
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.