

REPORT ON BOILERS.

No. 2530

Received at London Office

1 JUN 1932

Date of writing Report

19

When handed in at Local Office

24. 5. 1931

Port of

Glasgow

No. in Reg. Book. Survey held at

Glasgow

Date, First Survey

29. 9. 31

Last Survey

23-5

1932

on the **new steel S/S "HARMATRIS"**

(Number of Visits 100)

Gross

5395

Net

3195

Master

Built at **Port Glasgow**

By whom built **Lithgows Ltd**

Yard No. 853

When built 1932

Engines made at

Glasgow

By whom made

David Rowan & Co Ltd

Engine No. 942

When made 1932

Boilers made at

Glasgow

By whom made

David Rowan & Co Ltd

Boiler No. 942

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

Lochmiller Ltd

(Letter for Record **(r)**)

Total Heating Surface of Boilers

5000 sq ft

Is forced draught fitted

yes

Coal or Oil fired

coal

No. and Description of Boilers

Two single ended

Working Pressure

220 lbs

Tested by hydraulic pressure to

380

Date of test

18-2-32

No. of Certificate

19094

Can each boiler be worked separately

yes

Area of Firegrate in each Boiler

53.15 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 8.860

as fitted 9.820

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

15'-3 1/16"

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

DR

long. seams

WBS. TR

Diameter of rivet holes in

circ. seams

F 1 7/8" B 1 1/2"

Pitch of rivets

F 3.43" B 4.083"

Percentage of strength of circ. end seams

plate

F 60. B 63.2

rivets

F 46.8 B 46.8

Percentage of strength of circ. intermediate seam

plate

rivets

Percentage of strength of longitudinal joint

plate

85.6

rivets

85.74

combined

Working pressure of shell by Rules

222

Thickness of butt straps

outer 1 7/16"

inner 1 15/16"

No. and Description of Furnaces in each Boiler

Three Deighton

Material

steel

Tensile strength

26-30 tons

Smallest outside diameter

46 1/4"

Length of plain part

top

bottom

Thickness of plates

crowns

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

End 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

W.N.

Working pressure by Rules

221

Tube plates: Material

front steel

back

Tensile strength

26-30 tons

Thickness

15/16"

25/32"

Mean pitch of stay tubes in nests

9 3/4" x 9.6

Pitch across wide water spaces

14"

Working pressure

front

228

back

236

Girders to combustion chamber tops: Material

steel

Tensile strength

28-32 tons

Depth and thickness of girder

at centre

2 @ 9 5/8" x 1 1/8"

Length as per Rule

34.5"

Distance apart

9 5/8"

No. and pitch of stays

in each

3 @ 8 1/4"

Working pressure by Rules

220

Combustion chamber plates: Material

steel

Tensile strength

26-30 tons

Thickness: Sides

23/32"

Back

23/32"

Top

23/32"

Bottom

29/32"

Pitch of stays to ditto: Sides

8 1/4" x 9 5/8"

Back

10" x 8"

Top

8 1/4" x 9 5/8"

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,

3" & 3 1/4"

Over threads

No. of threads per inch

9.6

Area supported by each stay

3528 & 4330"

Working pressure by Rules

224 & 220

Screw stays: Material

steel Iron

Tensile strength

26-30 tons 2 1/2 tons

Diameter

At turned off part,

1 7/8"

Over threads

No. of threads per inch

9.1

Area supported by each stay

800"

Working pressure by Rules **266** Are the stays drilled at the outer ends **no** Margin stays: Diameter **2"** (At turned off part, or Over threads)

No. of threads per inch **9** Area supported by each stay **960"** Working pressure by Rules **257**

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

Pitch of tubes **4 3/16" x 4 8/8"** 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 1/2"** 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 Pitch of rivets Percentage of strength of joint (Plate / Rivets)

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

How connected to shell Inner radius of crown Working pressure by Rules

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 **See copy of Nuc cert N° 9932 herewith**

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**

Area of each safety valve **1.770"** Is a safety valve fitted to every part of the superheater which can be shut off from the boiler **yes**

Rules - Pressure to which the safety valves are adjusted **227** Working pressure as per tubes - and after assembly in place **440 / 185** Hydraulic test pressure: 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
 Arch. N. Frierson, Manufacturer.

Dates of Survey: During progress of work in shops - - - Are the approved plans of boiler and superheater forwarded herewith **yes**
 while building During erection on board vessel - - - (If not state date of approval.)

SEE ACCOMPANYING MACHINERY REPORT. Total No. of rivets **100**

Is this Boiler a duplicate of a previous case **no** If so, state Vessel's name and Report No.

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 in accordance with the Rules, satisfactorily fitted in the vessel and their safety valves adjusted.

A.G.
 24/5/32

Survey Fee ... £ ... When applied for, 19

Travelling Expenses (if any) £ ... When received, 19

S. C. Davis
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute **GLASGOW 31 MAY 1932**

Assigned **SEE ACCOMPANYING MACHINERY REPORT.**

