

REPORT ON BOILERS.

No. 53243

8 FEB 1933

Received at London Office

Date of writing Report

When handed in at Local Office

6.2.1933 Port of Glasgow

No. in Reg. Book

Glasgow

Date First Survey 18.2.32 Last Survey 22.2.33

(Number of Visits 95) Tons 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

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

Nominal Horse Power 502 Owners J & C. Harrison Ltd Port belonging to London

RETAIN

MULTITUBULAR BOILERS - MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel boliville 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 6.56 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 no

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 WR

long. seams WR 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 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 3/8" 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'-9 9/32"

Length of plain part top 41" bottom 64" Thickness of plates crowns 3/16" bottoms 3/16" 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 WTN steel Working pressure by Rules 220 Tube plates: Material front steel back " Tensile strength 26-30 tons Thickness front 15/16" back 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 13/16"

Lower back plate: Material steel Tensile strength 26-30 tons Thickness 13/16" 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" 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" No. of threads per inch 9 Area supported by each stay 82.5 sq in

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Working pressure by Rules **258** 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 **940"** Working pressure by Rules **263**
 Tubes: Material **Iron** External diameter **3"** Plain Stay 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 9/32"** No. of rivets and diameter of rivet holes **32 @ 1 7/8"**
 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 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 **none** 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. Manufacturer. Arch. W. Grierson

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

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

[Handwritten notes and signatures in the remarks section]

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

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

Assigned **SEE ACCOMPANYING MACHINERY REPORT.**

