

Received at London Office

THU. SEP 4-1913

Date of writing Report

19

When handed in at Local Office

29 10/13 Port of

Sunderland

No. in Survey held at  
Reg. Book.

on the

Sunderland  
Steel S.S. Shirley

Date, First Survey

31 Decr.

Last Survey

29 August 1913

(Number of Visits

27

Gross 4850

Master

Hopley

Built at

Sunderland

By whom built

Sunderland S.B. Coy Ltd

Tons

Net 2989

When built

1913

Engines made at

Sunderland

By whom made

J. Dickinson &amp; Sons Ltd. (158C)

when made

1913

Boilers made at

Sunderland

By whom made

J. Dickinson &amp; Sons Ltd

when made

1913

Registered Horse Power

Owners

Houlder, Middleton &amp; Co. Ltd

Port belonging to

London

Nom. Horse Power as per Section 28

505

Is Refrigerating Machinery fitted for cargo purposes

no

Is Electric Light fitted

yes

## ENGINES, &amp;c.—Description of Engines

Triple Expansion

No. of Cylinders

Three

No. of Cranks

Three

Dia. of Cylinders

24" x 45" x 44"

Length of Stroke

51"

Revs. per minute

40

Dia. of Screw shaft

as per rule 15.1"

Material of

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

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

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

yes

Length of stern bush

5'-3"

Dia. of Tunnel shaft

as per rule 12.66"

Dia. of Crank shaft journals

as per rule 11.34"

Dia. of Crank pin

14.5"

Size of Crank webs

Patent

Dia. of thrust shaft under

collars

14.5"

Dia. of screw

18'-0"

Pitch of Screw

14'-0"

No. of Blades

Four

State whether moveable

no

Total surface

95.2 sq ft

No. of Feed pumps

Two

Diameter of ditto

4.5"

Stroke

25.5"

Can one be overhauled while the other is at work

yes

No. of Bilge pumps

Two

Diameter of ditto

5"

Stroke

25.5"

Can one be overhauled while the other is at work

yes

No. of Donkey Engines

Four

Sizes of Pumps

10" x 10", 5" x 5", 3" x 5", 5" x 6"

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

In Engine Room

Three @ 3.5" dia.

In Holds, &amp;c.

2 @ 3.5" diameter in each

No. of Bilge Injections

One

Connected to condenser, or to circulating pump

C.B.P.

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

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

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

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

Dates of examination of completion of fitting of Sea Connections

10.7.13

of Stern Tube

31.7.13

Screw shaft and Propeller

31.7.13

Is the Screw Shaft Tunnel watertight

yes

Is it fitted with a watertight door

yes

worked from

Top platform

## BOILERS, &amp;c.—(Letter for record)

(S)

Manufacturers of Steel

John Spence and Sons Ltd

Total Heating Surface of Boilers

7107 sq ft

Is Forced Draft fitted

yes

No. and Description of Boilers

Three single ended

Working Pressure

180 lbs

Tested by hydraulic pressure to

360 lbs

Date of test

23.4.13

No. of Certificate

3131

Can each boiler be worked separately

yes

Area of fire grate in each boiler

60 sq ft

No. and Description of Safety Valves to

each boiler

Two spring loaded

Area of each valve

8.3 sq ft

Pressure to which they are adjusted

185 lbs

Are they fitted with easing gear

Smallest distance between boilers or uptakes and bunkers or woodwork

24"

Mean dia. of boilers

14'-9"

Length

11'-6"

Material of shell plates

Thickness

1.5"

Range of tensile strength

28.7 x 32 tons

Are the shell plates welded or flanged

no

Descrip. of riveting: cir. seams

long. seams

T.R.D.B.S.

Diameter of rivet holes in long. seams

1.5"

Pitch of rivets

8.3"

Lap of plates or width of butt straps

1'-4"

Per centages of strength of longitudinal joint

rivets 96.8

plate 85

Working pressure of shell by rules

187 lbs

Size of manhole in shell

16" x 12"

Size of compensating ring

8.5" x 1.5"

No. and Description of Furnaces in each boiler

Three Cor

Material

Steel

Outside diameter

Length of plain part

top

Thickness of plates

crown 1.35"

bottom 1.64"

Description of longitudinal joint

weld

No. of strengthening rings

21"

21"

21"

Working pressure of furnace by the rules

185 lbs

Combustion chamber plates: Material

Steel

Thickness: Sides

21"

Back

21"

Top

21"

Pitch of stays to ditto: Sides

8" x 8"

Back

8.5" x 8"

Top

8" x 8.5"

If stays are fitted with nuts or riveted heads

nuts

Working pressure by rules

Material of stays

Steel

Area at smallest part

2.031

Area supported by each stay

70 sq ft

Working pressure by rules

217 lbs

End plates in steam space

Material

Steel

Thickness

1.5"

Pitch of stays

17" x 19"

How are stays secured

D.N. Wash

Working pressure by rules

205 lbs

Material of stays

Area at smallest part

2.22 sq ft

Area supported by each stay

32.3 sq ft

Working pressure by rules

232 lbs

Material of Front plates at bottom

Steel

Thickness

1.5"

Material of Lower back plate

Steel

Thickness

1.5"

Greatest pitch of stays

14" x 8"

Working pressure of plate by rules

Diameter of tubes

2.5"

Pitch of tubes

3.5" x 3.5"

Material of tube plates

Steel

Thickness: Front

1.5"

Back

1.5"

Mean pitch of stays

Pitch across wide water spaces

14"

Working pressures by rules

272 lbs

Girders to Chamber tops: Material

Steel

Depth and

thickness of girder at centre

20" x 4.5" x 1"

Length as per rule

2'-5.5"

Distance apart

8.5"

Number and pitch of stays in each

3 @ 8"

Working pressure by rules

214 lbs

Superheater or Steam chest; how connected to boiler

how

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

yes

Lloyd's Register

Foundation

W768-0017



# VERTICAL DONKEY BOILER—

Manufacturers of Steel

No.	Description	When made	Where fixed
Made at	By whom made	No. of Certificate	Fire grate area
Working pressure	tested by hydraulic pressure to	Date of test	Description of Safety
Values	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	Date of adjustment	
Material of shell plates	Thickness	Range of plate strength	Dia. of donkey boiler
Dia. of rivet holes	Whether punched or drilled	Pitch of rivets	Length
Working pressure of shell by rules	Thickness of shell crown plates	Radius of do.	No. of stays to do.
Diameter of furnace Top	Bottom	Length of furnace	Thickness of furnace plates
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:—Two off bolts & nuts for top and bottom ends and main bearings. One set of coupling bolts. Propeller. Propeller shaft. 11 packing ring and springs. One set valve each for feed and bilge pumps. Assorted bolts nuts & iron. Two feed check valves. 2 safety valve springs. 2 escape valve springs.

The foregoing is a correct description,

JOHN DUNN & SONS, Limited. Manufacturer.

Dates of Survey while building	During progress of work in shops	1912. Dec. 31. Jan. 29. Mar. 6. 12. 28. 31. Apr. 28. May 22. 29. June 26. July 8. 16. 18.
	During erection on board vessel	22. 24. 30. 31. Aug. 1. 11. 13. 15. 16. 22. 25. 29
Total No. of visits		(27)

Is the approved plan of main boiler forwarded herewith **Yes.**

Dates of Examination of principal parts	Cylinders	28. 4. 13	Slides	22. 5. 13	Covers	22. 5. 13	Pistons	24. 6. 13	Rods	24. 6. 13	
Connecting rods	24. 6. 13	Crank shaft	8. 7. 13	Thrust shaft	8. 7. 13	Tunnel shafts	8. 7. 13	Screw shaft	18. 7. 13	Propeller	18. 7. 13
Stern tube	18. 7. 13	Steam pipes tested	11. 8. 13	Engine and boiler seatings	8. 7. 13	Engines holding down bolts	13. 8. 13				
Completion of pumping arrangements	16. 8. 13	Boilers fixed	13. 8. 13	Engines tried under steam	16. 8. 13						
Main boiler safety valves adjusted	16. 8. 13	Thickness of adjusting washer	2 1/2" a 1 1/2". CB f 7/16 a 7/16. SB f 12/32 a 12/32								
Material of Crank shaft	S	Identification Mark on Do.	2240 A.F.	Material of Thrust shaft	S	Identification Mark on Do.	2660-M.B				
Material of Tunnel shafts	S	Identification Marks on Do.	266102 M.B. 456/243 H.K. 76/1048 J.M.	Material of Screw shafts	S	Identification Marks on Do.	7611-2 J.M.				
Material of Steam Pipes	copper 5' fore & 5' aft.	Test pressure	1400 lbs.								

**General Remarks** (State quality of workmanship, opinions as to class, &c.) *Machinery and boilers built under Special Survey. Materials and workmanship good. Engines & boilers examined under full steam & found satisfactory. In our opinion this vessel is eligible for the record of L.M.C. 8/1913*

It is submitted that this vessel is eligible for THE RECORD. + L.M.C. 8.13.

F.D.

J. J. Findlay

William D. Dutter

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

The amount of Entry Fee	£ 3 : 0 : 0	When applied for	2. 9. 13
Special	£ 45. 5 : 0	When received	5/9/13
Donkey Boiler Fee	£ :		
Travelling Expenses (if any)	£ :		

Committee's Minute

FRI. SER. 5-1013

Assigned

L.M.C. 8.13

MACHINERY CERTIFICATE WRITTEN.



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