

REPORT ON BOILERS.

No. 53243

-8 FEB 1933

Received at London Office

Date of writing Report

19

When handed in at Local Office

6.2.1933

Port of

Glasgow

Date First Survey

18.2.32

Last Survey

2.2.31

1933

No. in Survey held at
Reg. Book

Glasgow

(Number of Visits)

95

Gross

5415

Net

3208

on the new steel S/S "HARDINGHAM".

Master

Built at

Port: Glasgow

By whom built

Lithgous Ltd

Yard No. 858

When built 1932

meter of Engines made at

Glasgow

By whom made

David Rowan & Co Ltd

Engine No. 947

When made 1932

Boilers made at

Glasgow

By whom made

David Rowan & Co Ltd

Boiler No. 947

When made 1932

nd pitch

Nominal Horse Power

502

Owners

J & C. Harrison Ltd

Port belonging to

London

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel

Bolton & Co Ltd

(Letter for Record (T))

Total Heating Surface of Boilers

1850 sq ft

Is forced draught fitted

yes

Coal or Oil fired

coal

Working Pressure 220

No. and Description of Boilers

one single ended

Tested by hydraulic pressure to

380

Date of test

16.11.32

No. of Certificate

19174

Can each boiler be worked separately

yes

Area of Firegrate in each Boiler

51 sq ft

No. and Description of safety valves to each boiler

Two, Improved high lift

Area of each set of valves per boiler

per Rule 6.56 sq ft
as fitted 7.96 sq ft

Pressure to which they are adjusted

225

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

2'-0"

Is oil fuel carried in the double bottom under boilers

no

Smallest distance between shell of boiler and tank top plating

2'-6"

Is the bottom of the boiler insulated

yes

Largest internal dia. of boilers

13'-3 7/16"

Length

11'-6"

Shell plates: Material

steel

Tensile strength 29-33 tons

Thickness

1 9/32"

Are the shell plates welded or flanged

no

Description of riveting: circ. seams

end

inter.

long. seams

WBS TR

Diameter of rivet holes in

circ. seams

F 1 3/16"

B 1 7/8"

Pitch of rivets

F 3.156"

B 3.767"

Percentage of strength of circ. end seams

plate

F 62.3

B 63.5

rivets

F 43.4

B 43.8

Percentage of strength of circ. intermediate seam

plate

rivets

Percentage of strength of longitudinal joint

plate

85.2

rivets

92.5

combined

88.9

Working pressure of shell by Rules

220

Thickness of butt straps

outer 3/16"

inner 1 3/32"

No. and Description of Furnaces in each Boiler

Three Deighton

Material

steel

Tensile strength

26-30 tons

Smallest outside diameter

3'-2 9/32"

Length of plain part

top

bottom

Thickness of plates

crown

bottom

Description of longitudinal joint

welded

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

-

Working pressure of furnace by Rules

244

End plates in steam space: Material

steel

Tensile strength

26-30 tons

Thickness

1 3/16"

Pitch of stays 18" x 16 1/2"

How are stays secured

WBN

Working pressure by Rules

220

Tube plates: Material

front steel

back "

Tensile strength

26-30 tons

Thickness

1 5/16"

25/32"

Mean pitch of stay tubes in nests

9'-6"

Pitch across wide water spaces

14"

Working pressure

front 229

back 236

Girders to combustion chamber tops: Material

steel

Tensile strength

28-32 tons

Depth and thickness of girder

at centre

2 @ 7 1/8" x 7 1/8"

Length as per Rule

31 1/2"

Distance apart

8 1/4"

No. and pitch of stays

in each

2 @ 10"

Working pressure by Rules

226

Combustion chamber plates: Material

steel

Tensile strength

26-30 tons

Thickness: Sides

3/4"

Back

2 3/32"

Top

3/4"

Bottom

3/4"

Pitch of stays to ditto: Sides

10" x 8 1/4"

Back

10" x 8"

Top

8 1/4" x 10"

Are stays fitted with nuts or riveted over

nuts

Working pressure by Rules

221

Front plate at bottom: Material

steel

Tensile strength

26-30 tons

Thickness

1 5/16"

Lower back plate: Material

steel

Tensile strength

26-30 tons

Thickness

1 3/16"

Pitch of stays at wide water space

13 7/16"

Are stays fitted with nuts or riveted over

nuts

Working Pressure

220

Main stays: Material

steel

Tensile strength

28-32 tons

Diameter

At body of stay, 3" & 2 3/4"

or Over threads

No. of threads per inch

6

Area supported by each stay

306 & 285 sq in

Working pressure by Rules

256 & 230

Screw stays: Material

iron

Tensile strength

21 1/2 tons

Diameter

At turned off part, 1 7/8"

or Over threads

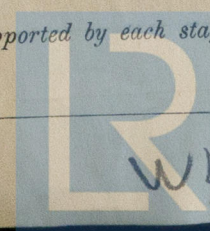
No. of threads per inch

9

Area supported by each stay

82.5 sq in

Shipping.



Lloyd's Register Foundation

12/

Working pressure by Rules **258** Are the stays drilled at the outer ends **no** Margin stays: Diameter { At turned off part, or Over threads **2"**

No. of threads per inch **9** Area supported by each stay **940"** Working pressure by Rules **263**

Tubes: Material **Iron** External diameter { Plain **3"** Stay **3"** Thickness **3/16"** No. of threads per inch **9**

Pitch of tubes **4 1/8" x 4 3/16"** Working pressure by Rules **250** Manhole compensation: Size of opening in shell plate **19 1/2" x 15 1/2"** Section of compensating ring **9 1/4" x 1 1/2"** No. of rivets and diameter of rivet holes **32 @ 1 1/8"**

Outer row rivet pitch at ends **9 7/16"** Depth of flange if manhole flanged **3"** Steam Dome: Material **none**

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 **none** 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 David Rowan & Co. Ltd.
Arch. W. Grierson Manufacturer.

Dates of Survey { During progress of work in shops - - - while building { During erection on board vessel - - - } SEE ACCOMPANYING MACHINERY REPORT

Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval) **yes**

Is this Boiler a duplicate of a previous case **yes** If so, state Vessel's name and Report No. **Harmatis GL Rm. No. 52530**

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

The workmanship and material is good.

The boiler has been constructed under special survey, satisfactorily fitted in the vessel and its safety valves adjusted under steam.

Survey Fee ... £ See Archy Rpt. When applied for, 19

Travelling Expenses (if any) £ When received, 19

Committee's Minute **GLASGOW 7 FEB 1933**

Assigned **SEE ACCOMPANYING MACHINERY REPORT.**

Engineer Surveyor to Lloyd's Register of Shipping.

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