

REPORT ON BOILERS.

No. 53243

-8 FEB 1933

Received at London Office

Writing Report

When handed in at Local Office

Port of

Glasgow

Date, First Survey

18. 2. 33

Last Survey

2. 2. 1933

(Number of Visits)

95

Gross 5415
Net 3208

on the new steel 915 "HARDINGHAM"

Built at

Port Glasgow

By whom built

Lithyons Ltd

Yard No.

858

When built 1932

Where made at

Glasgow

By whom made

David Rowan & Co Ltd

Engine No.

947

When made 1932

Where made at

Glasgow

By whom made

David Rowan & Co Ltd

Boiler No.

947

When made 1932

Indicated Horse Power

502

Owners

J & C Harrison Ltd

Port belonging to

London

LTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel

Colvilles Ltd

(Letter for Record (r))

Heating Surface of Boilers

5000 sq ft

Is forced draught fitted

yes

Coal or Oil fired

coal

Description of Boilers

Two single ended

Working Pressure

220

Tested by hydraulic pressure to

380

Date of test

15-11-32

No. of Certificate

19173

Can each boiler be worked separately

yes

Area of Firegrate in each Boiler

50.35 sq ft

No. and Description of safety valves to each boiler

Two Improved high lift

Pressure of each set of valves per boiler

per Rule 8.86 lb
as fitted 9.820 lb

Pressure to which they are adjusted

225 lb

Are they fitted with easing gear

yes

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

yes

Least distance between boilers or uptakes and bunkers or woodwork

2'0"

Is oil fuel carried in the double bottom under boilers

no

Least distance between shell of boiler and tank top plating

2'6"

Is the bottom of the boiler insulated

yes

Greatest internal dia. of boilers

15'3 1/2"

Length

11'6"

Shell plates: Material

steel

Tensile strength

29.33 tons

Thickness

1 15/32"

Are the shell plates welded or flanged

no

Description of riveting: circ. seams

end

inter.

Circ. seams

VRBS, TR

Diameter of rivet holes in

circ. seams F 1 3/8" B 1 1/2"

long. seams

1 1/2"

Pitch of rivets

F 3.43" B 4.023"

10 7/16"

Percentage of strength of circ. end seams

plate rivets

F 60. B 63.2

F 46.8 B 46.8

Percentage of strength of circ. intermediate seam

plate rivets

Percentage of strength of longitudinal joint

plate rivets combined

25.6 25.74 28.5

Working pressure of shell by Rules

220

Thickness of butt straps

outer 1 1/4"
inner 1 1/8"

No. and Description of Furnaces in each Boiler

Three Deighton

3 cf

Material

steel

Tensile strength

26-30 tons

Smallest outside diameter

46 1/4"

Length of plain part

top bottom

Thickness of plates

crown bottom

3/4"

Description of longitudinal joint

welded

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

Working pressure of furnace by Rules

238

Plates in steam space: Material

steel

Tensile strength

26-30 tons

Thickness

1 3/8"

Pitch of stays 19" x 21"

How are stays secured

D.N.

Working pressure by Rules

221

Boiler plates: Material

front back

steel

Tensile strength

26-30 tons

Thickness

1 5/16"

2 5/32"

Angle pitch of stay tubes in nests

9.6"

Pitch across wide water spaces

14"

Working pressure

front 228
back 236

Orders to combustion chamber tops: Material

steel

Tensile strength

26-32 tons

Depth and thickness of girder

Centre

2 @ 9 7/8" x 7/8"

Length as per Rule

34.5"

Distance apart

9 7/8"

No. and pitch of stays

Each

3 @ 8 1/4"

Working pressure by Rules

220

Combustion chamber plates: Material

steel

Tensile strength

26-30 tons

Thickness: Sides

2 3/32"

Back

2 3/32"

Top

2 3/32"

Bottom

2 9/32"

Pitch of stays to ditto: Sides

8 1/4" x 9 7/8"

Back

10" x 8"

Top

8 1/4" x 9 7/8"

Are stays fitted with nuts or riveted over

nuts

Working pressure by Rules

220

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 1/16"

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, or Over threads

3" & 3 1/4"

No. of threads per inch

6

Area supported by each stay

352 & 433 sq in

Working pressure by Rules

224 & 220

Screw stays: Material

Iron

Tensile strength

21 1/2 tons

Diameter

At turned off part, or Over threads

1 7/8"

No. of threads per inch

9

Area supported by each stay

30 sq in



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W405-0096

Working pressure by Rules **266** Are the stays drilled at the outer ends **no** Margin stays: Diameter { At turn-off part **2"** Over threads **2"**
 No. of threads per inch **9** Area supported by each stay **96 sq"** Working pressure by Rules **257**
 Tubes: Material **Iron** External diameter { Plain **3 1/2"** Stay **3"** Thickness { **8 W.G.** No. of threads per inch **9**
 Pitch of tubes **4 3/16" x 4 7/8"** Working pressure by Rules **250** Manhole compensation: Size of opening in
 shell plate **19 1/2" x 15 1/2"** Section of compensating ring **10 1/2" x 1 15/32"** No. of rivets and diameter of rivet holes **34 @ 1 1/2"**
 Outer row rivet pitch at ends **10 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 **828** Pitch of rivets Percentage of strength of joint { Plate Rivets
 Internal diameter Working pressure by Rules Thickness of crown No. and diameter of Engines ma
 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 **Smoke tube** Manufacturers of { Tubes **See copy of Newcastle Certificate No** 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 **no** Is a safety valve fitted to every part of the superheater which can be shut off from the boiler **yes**
 Area of each safety valve **1.77 sq"** Are the safety valves fitted with easing gear **yes** Working pressure as per
 Rules Pressure to which the safety valves are adjusted **227** Hydraulic test pressure:
 tubes castings and after assembly in place **440** Are drain cocks or valves fitted
 to free the superheater from water where necessary **yes**
 Have all the requirements of Sections 14 to 22 inclusive for boilers been complied with **yes**

The foregoing is a correct description,
Jn David Rowan & Co. Ltd Manufacturer.
Arch. H. Grierson

Dates { During progress of work in shops - - } Are the approved plans of boiler and superheater forwarded herewith **yes**
 while { During erection on board vessel - - } (If not state date of approval)
 building { **SEE ACCOMPANYING MACHINERY REPORT** }
 Is this Boiler a duplicate of a previous case **yes** If so, state Vessel's name and Report No. **Harmatus GL Rpt No 52530**

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.)
The materials and workmanship are good.
The boilers have been constructed under special survey. Satisfactorily fitted in the vessel and their safety valves adjusted under steam.

Survey Fee ... £ **See Machinery Rpt** When applied for, 19
 Travelling Expenses (if any) £ When received, 19

L. J. Davis
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute **GLASGOW 7 FEB 1933**
 Assigned **SEE ACCOMPANYING MACHINERY REPORT.**