

Rpt. 4.

REPORT ON MACHINERY.

No. 26266

Received at London Office

Date of writing Report

19

When handed in at Local Office

31 OCT 1914

Port of

Sunderland

MON. NOV. -2. 1914

No. in Survey held at
Reg. Book.

SUNDERLAND.

Date, First Survey

3 March

Last Survey

28 Octbr. 1914

on the

Steel S/S

"Exford"

(Number of Visits)

43

Gross

4503

Net

2839

When built 1914

Master

W. Hughes

Built at

Sunderland

By whom built

Bartram & Sons Ltd

Engines made at

S. land

By whom made

J. Dickinson & Sons Ltd

when made 1914

Boilers made at

By whom made

when made 1914

Registered Horse Power

Owners

Salem S. M. Ltd.

Port belonging to

Cardiff

Nom. Horse Power as per Section 28

453

Is Refrigerating Machinery fitted for cargo purposes

no

Is Electric Light fitted

yes

ENGINES, &c.—Description of Engines

Tri C.P.A.

No. of Cylinders

3

No. of Cranks

3

Dia. of Cylinders

27 1/2

Length of Stroke

48

Revs. per minute

70

Dia. of Screw shaft

as per rule 14.89

Material of

W. S.

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

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

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

Dia. of Tunnel shaft

as per rule 13.5

Dia. of Crank shaft journals

as per rule 14.8

Dia. of Crank pin

14 1/2

Size of Crank webs

9 1/2 x 26

Dia. of thrust shaft under

collars

14 1/2

Dia. of screw

17 1/2

Pitch of Screw

17 1/2

No. of Blades

4

State whether moveable

f

Total surface

99 1/2

No. of Feed pumps

2

Diameter of ditto

7

Stroke

24

Can one be overhauled while the other is at work

yes

No. of Bilge pumps

2

Diameter of ditto

5

Stroke

24

Can one be overhauled while the other is at work

yes

No. of Donkey Engines

3

Sizes of Pumps

B 11 x 10

two feed

5 x 6 1/2

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

In Engine Room

four 3 1/2

In Holds, &c. two 3 1/2 in each. tunnel 2 1/2

No. of Bilge Injections

1

sizes

7

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

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

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

Dates of examination of completion of fitting of Sea Connections

27.8.14 of Stern Tube

11.9.14

Screw shaft and Propeller

11.9.14

Is the Screw Shaft Tunnel watertight

yes

Is it fitted with a watertight door

yes

worked from top platform

BOILERS, &c.—(Letter for record S)

Manufacturers of Steel

J. Spencer & Sons Ltd

Total Heating Surface of Boilers

7379 1/2

Is Forced Draft fitted

no

No. and Description of Boilers

3 ordinary type

Working Pressure

180 lbs

Tested by hydraulic pressure to

360 lbs

Date of test

31.7.14

No. of Certificate

3236 1/2

Can each boiler be worked separately

yes

Area of fire grate in each boiler

65 1/2

No. and Description of Safety Valves to

each boiler

two Spring

Area of each valve

8.3

Pressure to which they are adjusted

185

Are they fitted with easing gear

yes

Smallest distance between boilers or uptakes and bunkers or woodwork

about 2 ft

Mean dia. of boilers

15 1/4

Length

11 1/2

Thickness

1 1/32

Range of tensile strength

28 1/2 - 32

Are the shell plates welded or flanged

no

Descrip. of riveting: cir. seams

A. 7. lat

long. seams

J. R. A. butt

Diameter of rivet holes in long. seams

1 3/8

Pitch of rivets

9 1/2

Gap of plates or width of butt straps

1 1/8

Per centages of strength of longitudinal joint

rivets 92.63

plate 85.23

Working pressure of shell by rules

189

Size of manhole in shell

16" x 12"

Size of compensating ring

8 3/4 x 19 1/2

No. and Description of Furnaces in each boiler

3 Corrugated

Material

S

Outside diameter

4' 2"

Length of plain part

top 9

Thickness of plates

crown 7 1/32

bottom 7 1/32

Description of longitudinal joint

weld

No. of strengthening rings

yes

Working pressure of furnace by the rules

189

Combustion chamber plates: Material

S

Thickness: Sides

7/8

Back

Crown 5/8

Top 7/8

Bottom 7/8

Pitch of stays to ditto: Sides

8 x 8

Back

8 x 8

Top

8 x 8

If stays are fitted with nuts or riveted heads

nuts

Working pressure by rules

211

Material of stays

S

Diameter at smallest part

1 3/5

Area supported by each stay

64

Working pressure by rules

182

End plates in steam space:

Material

S

Thickness

1 1/4

Pitch of stays

17 x 20

How are stays secured

A. nuts

Working pressure by rules

209

Material of stays

S

Diameter at smallest part

3 1/6

Area supported by each stay

348 1/2

Working pressure by rules

234

Material of Front plates at bottom

S

Thickness

7/8

Material of Lower back plate

S

Thickness

7/8

Greatest pitch of stays

14 3/4 x 8

Working pressure of plate by rules

187 1/2

Diameter of tubes

3 1/4

Pitch of tubes

4 1/2 x 4 1/2

Material of tube plates

S

Thickness: Front

7/8

Back

7/8

Mean pitch of stays

9"

Pitch across wide water spaces

1 1/4

Working pressures by rules

302

Girders to Chamber tops: Material

S

Depth and

thickness of girder at centre

7 3/4 x 1 x two

Length as per rule

2' 9 1/2

Distance apart

8"

Number and pitch of stays in each

3 @ 8"

Working pressure by rules

184

Superheater or Steam chest; how connected to boiler

yes

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

W905-0108

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:— Propeller & propeller shaft. Set Coupling bolts & nuts. Five main bearing bolts & nuts. 2 top end bolts & nuts. 2 bottom end bolts & nuts. 1 set bilge pump valves. 1 set valves for keels pump. 4 main & donkey check valves. 2 sets air pump valves. 3 sets Air pump valves feed & donkey valves 2 S.V. springs 2 escape valve springs assorted iron nuts & bolts.

The foregoing is a correct description,
 John D. Mackay & Sons, Limited.
 Manufacturer.

Dates of Survey
 During progress of work in shops -- 1914. Mar. 2. May 8. 12. 13. 18. 20. 22. 25. 27. 28. 29 June 4. 8. 15. 19. 25. 30. Jul 2. 7. 8. 13. 16. 20. 29.
 During erection on board vessel --- Aug 7. 14. 27. Sept. 2. 4. 5. 9. 11. 15. 17. 18. 23. 30. Oct. 1. 7. 9. 13. 20. 28.
 Total No. of visits (42)
 Is the approved plan of main boiler forwarded herewith Yes.

Dates of Examination of principal parts—Cylinders 15.6 Slides 8.6 Covers 15.6 Pistons 8.6 Rods 8.6
 Connecting rods 15.6 Crank shaft 2.9 Thrust shaft 2.9 Tunnel shafts 2.9 Screw shaft 9.9 Propeller 9.9
 Stern tube 9.9 Steam pipes tested 15.9 Engine and boiler seatings 11.9 Engines holding down bolts 30.9
 Completion of pumping arrangements 23.9 Boilers fixed 30.9 Engines tried under steam 23.9
 Main boiler safety valves adjusted 23.9 Thickness of adjusting washers PB f 7/32 CR MS 1/32 SB f 1/32 α 3/8
 Material of Crank shaft IS Identification Mark on Do. WS. 3.14 Material of Thrust shaft IS Identification Mark on Do. FR. 46.6
 Material of Tunnel shafts IS Identification Marks on Do. FR. 4.54.55 Material of Screw shafts W.I. Identification Marks on Do. MR. 626
 Material of Steam Pipes Copper Test pressure 370

General Remarks (State quality of workmanship, opinions as to class, &c. Machinery and boilers built under survey. materials and workmanship good. Engines and boilers examined under full steam & found satisfactory. It is submitted that this vessel is eligible for the record in the Register Book of L.M.C. 10/1914

It is submitted that
 this vessel is eligible for
 THE RECORD. + LMC 10.14.

The amount of Entry Fee .. £ 3: : When applied for, 31. OCT. 1914
 Special .. £ 42 .. 13: :
 Donkey Boiler Fee .. £ : : When received, 5/11/14
 Travelling Expenses (if any) £ : :
 Committee's Minute TUE NOV-3. 1914
 Assigned + Lmb 1014

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