

Rpt. 4.

REPORT ON MACHINERY.

No. 26320

Received at London Office

MON. JAN. 4-1915

Date of writing Report

19

When handed in at Local Office

2.1.14 Port of

SUNDERLAND.

No. in Survey held at
Reg. Book.

Date, First Survey

12 Aug.

Last Survey

Dec 22 1914.

(Number of Visits

28

Tons } Gross
Net

Supp 53 on the new steel 9/9 "ARKLESIDE".

Master J. G. Russell

Built at Middlesbrough

By whom built W. Harkness & Sons Ltd No. 208

When built 1914

Engines made at Sunderland

By whom made Maclellan & Pollock Ltd (No. 255)

when made 1914

Boilers made at Sunderland

By whom made Maclellan & Pollock Ltd (No. 255)

when made 1914

Registered Horse Power

Owners Rose Bros

Port belonging to Sunderland

Nom. Horse Power as per Section 28

115

Is Refrigerating Machinery fitted for cargo purposes

no

Is Electric Light fitted

no

ENGINES, &c.—Description of Engines

Triple expansion

No. of Cylinders 3

No. of Cranks 3

Dia. of Cylinders 15.25.41

Length of Stroke 30

Revs. per minute 84

Dia. of Screw shaft

as per rule 9.27

Material of screw shaft

as fitted 10"

Is the screw shaft fitted with a continuous liner the whole length of the stern tube

no liners

Is the after end of the liner made water tight

in the propeller boss

If the liner is in more than one length are the joints burned

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

Length of stern bush 3-1 3/4"

Dia. of Tunnel shaft

as per rule 7.853

Dia. of Crank shaft journals

as per rule 8.24"

Dia. of Crank pin 8 1/2"

Size of Crank webs 12 1/2"

Dia. of thrust shaft under

collars 8 1/2"

Dia. of screw 10-6"

Pitch of Screw 13-9"

No. of Blades 4

State whether moveable

no

Total surface

44 sq ft

No. of Feed pumps 2

Diameter of ditto 2 1/4"

Stroke 15"

Can one be overhauled while the other is at work

yes

No. of Bilge pumps 2

Diameter of ditto 2 1/4"

Stroke 15"

Can one be overhauled while the other is at work

yes

No. of Donkey Engines 2

Sizes of Pumps

5 1/4 & 4 x 10.

6 & 7 x 7

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

In Engine Room 4. of 2"

In Holds, &c. two of 2"

No. of Bilge Injections 1

sizes 3 1/2"

Connected to condenser, or to circulating pump

C.D.

Is a separate Donkey Suction fitted in Engine room & size

3 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

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

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

15/12/1914

Stern Tube

5-12-1914

Screw shaft and Propeller

16.12.1914

Is the Screw Shaft Tunnel watertight

none

Is it fitted with a watertight door

machinery worked from

BOILERS, &c.—(Letter for record

S)

Manufacturers of Steel

Johns & Sons Ltd

Total Heating Surface of Boilers

1975 sq ft

Is Forced Draft fitted

no

No. and Description of Boilers

one single ended marine

Working Pressure

180

Tested by hydraulic pressure to

360

Date of test

16.11.14

No. of Certificate

3259

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 direct spring

Area of each valve

5.94 sq in

Pressure to which they are adjusted

185

Are they fitted with easing gear

yes

Smallest distance between boilers or uptakes and bunkers or woodwork

15"

Mean dia. of boilers

14-9"

Length

10-9"

Material of shell plates

steel

Thickness

1 1/2"

Range of tensile strength

29-33

Are the shell plates welded or flanged

no

Descrip. of riveting: cir. seams

W.B.T.R.

long. seams

W.B.T.R.

Diameter of rivet holes in long. seams

1 1/4"

Pitch of rivets

8 9/16"

Lap of plates or width of butt straps

18 5/16"

Per centages of strength of longitudinal joint

rivets

92

Working pressure of shell by rules

181

Size of manhole in shell

16 x 12"

Size of compensating ring

27 x 29 x 1 1/2"

No. and Description of Furnaces in each boiler

3 plain

Material

steel

Outside diameter

3-9 3/4"

Length of plain part

top

7 1/4"

Thickness of plates

crown

1 1/2"

Description of longitudinal joint

welded

No. of strengthening rings

none

Working pressure of furnace by the rules

185

Combustion chamber plates: Material

steel

Thickness: Sides

7/8"

Back

7/8"

Top

7/8"

Bottom

1 1/2"

Pitch of stays to ditto: Sides

9 1/2 x 9"

Back

9 x 9"

Top

9 x 9"

If stays are fitted with nuts or riveted heads

nuts

Working pressure by rules

185

Material of stays

steel

Diameter at smallest part

2-05 1/2"

Area supported by each stay

99.5 sq in

Working pressure by rules

183

End plates in steam space

Material

steel

Thickness

1 1/2"

Pitch of stays

17 1/4 x 14 1/2"

How are stays secured

D.N.

Working pressure by rules

181

Material of stays

steel

Diameter at smallest part

4-57"

Area supported by each stay

257.6 sq in

Working pressure by rules

184

Material of Front plates at bottom

steel

Thickness

1 1/2"

Material of Lower back plate

steel

Thickness

1 1/2"

Greatest pitch of stays

12 5/8 x 9"

Working pressure of plate by rules

190

Diameter of tubes

3 1/4"

Pitch of tubes

4 1/2 x 4 1/2"

Material of tube plates

steel

Thickness: Front

1 1/2"

Back

1 1/2"

Mean pitch of stays

11 1/4"

Pitch across wide water spaces

14 x 9"

Working pressures by rules

218

Girders to Chamber tops: Material

steel

Depth and

thickness of girder at centre

20 1/2 x 13"

Length as per rule

30 5/8"

Distance apart

9"

Working pressure by rules

193

Superheater or Steam chest; how connected to boiler

none

Can the superheater be shut off and the boiler worked

separately

yes

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

002289-002291-0070

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 _____ Plates _____

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:— *Spares, propellers, two top and bottom end bolts & nuts, set of main bearing bolts; set of coupling bolts, set of feed & bilge pump valves, assorted nuts & bolts & iron of various sizes*

The foregoing is a correct description,

MAO COLL & POLLJOK LTD.

Manufacturer.

Shy Mac Coy
Managing Director

Dates of Survey while building { During progress of work in shops -- 1914 Aug 12, 14, 19, 21, 27, Sep 8, 11, 17, 18, 22, 28 Oct 1, 6, 9, 12, 19, 22, 23, 29, Nov 2, 9, 11, 16
During erection on board vessel -- Dec 14, 15, 16, 17, 22
Total No. of visits (22)

Is the approved plan of main boiler forwarded herewith *yes*
" " " donkey " " " *yes*

Dates of Examination of principal parts—Cylinders 14-10-14 Slides 29-10-14 Covers 6-10-14 Pistons 8-9-14 Rods 8-9-14
Connecting rods 11-9-14 Crank shaft 21-8-14 Thrust shaft 19-8-14 Tunnel shafts none Screw shaft 19-10-14 Propeller 1-10-14
Stern tube 9-11-14 Steam pipes tested 16-12-1914 Engine and boiler seatings 14-12-14 Engines holding down bolts 14-12-1914
Completion of pumping arrangements 17-12-1914 Boilers fixed 14-12-1914 Engines tried under steam 17-12-1914
Main boiler safety valves adjusted 17-12-1914 Thickness of adjusting washers 5/16"
Material of Crank shaft *Steel* Identification Mark on Do 38601NDH Material of Thrust shaft *Steel* Identification Mark on Do 3853AF0
Material of Tunnel shafts *None* Identification Marks on Do. ✓ Material of Screw shafts *Steel* Identification Marks on Do. 3863AF0
Material of Steam Pipes *Copper* ✓ Test pressure 400 lbs

General Remarks (State quality of workmanship, opinions as to class, &c.)

*The materials and workmanship are good
The machinery has been constructed under special survey*

Engines and boilers examined under full working conditions & found satisfactory

The machinery and boilers of this vessel have been built under special survey. Examined after steam trial. It is submitted that this vessel is eligible for the record of L.M.C. 12. 1914.

It is submitted that this vessel is eligible for THE RECORD. + L M C 12. 14.

The amount of Entry Fee .. £ 2 : - :
Special .. £ 17 : 5 :
Donkey Boiler Fee .. £ : :
Travelling Expenses (if any) £ : :
When applied for, 1914
When received, 5/11/15

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

Committee's Minute FRI. JAN. 8 - 1915

Assigned

L.M.C. 12. 14

MACHINERY CERTIFICATE
WRITTEN.



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Foundation