

REPORT ON MACHINERY.

No. 25996

Received at London Office

WED. FEB. 4 - 1914

Date of writing Report 2nd Feb 1914 When handed in at Local Office 2nd Feb 1914 Port of

SUNDERLAND

No. in Survey held at

SUNDERLAND

Date, First Survey 1912 Dec. 16th Last Survey Feb 3rd 1914

Reg. Book.

Held on the New Steel S. S. Euphion

Master J. J. Douglas Built at

Alloa

By whom built

MacKay Bros Ltd.

Tons

When built 1911

Engines made at

Sunderland

By whom made

North Eastern Marine Eng Co Ltd.

when made

1911

Boilers made at

Sunderland

By whom made

North Eastern Marine Eng Co Ltd.

when made

1911

Registered Horse Power

Owners

Euphion Ltd. Ltd.

Port belonging to

London

Nom. Horse Power as per Section 28

401

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 23 $\frac{1}{2}$ " x 39" x 66"

Length of Stroke 145"

Revs. per minute 82

Dia. of Screw shaft

as per rule 12.26

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

If two

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

Length of stern bush

14'-4"

Dia. of Tunnel shaft

as per rule 12.04

Dia. of Crank shaft journals

as per rule 12.64

Dia. of Crank pin 13"

Size of Crank webs 8x10"

Dia. of thrust shaft under

collars 12 $\frac{3}{4}$ "

Dia. of screw 16'0"

Pitch of Screw 15'-3"

No. of Blades 14

State whether moveable

Yes

Total surface

822 sq ft

No. of Feed pumps

Diameter of ditto

Stroke

Can one be overhauled while the other is at work

Yes

No. of Bilge pumps

Diameter of ditto

Stroke

Can one be overhauled while the other is at work

Yes

No. of Donkey Engines

Sizes of Pumps

Ballast 12x12x12

Suction 5x5x5

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

In Engine Room

In Engine Room

Three @ 3 $\frac{1}{2}$ " dia

Suctions in Holds, &c.

as per approved plan

No. of Bilge Injections

Connected to condenser, or to circulating pump

Is a separate Donkey Suction fitted in Engine room

Yes

3 $\frac{1}{2}$ "

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

Yes

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

1-11-13

of Stern Tube

1-11-13

Screw shaft and Propeller

1-12-13

1-11-13

Is the Screw Shaft Tunnel watertight

None

Is it fitted with a watertight door

Yes

worked from

BOILERS, &c.—(Letter for record)

R

Manufacturers of Steel

J. Spencer & Sons Ltd.

Newburn

Total Heating Surface of Boilers

5800 sq ft

Is Forced Draft fitted

Yes

No. and Description of Boilers

Two single ended

Working Pressure

185 lbs

Tested by hydraulic pressure to

340

Date of test

16-5-13

No. of Certificate

3111

Can each boiler be worked separately

Yes

Area of fire grate in each boiler

64 $\frac{1}{2}$ sq ft

No. and Description of Safety Valves to

each boiler

Two spring loaded

Area of each valve

9.6 sq in

Pressure to which they are adjusted

190 lbs

Are they fitted with easing gear

Yes

Smallest distance between boilers or uptakes and bunkers or woodwork

3'-0"

Mean dia. of boilers

15'-11 $\frac{1}{2}$ "

Length

11'-6"

Material of shell plates

Steel

Thickness

1 $\frac{1}{4}$ "

Range of tensile strength

28 $\frac{1}{2}$ to 32 $\frac{1}{2}$ tons

Are the shell plates welded or flanged

No

Descrip. of riveting: cir. seams

D.R.

long. seams

J.R.D.B.S.

Diameter of rivet holes in long. seams

1 $\frac{1}{2}$ "

Pitch of rivets

9 $\frac{1}{16}$ "

Lap of plates or width of butt straps

20"

Per centages of strength of longitudinal joint

rivets

Working pressure of shell by rules

185.1 lbs

Size of manhole in shell

end

16' x 12'

Size of compensating ring

dished

No. and Description of Furnaces in each boiler

Two Daightons

Material

Steel

Outside diameter

34 $\frac{1}{4}$ "

Length of plain part

top

Thickness of plates

crown

Description of longitudinal joint

weld

No. of strengthening rings

25

15"

Working pressure of furnace by the rules

184 lbs

Combustion chamber plates: Material

Steel

Thickness: Sides

25"

Back

32"

Top

32"

Bottom

16"

Pitch of stays to ditto: Sides

10 $\frac{1}{4}$ " x 10 $\frac{1}{4}$ "

Back

11-0 $\frac{1}{2}$ " x 10 $\frac{1}{4}$ "

Top

10 $\frac{1}{4}$ " x 9 $\frac{1}{4}$ "

If stays are fitted with nuts or riveted heads

Nuts

Working pressure by rules

186 lbs

Material of stays

Iron

Diameter at smallest part

2 $\frac{1}{4}$ " x 2 $\frac{1}{4}$ "

Area supported by each stay

112 $\frac{1}{4}$ sq in

Working pressure by rules

185 lbs

Material of stays

Steel

Material

Steel

Thickness

1 $\frac{3}{8}$ "

Pitch of stays

22 $\frac{1}{2}$ " x 20 $\frac{1}{2}$ "

How are stays secured

D. Wash

Working pressure by rules

185 lbs

Diameter at smallest part

8.29"

Area supported by each stay

22 $\frac{1}{2}$ " x 20 $\frac{1}{2}$ "

Working pressure by rules

184 lbs

Material of Front plates at bottom

Steel

Thickness

3 $\frac{1}{4}$ "

Material of Lower back plate

Steel

Thickness

29"

Greatest pitch of stays

14 $\frac{1}{4}$ " x 10 $\frac{1}{4}$ "

Working pressure of plate by rules

184 lbs

Diameter of tubes

2 $\frac{1}{2}$ "

Pitch of tubes

3 $\frac{1}{4}$ " x 3 $\frac{1}{4}$ "

Material of tube plates

Steel

Thickness: Front

3 $\frac{1}{4}$ "

Back

3 $\frac{1}{4}$ "

Mean pitch of stays

9 $\frac{5}{16}$ "

Pitch across wide water spaces

13 $\frac{1}{4}$ "

Working pressures by rules

230 lbs

Girders to Chamber tops: Material

Steel

Depth and

thickness of girder at centre

20 $\frac{1}{4}$ " x 8"

Length as per rule

35"

Distance apart

9.5"

Number and pitch of stays in each

2 @ 10"

Working pressure by rules

185 lbs

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

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

Diameter

Length

Thickness of shell plates

Material

Description of longitudinal joint

Diam. of rivet

holes

Pitch of rivets

WEB-FRAME
" " No
WEB-FRAME
" " No
WEB-FRAME
" " No
BRACKET I
Web Frame
BULKHEAD
W.T.BULKHEAD
COLLISION
FL
GAL
Sta
thi
way
THKNE
CLEAR O
Do. o
DBLG. of
" Length
POOP SII
SHORT B
FORECAST
Upper
Stringer
Second
Stringer
FRAMES
REVERSE
LOWER MASTS
Bowsprit
Topmasts, Yards
Rigging, Masts
Sails.

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:— Two off bolts & nuts for top and bottom ends and main bearings. One set coupling bolts. One cast iron propeller. One third crank shaft. One propeller shaft. One air pump rod. Safety valve springs. One eccentric strap. Assorted bolts nuts and iron.

The foregoing is a correct description,

Manufacturer.

S.T. Harrison Leys

Dates of Survey while building
During progress of work in shops - - - 1912. Dec. 16-17-24 Jan. 22-30 Feb. 11-16-27-28 Mar. 4-14-18-31 Apr. 9-16-24 May 1-11-18
During erection on board vessel - - - 15-16-27 Jun. 2-27 Jul. 4-10-22-31 Aug. 8-12-21-26-29 Sep. 3-9-19-24-26-30 Oct. 3-9-13-14
Total No. of visits 65
Is the approved plan of main boiler forwarded herewith yes

Dates of Examination of principal parts—Cylinders 31-1-13 Slides 29-8-13 Covers 12-8-13 Pistons 29-8-13 Rods 21-8-13
Connecting rods 31-1-13 Crank shaft 27-6-13 Thrust shaft 26-9-13 Tunnel shafts None Screw shaft 13-10-13 Propeller 3-10-13
Stern tube 13-10-13 Steam pipes tested 17-12-13, 9-10-13 Engine and boiler seatings 4-11-13 Engines holding down bolts 19-12-13
Completion of pumping arrangements 29-1-14 Boilers fixed 11-12-13 Engines tried under steam 29-1-14
Main boiler safety valves adjusted 15-1-14 Thickness of adjusting washers 29-8-13 F₁ A₁ 29-8-13 F₂ A₂
Material of Crank shaft Steel Identification Mark on Do. 393-4 H.K. Material of Thrust shaft Steel Identification Mark on Do. 440 J.M.
Material of Tunnel shafts None Identification Marks on Do. Material of Screw shafts Steel Identification Marks on Do. 24-10-13
Material of Steam Pipes Lap welded not view 5 1/2" bore x 5/16" thick Test pressure 555 lbs.

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

The Machinery of this vessel has been built under special survey, the materials and workmanship are of good quality and the hydraulic tests of the boilers proved satisfactory. The whole of the machinery has been securely fitted on board, and tried under steam and is in good safe working condition and eligible in my opinion to be classed and have record **L.M.C. 2-14**. "Fitted for oil fuel" F.P. above 150°F. all the requirements of section 149 of the Rules have been complied with.

This ship is fitted for Wireless Telegraphy

It is submitted that this vessel is eligible for

THE RECORD. + L.M.C. 2.14.

F.D.

Fitted for oil fuel 2.14. F.P. above 150°F.

The amount of Entry Fee .. £ 3 : 0 : 0
Special £ 40 : 1 : 0
Donkey Boiler Fee £ : :
Travelling Expenses (if any) £ : :
When applied for, 3-2-14
When received, 3-2-14

Committee's Minute

Assigned

FRI. FEB. 6-1914

+ L.M.C. 2.14

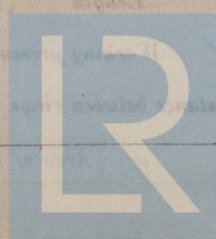
Ltd. for oil fuel 2.14

MACHINERY CERTIFICATE

WRITTEN 4-2-14

William Butler

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



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