

REPORT ON BOILERS.

No. 52676

-6 JUL 1932

Received at London Office

Date of writing Report

19

When handed in at Local Office

1932

Port of Glasgow

No. in
Reg. Book

Survey held at

Glasgow

Date, First Survey

29

9

31

Last Survey

27-6-

1932

(Number of Visits 87)

Gross 5415

Net 3243

on the new steel 915 "HARMANTEN"

Master

Built at Port Glasgow

By whom built

Lithgows Ltd

Yard No. 854

When built 1932

Engines made at

Glasgow

By whom made

David Rowan & Co Ltd

Engine No. 943 When made 1932

Boilers made at

Glasgow

By whom made

David Rowan & Co Ltd

Boiler No. 943 When made 1932

Nominal Horse Power

502

Owners

J & C. Harrison Ltd

Port belonging to

London

MULTITUBULAR BOILERS MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel

Lithgows Ltd

(Letter for Record (r) ✓)

Total Heating Surface of Boilers

1850 sq ft

Is forced draught fitted

yes

Coal or Oil fired

oil

No. and Description of Boilers

one single ended

Working Pressure 220

Tested by hydraulic pressure to

380

Date of test

2-5-32

No. of Certificate

19128

Can each boiler be worked separately

Area of Firegrate in each Boiler

510 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 3/32"

Are the shell plates welded or flanged

no

Description of riveting: circ. seams

{ end 15/16" 15/16"
inter. 7/8" 7/8"

long. seams

UBS TR

Diameter of rivet holes in

{ circ. seams F 1 3/16" 6 1 3/8"
long. seams 1 3/8"

Pitch of rivets

{ F 3-156 3-167"
9 9/16"

Percentage of strength of circ. end seams

{ plate F 62.3 86.5
rivets F 43.4 84.8

Percentage of strength of circ. intermediate seam

{ plate 85.2
rivets 92.5
combined 88.9

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 1/32"
inner 1 3/32"

No. and Description of Furnaces in each Boiler

Three Deighton 3' 6"

Material

steel

Tensile strength

26-30 tons

Smallest outside diameter

3'-2 3/4"

Length of plain part

{ top
bottom

Thickness of plates

{ crown 3 1/4"
bottom 3 1/4"

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

WN

Working pressure by Rules

220

Tube plates: Material

{ front steel
back "

Tensile strength

26-30 tons

Thickness

{ 1 5/16"
2 5/32"

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 7/8" x 7/8"

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

10" x 8 1/4"

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"
Over threads

No. of threads per inch

6

Area supported by each stay

305 & 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"
Over threads

No. of threads per inch

9

Area supported by each stay

82.5 sq in

For S.S.O.F. license see S.S. "Harmatius" F.E. Rpt Grk 19411

Working pressure by Rules **258** Are the stays drilled at the outer ends **no** Margin stays: Diameter ^(At turned off part) **2"**
No. of threads per inch **9** Area supported by each stay **94 1/4"** Working pressure by Rules **263**
Tubes: Material **Iron** External diameter ^{Plain} **3"** Thickness ^{8 W.G.} **1/4"** No. of threads per inch **9**
Pitch of tubes **4 1/4" 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 3/32"** No. of rivets and diameter of rivet holes **32 @ 1 3/8"**
Outer row rivet pitch at ends **9 9/16"** Depth of flange if manhole flanged **3"** Steam Dome: Material **none**
Tensile strength Thickness of shell Description of longitudinal joint
Diameter of rivet holes **5/8"** Pitch of rivets **2"** Percentage of strength of joint ^{Plate} **100%**
Internal diameter **24"** Working pressure by Rules **250** Thickness of crown **1/4"** No. and diameter of
stays **12** Inner radius of crown **12"** Working pressure by Rules **250**
How connected to shell **by 12 stays** Size of doubling plate under dome **12" x 12"** Diameter of rivet holes and pitch
of rivets in outer row in dome connection to shell **5/8" @ 2"**

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 **28 1/2"** Are the safety valves fitted with casing gear **yes** Working pressure as per
Rules **258** Pressure to which the safety valves are adjusted **250** Hydraulic test pressure:
tubes **250** and after assembly in place **250** 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,
for David Roway & Co. Ltd. Manufacturer.
Arch. W. Frierson

Dates of Survey ^(During progress of work in shops - -) **1/7/32** Are the approved plans of boiler and superheater forwarded herewith **yes**
^(During erection on board vessel - - -) **1/7/32** (If not state date of approval.)
Total No. of visits **1**

Is this Boiler a duplicate of a previous case **yes** If so, state Vessel's name and Report No. **"Harmatius" Rpt. No 52530**

GENERAL REMARKS (State quality of workmanship, opinions as to class, etc.)
The materials and workmanship are good.
The boiler has been constructed under special survey in accordance with the Rules, satisfactorily fitted in the vessel and its safety valves adjusted under steam.

Survey Fee **£ 100** When applied for, **19**
Travelling Expenses (if any) **£ 100** When received, **19**
S. C. Davis
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute **GLASGOW 5-JUL 1932**
Assigned **SEE ACCOMPANYING MACHINERY REPORT.**