

REPORT ON MACHINERY.

Port of **Sunderland**

MON. 29 JUN 1903

Survey held at

Sunderland

Date, first Survey **Nov. 27 '02** Last Survey **19th May 1903**

Book, Sup:

on the

S.S. ZEELEEUW

(Number of Visits **15**)

Gross **162.42**

Net **38.32**

When built **1903**

ter

Built at **North Shields**

By whom built **Messrs Smiths Dock L^d**

when made **1903**

ines made at

Sunderland

By whom made

Messrs MacColl & Pollock

when made **1903**

ers made at

do

By whom made

do

when made **1903**

istered Horse Power

Owners **De Heer v. Scherger - Mantschippig**

Port belonging to **Amsterdam**

Horse Power as per Section 28 **51**

Is Refrigerating Machinery fitted **No**

Is Electric Light fitted **No**

INES, &c.—Description of Engines

Triple Expansion Surface Indirect

No. of Cylinders **3**

No. of Cranks **3**

of Cylinders

11-18-30

Length of Stroke **21**

Revs. per minute **115**

Dia. of Screw shaft

as per rule **6.72**

Lgth. of stern bush **28"**

of Tunnel shaft

as per rule **5.55**

Dia. of Crank shaft journals

as per rule **5.87**

Dia. of Crank pin

as fitted **6"**

Size of Crank webs **8 1/4 x 4 1/2**

Dia. of thrust shaft under

ars **6"**

Dia. of screw

8'-0"

Pitch of screw

10'-9"

No. of blades **4**

State whether moveable **No**

Total surface **24.5 sq ft**

of Feed pumps

1

Diameter of ditto **2 1/4**

Stroke **11 1/2**

Can one be overhauled while the other is at work

of Bilge pumps

1

Diameter of ditto **2 1/4**

Stroke **11 1/2**

Can one be overhauled while the other is at work

of Donkey Engines

One

Sizes of Pumps

Duplex 5 1/4 x 3 1/4 x 5"

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

Engine Room

2 - 2" diam.

In Holds, &c.

2 - 2" diam

of bilge injections

1 sizes 2 1/2

Connected to condenser, to circulating pump

Pump Is a separate donkey suction fitted in Engine room & size **2"**

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

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

Yes

Are they Valves or Cocks

Both

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

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

hat pipes are carried through the bunkers

How are they protected

Yes

all pipes, cocks, valves, and pumps in connection with the machinery and all boiler mountings accessible at all times

Yes

the bilge suction pipes, cocks, and valves arranged so as to prevent any communication between the sea and the bilges

Yes

Is the screw shaft tunnel watertight

it fitted with a watertight door

worked from

ILERS, &c.—

(Letter for record **S**)

Total Heating Surface of Boilers

879 sq ft

Is forced draft fitted **No**

and Description of Boilers

One Multitubular Cylindrical

Working Pressure

180

Tested by hydraulic pressure to **360 lbs**

ate of test

6.4.03

Can each boiler be worked separately

Yes

Area of fire grate in each boiler

31.5 sq ft

No. and Description of safety valves to

ch boiler

2 Spring loaded

Area of each valve

3.1416

Pressure to which they are adjusted

183 lbs

Are they fitted with easing gear **Yes**

allest distance between boilers or uptakes and bunkers or woodwork

12"

Mean dia. of boilers

10.6

Length

9.6

Material of shell plates **Steel**

ickness

29/32

Range of tensile strength

29-32

Are they welded or flanged

No

Descrip. of riveting: cir. seams

Lap J. R.

long. seams

D.B.S.

diameter of rivet holes in long. seams

1 3/32

Pitch of rivets

5 5/8"

Lap of plates

width of butt straps

11"

er centages of strength of longitudinal joint

82.19

Working pressure of shell by rules

180 lbs

Size of manhole in shell

16 x 12"

Material

Steel

Outside diameter

3-1 1/2"

ze of compensating ring

26" x 28"

No. and Description of Furnaces in each boiler

2 Plain

Material

Steel

No. of strengthening rings

1/4 hoop 5 x 3 x 3/4

length of plain part

6.3"

Thickness of plates

45/64

Description of longitudinal joint

Welded

Working pressure of furnace by the rules

181

Combustion chamber plates: Material

S

itch of stays to ditto: Sides

10 x 7

Back

7 1/4 x 8 1/4

Top

10 x 1 1/2

If stays are fitted with nuts or riveted heads

both

Working pressure by rules

183

aterial of stays

Steel

Diameter at smallest part

1.5"

Area supported by each stay

64.25

Working pressure by rules

180

Material of stays

S

aterial

Steel

Thickness

1"

Pitch of stays

16 1/4 x 15 1/4

How are stays secured

Nuts & Washers

Working pressure by rules

180

diameter at smallest part

5.05"

Area supported by each stay

248"

Working pressure by rules

180

Material of Front plates at bottom

S

ickness

13/16

Material of Lower back plate

S

Thickness

3/4

Greatest pitch of stays

12"

Working pressure of plate by rules

187

diameter of tubes

3 1/4

Pitch of tubes

4 1/2 x 4 1/2

Material of tube plates

S

Thickness: Front

13/16

Back

1 1/16

itch across wide water spaces

14"

Working pressures by rules

J.R. 243 lbs

Girders to Chamber tops: Material

S

Depth and

One

ickness of girder at centre

7 x 24 3/4

Length as per rule

1.9"

Distance apart

10"

Number and pitch of Stays in each

One

Working pressure by rules

2.06"

Superheater or Steam chest: how connected to boiler

Can the superheater be shut off and the boiler worked

separately

Diameter

Length

Thickness of shell plates

Material

Description of longitudinal joint

Pitch of rivets

Working pressure of shell by rules

Diameter of flue

Material of flue plates

Thickness

End plates: Thickness

How stayed

DONKEY BOILER— No. Description

Made at By whom made When made Where fixed

Working pressure tested by hydraulic pressure to No. of Certificate Fire grate area Description of safety valves

No. of safety valves Area of each Pressure to which they are adjusted 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 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

Thickness of furnace crown plates Stayed by Working pressure of shell by rules

Working pressure of furnace by rules Diameter of uptake Thickness of uptake plates Thickness of water tubes

SPARE GEAR. State the articles supplied:— 2 Connecting Rod top end, 2 bottom end, 2 main bearing bolts & nuts, 1 set coupling bolts & nuts, 1 set H.P. Boston rings, 1 set Fed. & Bilge pump valves, 1 spare propeller

The foregoing is a correct description,

MacCall & Pollock Manufacturer.

Dates During progress of work in shops— 1902 Nov. 27 Dec. 15 29 1903 Feb. 23 Mar. 25 Apr. 16 29 May 11 13 15 19
of Survey During erection on board vessel— Nov. 4 Dec. 21 22 23 May 13
while building Total No. of visits 15 Nov 4

Copy of Is the approved plan of main boiler forwarded herewith Yes
" " " donkey " " " "

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

Material of screw shaft *Steel* Is the screw shaft fitted with a continuous liner the whole length of the stern tube *No*
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
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 *Painted*

This vessel's machinery has been built under special survey & in my opinion is eligible for record of **L.M.C. 5.03.**

It is submitted that this vessel is eligible for **THE RECORD. + L.M.C. 5.03**

Bab
29.6.03
Ed.
29.6.03

The amount of Entry Fee... £ 1 : : : When applied for, 25 May 1903
Special £ 8 : : :
Donkey Boiler Fee £ : : : When received, 12 June 1903
Travelling Expenses (if any) £ : : :
FRI. 3 JUL 1903

Committee's Minute

Assigned

+ L.M.C. 5.03

MACHINERY CERTIFICATE
WRITTEN

G. A. Dryden Joyce
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.



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Lloyd's Register
Foundation

Certificate (if registered) to be sent to Sunderland

(The Surveyors are requested not to write on or below the space for Committee's Minute.)