

## REPORT ON MACHINERY.

No. 61026

Received at London Office

FRI. SER 15. 1911

of writing Report

19

When handed in at Local Office

10

Port of

NEWCASTLE ON TYNE.

in Survey held at

Newcastle on Tyne

Date, First Survey

27<sup>th</sup> Jun 1910

Last Survey

23<sup>rd</sup> Aug 1911

g. Book.

on the

S. S. Pancras

(Number of Visits 63)

Master

Built at

Woburn

By whom built

Hawthorn Leslie &amp; Co

Tons

Gross 4436

Net 2809

When built

1911

Engines made at

Wallsend

By whom made

H. E. Marine Eng<sup>t</sup> & Co L<sup>d</sup>

when made

1911

Milers made at

Wallsend

By whom made

Sitto

when made

1911

Registered Horse Power

Owners

Booth Steamship Co. Ltd

Port belonging to

Liverpool

m. Horse Power as per Section 28

446

Is Refrigerating Machinery fitted for cargo purposes

no

Is Electric Light fitted

Yes

GINES, &amp;c.—Description of Engines

Inverted triple expansion

No. of Cylinders

3

No. of Cranks

3

a. of Cylinders

24, 40, 67"

Length of Stroke

48"

Revs. per minute

74

Dia. of Screw shaft

as per rule 13.87

Material of

Steel

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

Yes

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

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

Yes

Length of stern bush

5' 6"

a. of Tunnel shaft

as per rule 12.39

Dia. of Crank shaft journals

as per rule 13.07

Dia. of Crank pin

13 1/2"

Size of Crank webs

26 1/2 x 8 1/2"

Dia. of thrust shaft under

ars

13 1/2"

Dia. of screw

17.0"

Pitch of Screw

16.0"

No. of Blades

4

State whether moveable

Yes

Total surface

86 sq ft

of Feed pumps

2

Diameter of ditto

3 3/4"

Stroke

24"

Can one be overhauled while the other is at work

Yes

of Bilge pumps

2

Diameter of ditto

3 3/4"

Stroke

24"

Can one be overhauled while the other is at work

Yes

of Donkey Engines

2

Sizes of Pumps

F. 8 x 5 1/2 x 8, B. 10 x 12 x 10"

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

Engine Room

4 of 3 1/2"

In Holds, &amp;c.

2 of 3 1/2" to each + 1 of 3" to tunnel

of Bilge Injections

1 size 8"

Connected to condenser, or to circulating pump

Yes

Is a separate Donkey Suction fitted in Engine room &amp; size

Yes - 3 1/2"

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

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

Yes

Are they Valves or Cocks

both

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

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

at pipes are carried through the bunkers

Yes

How are they protected

Yes

all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times

Yes

the Bilge Suction Pipes, Cocks, and Valves arranged so as to prevent any communication between the sea and the bilges

Yes

Tests of examination of completion of fitting of Sea Connections

28.4.11

of Stern Tube

28.4.11

Screw shaft and Propeller

3.5.11

the Screw Shaft Tunnel watertight

Yes

Is it fitted with a watertight door

Yes

worked from

top platform

MLERS, &amp;c.—(Letter for record

r)

Manufacturers of Steel

J. Spencer &amp; Sons

al Heating Surface of Boilers

5630 sq ft

Is Forced Draft fitted

Yes

No. and Description of Boilers

2 S.E. Cyl<sup>rs</sup> 1 Mult<sup>l</sup>

Working Pressure

180 lbs

Tested by hydraulic pressure to

360 lbs

Date of test

15.2.11

No. of Certificate

8089

each boiler be worked separately

Yes

Area of fire grate in each boiler

64.5 sq ft

No. and Description of Safety Valves to

boiler

2 spring

Area of each valve

11.04 sq in

Pressure to which they are adjusted

183 lbs

Are they fitted with easing gear

Yes

smallest distance between boilers or uptakes and bunkers or woodwork

18"

Mean dia. of boilers

16.0"

Length

11.10 3/4"

Material of shell plates

Steel

Thickness

1 7/16"

Range of tensile strength

28 3/4/32

Are the shell plates welded or flanged

no

Descrip. of riveting: cir. seams

d.r. lap.

seams

L.x.d. &amp; S.

Diameter of rivet holes in long. seams

1 1/2"

Pitch of rivets

10 1/4"

Lap of plates or width of butt straps

21 15/16"

centages of strength of longitudinal joint

rivets 89.3

plate 83.3

Working pressure of shell by rules

210.6 lbs

Size of manhole in shell

16 x 12"

of compensating ring

flanged ends

No. and Description of Furnaces in each boiler

3 Deighton

Material

Steel

Length of plain part

top 11 1/16"

bottom 11 1/16"

Thickness of plates

crown 11 1/16"

bottom 11 1/16"

Description of longitudinal joint

weld

No. of strengthening rings

Yes

Working pressure of furnace by the rules

199.4 lbs

Combustion chamber plates: Material

Steel

Thickness: Sides

23/32"

Back

23/32"

Top

23/32"

Length of stays to ditto:

Sides

10 x 9"

Back

10 1/2 x 8 3/8"

Top

10 x 9"

If stays are fitted with nuts or riveted heads

nuts

Working pressure by rules

193 lbs

Material of stays

Iron

Diameter at smallest part

2.36"

Area supported by each stay

90.56 sq in

Working pressure by rules

196.6 lbs

Material

Steel

Thickness

1 5/16"

Pitch of stays

24 x 17 1/4"

How are stays secured

d.n.v.w.

Working pressure by rules

187 lbs

Material of stays

Steel

Diameter at smallest part

8.29"

Area supported by each stay

414 sq in

Working pressure by rules

200 lbs

Material of Front plates at bottom

Steel

Thickness

1 1/32"

Material of Lower back plate

Steel

Thickness

7/8"

Greatest pitch of stays

14 3/4 x 8 5/8"

Working pressure of plate by rules

184.0 lbs

Diameter of tubes

2 3/4"

Pitch of tubes

3 1/2 x 4"

Material of tube plates

Steel

Thickness: Front

1 1/32"

Back

13/16"

Mean pitch of stays

7 7/8 x 8"

Pitch across wide water spaces

14 3/4"

Working pressures by rules

187.5 lbs

Girders to Chamber tops: Material

Steel

Thickness of girder at centre

9 3/4 x 2"

Length as per rule

35 1/2"

Distance apart

10"

Number and pitch of stays in each

3-9"

Working pressure by rules

184.5 lbs

Superheater or Steam chest; how connected to boiler

Yes

Can the superheater be shut off and the boiler worked

Yes

Material

Steel

Description of longitudinal joint

weld

Diam. of rivet

Pitch of rivets

Working pressure of shell by rules

Diameter of flue

Material of flue plates

Thickness



# VERTICAL DONKEY BOILER—

Manufacturers of Steel

No. \_\_\_\_\_ Description \_\_\_\_\_  
 Made at \_\_\_\_\_ By whom made \_\_\_\_\_ When made \_\_\_\_\_ Where fixed \_\_\_\_\_  
 Working pressure \_\_\_\_\_ tested by hydraulic pressure to \_\_\_\_\_ Date of test \_\_\_\_\_ No. of Certificate \_\_\_\_\_ Fire grate area \_\_\_\_\_ Description of Safety  
 Valves \_\_\_\_\_ No. of Safety Valves \_\_\_\_\_ Area of each \_\_\_\_\_ Pressure to which they are adjusted \_\_\_\_\_ Date of adjustment \_\_\_\_\_  
 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 \_\_\_\_\_ Pitch of rivets \_\_\_\_\_ Lap of plating \_\_\_\_\_ Per centage of strength of joint \_\_\_\_\_ Rivets \_\_\_\_\_  
 Working pressure of shell by rules \_\_\_\_\_ 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 \_\_\_\_\_  
 Working pressure of furnace by rules \_\_\_\_\_ Thickness of furnace crown plates \_\_\_\_\_ Radius of do. \_\_\_\_\_ Stayed by \_\_\_\_\_  
 Diameter of uptake \_\_\_\_\_ Thickness of uptake plates \_\_\_\_\_ Thickness of water tubes \_\_\_\_\_ Dates of survey \_\_\_\_\_

SPARE GEAR. State the articles supplied:— 2 Top end, 2 bottom end, 2 Main bearing & 1 set of Coupling bolts, 3 Crankshaft, Propeller shaft & 2 spare blades, 1 pair bottom ends, 1 P. Valve spindles, Head Valve seat & guard also bucket for Air pump, 2 Main feed check Valves, one set springs for each piston, 1 set studs for one blade of propeller for propeller bone, 1 Impeller for feed & bilge pump valves, Circulating Pump

NORTH EASTERN ENGINEERING CO. LTD.

S. T. Harrison Manufacturer.

Secretary, 1910  
 Dates of Survey while building { During progress of work in shops - - {  
 { During erection on board vessel - - {  
 Total No. of visits 83  
 Is the approved plan of main boiler forwarded herewith \_\_\_\_\_  
 " " " donkey " " " \_\_\_\_\_

Dates of Examination of principal parts—Cylinders 20.1.11 Slides 2.2.11 Covers 2.2.11 Pistons 2.6.10-10 Rods 2.2.11  
 Connecting rods 25.8.10 Crank shaft 28.11.10 Thrust shaft 20.10.10 Tunnel shafts 22.3.11 Screw shaft 28.11.10 Propeller 8.9.10  
 Stern tube 24.3.11 Steam pipes tested 9.9.10 Engine and boiler seatings 28.4.11 Engines holding down bolts 9.5.11  
 Completion of pumping arrangements 13.6.11 Boilers fixed 9.5.11 Engines tried under steam 13.6.11  
 Main boiler safety valves adjusted 13.6.11 Thickness of adjusting washers P.F. 9/16, P.A. 9/16, S.F. 9/16, S.A. 9/16  
 Material of Crank shaft steel Identification Mark on Do. RMC 28/10/10 Material of Thrust shaft steel Identification Mark on Do. RMC 28/10/10  
 Material of Tunnel shafts steel Identification Marks on Do. 22.3.11 Material of Screw shafts steel Identification Marks on Do. RMC 28.11.10  
 Material of Steam Pipes Steel Test pressure 5740 lbs

General Remarks (State quality of workmanship, opinions as to class, &c.) The Machinery of this vessel has been constructed under special survey, the workmanship and materials used are both of good quality, the Engines have been tried under steam and worked satisfactorily.

I beg to recommend that this vessel is eligible in my opinion to have the record L.M.C. 8-11 in the Register Book

It is submitted that this vessel is eligible for THE RECORD, + LMC 8-11

2SB (FD) 1 Aug 11

The amount of Entry Fee .. £ 3 : 0 : 0 When applied for, SEP 14 1911  
 Special .. £ 42 : 6 : 0  
 Donkey Boiler Fee .. £ : : :  
 Travelling Expenses (if any) £ : : :  
 When received, 28.9.11

R. W. Coomber

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

Committee's Minute

SEP 19 1911

Assigned

L.M.C. 8-11

ORIGINAL CERTIFICATE  
 WAITER



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 Foundation