

REPORT ON BOILERS.

No. 10,179

Received at London Office

31 MAY 1929

Date of writing Report

192

When handed in at Local Office

30 - 5 - 1929

Port of

Belfast

No. in Survey held at

Belfast

Date, First Survey

1st January

Last Survey

27th May

1929

g. Book.

(Number of Visits

13.

Gross

on the

Steel twin Sc.

SURINAM.

Tons

Net

Master

Built at

Belfast

By whom built

Harland & Wolff Ltd.

Yard No.

863

When built

1929.

Engines made at

Belfast

By whom made

Harland & Wolff Ltd.

Engine No.

863

When made

1929.

Boilers made at

Belfast

By whom made

Harland & Wolff Ltd.

Boiler No.

863

When made

1929.

Nominal Horse Power

228

Owners

Rago Shipping Co. Ltd. (A. Weir & Co. Incos) Port belonging to London

MULTITUBULAR BOILERS - MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel

David Colville & Sons Ltd.

(Letter for Record 5.)

Total Heating Surface of Boilers

4360 square feet

Is forced draught fitted

No.

Coal or Oil fired

Oil.

No. and Description of Boilers

Two single-ended cylindrical multitubular.

Working Pressure

180 lbs.

Tested by hydraulic pressure to

320 lbs.

Date of test

30.4.29

No. of Certificate

934

Can each boiler be worked separately

Yes

Area of Firegrate in each Boiler

✓

No. and Description of safety valves to each boiler

Two spring loaded high-lift

Area of each set of valves per boiler

(per Rule

$\frac{2}{3}$ of 13.77 = 9.18

Pressure to which they are adjusted

180 lbs

Are they fitted with easing gear

Yes

In case of donkey boilers, state whether steam from main boilers can enter the donkey boiler

✓

Smallest distance between boilers or uptakes and bunkers or woodwork

Is oil fuel carried in the double bottom under boilers

No

Smallest distance between shell of boiler and tank top plating

open hinge

Is the bottom of the boiler insulated

Yes

Largest internal dia. of boilers

14'-6"

mean Length

11'-0"

Shell plates: Material

Steel

Tensile strength

28-32 tons

Thickness

1 1/4"

Are the shell plates welded or flanged

No.

Description of riveting: circ. seams

end

double

long. seams

little d.b.s.

Diameter of rivet holes in

(circ. seams

1 5/16"

(long. seams

1 5/16"

Pitch of rivets

3.63"

9"

Percentage of strength of circ. end seams

(plate

63.8

(rivets

48.9

Percentage of strength of circ. intermediate seam

(plate

✓

Percentage of strength of longitudinal joint

(plate

85.4

(rivets

90.8

Working pressure of shell by Rules

189.5 lbs. sq"

Thickness of butt straps

(outer

1 5/16"

(inner

1 1/8"

No. and Description of Furnaces in each Boiler

Three Morrison

30"

Material

Steel

Tensile strength

26-30 tons

Smallest outside diameter

41 5/8"

Length of plain part

(top

✓

(bottom

✓

Thickness of plates

(crown

9/16"

(bottom

9/16"

Description of longitudinal joint

weld

Dimensions of stiffening rings on furnace or c.c. bottom

✓

Working pressure of furnace by Rules

196 lbs.

End plates in steam space: Material

Steel

Tensile strength

26-30 tons

Thickness

1 1/4"

Pitch of stays

20 1/2" x 20 1/2"

How are stays secured

screwed into end plates, double nuts and washers

Working pressure by Rules

185 lbs. sq"

Tube plates: Material

(front

Steel

(back

Steel

Tensile strength

26-30 tons

Thickness

3/8"

13/16"

Mean pitch of stay tubes in nests

8 3/8"

Pitch across wide water spaces

14 1/4"

Working pressure

(front

187 lbs. sq"

(back

245 lbs. sq"

Girders to combustion chamber tops: Material

Steel

Tensile strength

28-32 tons

Depth and thickness of girder

at centre

9" - 1 3/4"

Length as per Rule

33"

Distance apart

10 1/4"

No. and pitch of stays

in each

three

8"

Working pressure by Rules

199 lbs. sq"

Combustion chamber plates: Material

Steel

Tensile strength

26-30 tons

Thickness: Sides

3/4"

Back

1/16"

Top

3/4"

Bottom

3/4"

Pitch of stays to ditto: Sides

9 3/4" x 8"

Back

9 3/8" x 8 1/4"

Top

10 1/4" x 8"

Are stays fitted with nuts or riveted over

nuts

Working pressure by Rules

212 lbs. sq"

Front plate at bottom: Material

Steel

Tensile strength

26-30 tons

Thickness

7/8"

Lower back plate: Material

Steel

Tensile strength

26-30 tons

Thickness

13/16"

Pitch of stays at wide water space

13 1/4" x 8 1/4"

Are stays fitted with nuts or riveted over

nuts

Working Pressure

220 lbs. sq"

Main stays: Material

Steel

Tensile strength

28-32 tons

Diameter

(At body of stay,

or

3 1/4"

No. of threads per inch

FIVE

Area supported by each stay

420.25 sq"

Working pressure by Rules

186 lbs. sq"

Screw stays: Material

Steel

Tensile strength

26-30 tons

Diameter

(At turned off part,

or

1 5/8"

Over threads

1 3/4"

No. of threads per inch

TEN

Area supported by each stay

77.34 sq"



Lloyd's Register Foundation

008759-008764-0061

Working pressure by Rules *197400* Are the stays drilled at the outer ends *no* Margin stays: Diameter { At turned off part, or Over threads *1 3/4" 1 7/8" 2"*

No. of threads per inch *TEN* Area supported by each stay *93.30* Working pressure by Rules *194400*

Tubes: Material *hought row* External diameter { Plain *3 1/2"* Stay *3 1/4"* Thickness { *no. 7 H.G. 1/4" 5/16" 3/8"* No. of threads per inch *TEN*

Pitch of tubes *4 1/2" x 4 3/8"* Working pressure by Rules *plain 300400 stay 306400* Manhole compensation: Size of opening in shell plate *16" x 12"* Section of compensating ring *36 x 22 x 1 1/8" double* No. of rivets and diameter of rivet holes *28 - 1 1/8"*

Outer row rivet pitch at ends *8"* Depth of flange if manhole flanged ☒ Steam Dome: Material

Tensile strength Thickness of shell Description of longitudinal joint

Diameter of rivet holes Pitch of rivets Percentage of strength of joint { Plate Rivets

Internal diameter Working pressure by Rules Thickness of crown No. and diameter of stays

Inner radius of crown Working pressure by Rules

How connected to shell Size of doubling plate under dome Diameter of rivet holes and pitch of rivets in outer row in dome connection to shell

Type of Superheater Manufacturers of { Tubes Steel castings

Number of elements Material of tubes Internal diameter and thickness of tubes

Material of headers Tensile strength Thickness Can the superheater be shut off and the boiler be worked separately

Is a safety valve fitted to every part of the superheater which can be shut off from the boiler

Area of each safety valve Are the safety valves fitted with casing gear Working pressure as per Rules

Pressure to which the safety valves are adjusted Hydraulic test pressure: tubes, castings and after assembly in place Are drain cocks or valves fitted to free the superheater from water where necessary

Have all the requirements of Sections 14 to 22 inclusive for boilers been complied with *Yes*

The foregoing is a correct description, For HARLAND AND WOLFE, LIMITED. Manufacturer.

Ed. Hebeck

Dates of Survey { During progress of work in shops - *Jan 1 22 Feb 8. 13 22. 26 28* During erection on board vessel - *Mar 12 20 Apr 5. 30 May 3 27*

Are the approved plans of boiler and superheater forwarded herewith *Yes* (If not state date of approval.) Total No. of visits *13*

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.)

These boilers were constructed under Special Survey to an approved design. The materials & workmanship are good. They were subjected to hydraulic test in accordance with the rules, and were efficiently fastened on board the vessel. The safety valves were adjusted to the working pressure under steam.

Survey Fee ... £ *See Survey Report* When applied for, 192 Travelling Expenses (if any) £ : : When received, 192

R. Lee Ames

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute *Feb 7 JUN 1929*

Assigned *See Report attached*

