

Rpt. 4.

REPORT ON MACHINERY.

NEWCASTLE-ON-TYNE

No. 69608

No. 26854

Received at London Office 25 NOV. 1916

Date of writing Report

19

When handed in at Local Office

24 NOV 1916

Port of

SUNDERLAND.

No. in Survey held at

Sunderland

Date, First Survey

21st May '15 Last Survey 9th July 1917

Reg. Book.

Supp 25 on the new hull 9/5 "LUMINA".

Number of Visits (46+7)

Gross 5856

Net 3732

Master

Built at Newcastle.

By whom built

Palmer SS&C Co Ltd 853

When built 1916

Engines made at

Sunderland

By whom made

G. Blair & Co (No 1035)

when made 1916

Boilers made at

Sunderland

By whom made

G. Blair & Co (No 1035)

when made 1916

Registered Horse Power

Owners H.E. Moss & Co

Port belonging to Liverpool.

Nom. Horse Power as per Section 28

498

Is Refrigerating Machinery fitted for cargo purposes

No

Is Electric Light fitted

yes

ENGINES, &c.—Description of Engines

Triple expansion

No. of Cylinders

3

No. of Cranks

3

Dia. of Cylinders

26 1/2, 44, 73

Length of Stroke

48

Revs. per minute

65

Dia. of Screw shaft

as per rule 14 7/8

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

no

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

no

If two

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

yes

Length of stern bush

5'-0"

Dia. of Tunnel shaft

as per rule 13.217

Dia. of Crank shaft journals

as per rule 13.878

Dia. of Crank pin

14

Size of Crank webs

21 1/4 x 8 1/8

Dia. of thrust shaft under

collars

14 7/8

Dia. of screw

M. 10 1/2

Pitch of Screw

16'-4"

No. of Blades

4

State whether moveable

no

Total surface

97 1/2

No. of Feed pumps

2

Diameter of ditto

9 1/2

Stroke

21

Can one be overhauled while the other is at work

yes

No. of Bilge pumps

2

Diameter of ditto

4 1/2

Stroke

26

Can one be overhauled while the other is at work

yes

No. of Donkey Engines

2

SIZES OF PUMPS

9 1/2 x 10 x 10

1 1/2 x 5 x 6

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

In Engine Room three @ 3 1/2"

In Holds, &c.

X

No. of Bilge Injections

1

size 6"

Connected to condenser, or to circulating pump

yes

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

none

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

X

Are they Valves or Cocks

X

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

X

What pipes are carried through the bunkers

none

How are they protected

yes

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

of Stern Tube 13-10-16

Screw shaft and Propeller

17-10-16

Is the Screw Shaft Tunnel watertight

none

Is it fitted with a watertight door

yes

worked from

mainly aft

BOILERS, &c.—(Letter for record 3)

Manufacturers of Steel

John Spencer & Sons Ltd

Total Heating Surface of Boilers

7512 1/2

Is Forced Draft fitted

yes

No. and Description of Boilers

three single ended marine

Working Pressure

180 lbs

Tested by hydraulic pressure to

360

Date of test

21-3-16

No. of Certificate

3330

Can each boiler be worked separately

yes

Area of fire grate in each boiler

58 1/2

No. and Description of Safety Valves to

each boiler

two direct spring

Area of each valve

9.625

Pressure to which they are adjusted

185

Are they fitted with easing gear

yes

Smallest distance between boilers or uptakes and bunkers or woodwork

2'-0"

Mean dia. of boilers

15'-0"

Length

11'-7 3/8"

Material of shell plates

steel

Thickness

1 3/8"

Range of tensile strength

29 1/2-33

Are the shell plates welded or flanged

no

Descrip. of riveting: cir. seams

DR

long. seams

DB STR

Diameter of rivet holes in long. seams

1 5/16"

Pitch of rivets

9 7/8"

Lap of plates or width of butt straps

20"

Size of manhole in shell

16 x 12 (Forward boiler)

Per centages of strength of longitudinal joint

rivets 92.7

plate 86

Working pressure of shell by rules

182

Material of shell

steel

Size of compensating ring

8 1/4 x 1 1/4"

No. and Description of Furnaces in each boiler

3 Morrison

Material

steel

Outside diameter

4'-1"

Length of plain part

top 31"

Thickness of plates

bottom 64"

Description of longitudinal joint

welded

No. of strengthening rings

yes

Working pressure of furnace by the rules

186

Combustion chamber plates: Material

steel

Thickness: Sides

13/16"

Back

23/32"

Top

7/4"

Bottom

13/16"

Pitch of stays to ditto: Sides

9 3/4" x 10 3/4"

Back

10 x 9 1/2"

Top

10 1/4 x 9 1/8"

If stays are fitted with nuts or riveted heads

nuts

Working pressure by rules

192

End plates in steam space:

Material of stays

steel

Diameter at smallest part

2.030"

Area supported by each stay

950"

Working pressure by rules

182

Material of stays

steel

Material

steel

Thickness

1 1/2"

Pitch of stays

23 x 21"

How are stays secured

D.N.

Working pressure by rules

194 1/2

Material of Front plates at bottom

steel

Diameter at smallest part

8.29

Area supported by each stay

4820"

Working pressure by rules

190

Material of Lower back plate

steel

Thickness

1"

Greatest pitch of stays

17 3/8 x 9 3/8"

Working pressure of plate by rules

182

Thickness

15/16"

Material of tube plates

steel

Thickness: Front

15/16"

Back

3/4"

Mean pitch of stays

9 1/4"

Diameter of tubes

3 1/2"

Pitch of tubes

3 3/4" x 3 7/8"

Material of tube plates

steel

Thickness: Front

15/16"

Back

3/4"

Mean pitch of stays

9 1/4"

Pitch across wide water spaces

13 1/2"

Working pressures by rules

185

Girders to Chamber tops: Material

steel

Depth and

thickness of girder at centre

20 9/16" x 7/8"

Length as per rule

36"

Working pressure by rules

183

Superheater or Steam chest; how connected to boiler

none

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

How stayed

If stiffened with rings

Distance between rings

Working pressure by rules

End plates: Thickness

Working pressure of end plates

Area of safety valves to superheater

Are they fitted with easing gear

yes

Lloyd's Register

FOUNDED 1

IS A DONKEY BOILER FITTED?

If so, is a report now forwarded?

SPARE GEAR. State the articles supplied:—

not fitted on board at Sunderland

The foregoing is a correct description,
FOR GEORGE CLARK, LIMITED

W.S. Opium

Manufacturer.

of Main Engine Station.

Dates of Survey while building { During progress of work in shops - - 1915 May 21, 26, 30, Dec 10, 17, Jan 18, 24, Feb 18, 24, Mar 1, 14, 19, 21, May 2, 11, June 2, Jul 3, 16, 31, Aug 14, Sep 8
During erection on board vessel - - - 11, 14, 15, 19, 21, 23, 26, Oct 2, 5, 9, 11, 13, 16, 17, 19, 23, Nov 2, 5, 27, 31, Dec 3, 6, 16.
Total No. of visits {

Is the approved plan of main boiler forwarded herewith

yes

" " " donkey " " "

Dates of Examination of principal parts—Cylinders 14-9-16 Slides 31-7-16 Covers 5-10-16 Pistons 31-7-16 Rods 3-10-16

Connecting rods 14-8-16 Crank shaft 26-7-16 Thrust shaft 21-9-16 Tunnel shafts none Screw shaft 21-9-16 Propeller 8-9-16

Stern tube 25-9-16 Steam pipes tested 25-8-16 27-10-16 Engine and boiler seatings Engines holding down bolts 6-11-16

Completion of pumping arrangements Boilers fixed 31-10-16 Engines tried under steam 16-11-16

Main boiler safety valves adjusted 16-11-16 Thickness of adjusting washers 15" 5 1/16. 5 1/16. 5 1/16. 5 1/16. 5 1/16. 5 1/16.

Material of Crank shaft SM 1 steel Identification Mark on Do. 1164 N W C. Material of Thrust shaft SM 1 steel Identification Mark on Do. 701 J C.

Material of Tunnel shafts none Identification Marks on Do. ✓ Material of Screw shafts SM 1 steel Identification Marks on Do. 728 J C.

Material of Steam Pipes lap welded with iron 4 @ 5" x 5/16. 1 @ 9 1/4" x 7/8" Test pressure 540 lbs per sq in

Is an installation fitted for burning oil fuel yes

Is the flash point of the oil to be used over 150°F. yes

Have the requirements of Section 49 of the Rules been complied with yes

Is this machinery duplicate of a previous case no

If so, state name of vessel ✓

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

To complete the survey the following

ballast and oil fuel pumping arrangement requires to be completed and the oil gutters in the stokehold require to be connected to the oil wells by piercing the bottom of the coal bunker casings.

The vessel has returned to the builder's yard for completion. Newcastle Surveyors advised.

The materials and workmanship are good.

The machinery has been constructed under special survey and is eligible in our opinion for classification and the record + LMC when the survey is complete

SUNDERLAND.

Certificate (if required) to be sent to

The amount of Entry Fee ... £ 3 : :
Special ... £ 44 : 18 :
Donkey Boiler Fee ... £ : :
Travelling Expenses (if any) £ : :
When applied for, 24 NOV 1916
When received, 19 DEC 1916

Levin Davis

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

Committee's Minute TUE 20 FEB. 1917

Assigned



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Foundation