

REPORT ON MACHINERY.

Received at London Office

THU. SEP 4 - 1913

Date of writing Report

19

When handed in at Local Office

3. 9. 13 Port of

Sunderland

No. in Survey held at Reg. Book.

Sunderland

Date, First Survey

31 Decr.

Last Survey

29 August 1913

on the

Steel S.S. Shirley

Master

Hopley

Built at

Sunderland

By whom built

Sunderland S.B. Coy Ltd

Tons

4850

Net

2989

When built

1913

Engines made at

Sunderland

By whom made

J. Dickinson & Sons Ltd. (158C)

when made

1913

Boilers made at

Sunderland

By whom made

J. Dickinson & Sons Ltd

when made

1913

Registered Horse Power

505

Is Refrigerating Machinery fitted for cargo purposes

no

Is Electric Light fitted

yes

ENGINES, &c.—Description of Engines

Triple Expansion

No. of Cylinders

Three

No. of Cranks

Three

Dia. of Cylinders

24" x 45" x 4 1/4"

Length of Stroke

51"

Revs. per minute

40

Dia. of Screw shaft

as per rule 15 1/4"

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

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

Length of stern bush

5'-3"

Dia. of Tunnel shaft

as per rule 13 3/4"

Dia. of Crank shaft journals

as per rule 11 3/4"

Dia. of Crank pin

14 5/8"

Size of Crank webs

Patent

Dia. of thrust shaft under

collars

collars

14 5/8"

Dia. of screw

18'-0"

Pitch of Screw

14'-0"

No. of Blades

Four

State whether moveable

no

Total surface

95 1/2 sq ft

No. of Feed pumps

Two

Diameter of ditto

4 1/2"

Stroke

25 1/2"

Can one be overhauled while the other is at work

yes

No. of Bilge pumps

Two

Diameter of ditto

5"

Stroke

25 1/2"

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 1/2" x 5", 5 1/2" x 6"

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

In Engine Room

Three @ 3 1/2" dia.

In Holds, &c.

2 @ 3 1/2" diameter in each

No. of Bilge Injections

One

Connected to condenser, or to circulating pump

no

Is a separate Donkey Suction fitted in Engine room & 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

BOILERS, &c.—(Letter for record)

(S)

Manufacturers of Steel

John Spence and Sons Ltd

Total Heating Surface of Boilers

4107 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. 7. 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 in

Pressure to which they are adjusted

185 lbs

Smallest distance between boilers or uptakes and bunkers or woodwork

24"

Mean dia. of boilers

14'-9"

Length

11'-6"

Material of shell plates

Steel

Thickness

1 3/16"

Range of tensile strength

28 3/4 to 32 tons

Are the shell plates welded or flanged

no

Descrip. of riveting: cir. seams

D.R.

long. seams

T.R.D.B.S.

Diameter of rivet holes in long. seams

1 5/16"

Pitch of rivets

8 3/4"

Lap of plates or width of butt straps

1'-4 1/4"

Per centages of strength of longitudinal joint

96.8

Working pressure of shell by rules

184 lbs

Size of manhole in shell

16 x 12"

Size of compensating ring

8 5/8" x 1 3/16"

No. and Description of Furnaces in each boiler

Three Cor

Material

Steel

Outside diameter

3'-10"

Length of plain part

top

bottom

Thickness of plates

3 3/8"

Description of longitudinal joint

weld

No. of strengthening rings

21

21

21

21

21

21

21

21

21

Working pressure of furnace by the rules

185 lbs

Combustion chamber plates: Material

Steel

Thickness: Sides

21"

Back

21"

Top

21"

Bottom

21"

21"

21"

21"

Pitch of stays to ditto: Sides

8" x 8"

Back

8 3/4" x 8"

Top

8" x 8 1/2"

If stays are fitted with nuts or riveted heads

huts

Working pressure by rules

211 lbs

Material of stays

Steel

Area at smallest part

2.031

Area supported by each stay

70 sq in

Working pressure by rules

217 lbs

End plates in steam space:

Material

Steel

Thickness

1 3/16"

Material

Steel

Area at smallest part

1.22 sq in

Area supported by each stay

32.3 sq in

Working pressure by rules

232 lbs

Material of Front plates at bottom

Steel

Thickness

1"

Greatest pitch of stays

Diameter of tubes

2 1/2"

Pitch of tubes

3 3/4" x 3 3/4"

Material of tube plates

Steel

Thickness: Front

1/8"

Back

1/8"

Mean pitch of stays

1 1/2" x 9 3/8"

Pitch across wide water spaces

14"

Working pressures by rules

242 lbs

Girders to Chamber tops: Material

Steel

Depth and

thickness of girder at centre

20" x 4 3/8" x 1"

Length as per rule

VERTICAL DONKEY BOILER— Manufacturers of Steel

No. _____ Description _____
 Made at _____ By whom made _____
 Working pressure tested by hydraulic pressure to _____ Date of test _____
 Values _____ No. of Safety Valves _____ Area of each _____ Pressure to which they are adjusted _____
 If fitted with casing gear _____ If steam from main boilers can enter the donkey boiler _____
 Material of shell plates _____ Thickness _____ Range of plate 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 _____
 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: — Two off bolts & nuts for top and bottom ends and main bearings one set of coupling bolts. Propeller. Propeller shaft. Propeller 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,
 J. D. & S. Co., 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.**

" " " donkey " " " **✓**

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	SB. f 3/8. a 15/32. CB. f 7/16. a 7/16. SB. f 12/32. a 13/32.								
Material of Crank shaft	S	Identification Mark on Do.	9406-N-W.C								
Material of Tunnel shafts	S	Identification Marks on Do.	266112 MB 456, 12+3 H.K. 76, 10, 28, 17								
Material of Steam Pipes	copper	5" bore, 5" w.t.	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. + LMC 8.13.

F.D.
 J. J. Gindlay
 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
 Assigned
 FRI. SER 5-1013
 LMC 8.13
 MACHINERY CERTIFICATE WRITTEN.

