

# REPORT ON BOILERS.

No. 55721

Received at London Office 19 JUN 1935

of writing Report 19 When handed in at Local Office 8. 5. 1935 Port of Glasgow

Survey held at Glasgow Date, First Survey 29. 10. 34 Last Survey 30-4-1935

on the new steel S/S "HARPAGON" (Number of Visits 62) Tons {Gross 5719 Net 3378}

Built at Port Glasgow By whom built Lethbride Ltd Yard No. 874 When built 1935

Lines made at Glasgow By whom made David Rowan & Co Ltd Engine No. 972 When made 1935

Boilers made at Glasgow By whom made David Rowan & Co Ltd Boiler No. 972 When made 1935

Indicated Horse Power 475 Owners J.T. Harrison & Co Port belonging to London

## MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel Plates - steel by Scotland's Iron & Steel Co Ltd (Letter for Record (71) ✓)

Heating Surface of Boilers 5000 sq ft Is forced draught fitted yes Coal or Oil fired both

Description of Boilers Two single ended Working Pressure 220

Tested by hydraulic pressure to 380 Date of test 22-2-35 No. of Certificate 19515 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 ✓

Area of each set of valves per boiler {per Rule 8.86 sq ft 6.648 sq ft as fitted 9.82 sq ft Pressure to which they are adjusted - 7.950 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" Length 11'-6" Shell plates: Material steel Tensile strength 29.53 tons

Thickness 1 15/32 Are the shell plates welded or flanged no Description of riveting: circ. seams {end 012 inter. ✓

Long. seams WBS TR Diameter of rivet holes in {circ. seams F 1 3/8" B 1 1/2" Pitch of rivets {F 3.43" B 4.083 long. seams 1 1/2" 10 7/16" ✓

Percentage of strength of circ. end seams {plate F 60 B 63.2 rivets F 46.9 B 46.9 Percentage of strength of circ. intermediate seam {plate ✓ rivets ✓

Percentage of strength of longitudinal joint {plate 85.6 rivets 85.14 combined 88.3 Working pressure of shell by Rules 220

Thickness of butt straps {outer 1 1/4" inner 1 15/64 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 {crown 3/4" 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

Diagonal 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 WN Working pressure by Rules 221

Diagonal plates: Material {front steel back " Tensile strength {26-30 tons Thickness {15/16" 25/32" ✓

Minimum pitch of stay tubes in nests 9.60" Pitch across wide water spaces 14" Working pressure {front 228 back 236

Diagonal plates to combustion chamber tops: Material steel Tensile strength 28-32 tons Depth and thickness of girder

Centre 2 @ 9 5/8" 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 23/32 Back 23/32 Top 23/32 Bottom 27/32

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 15/16 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 ✓

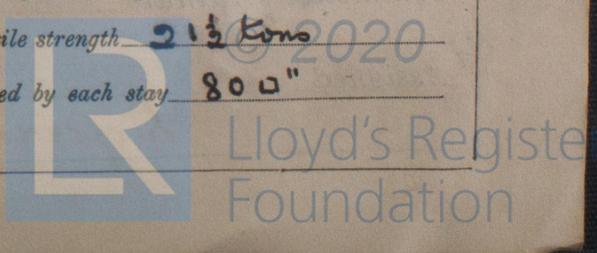
Working Pressure 220 Main stays: Material steel Tensile strength 28-32 tons

Diameter {At body of stay, 3 & 3/4" 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, 1 7/8" No. of threads per inch 9 Area supported by each stay 800"

W43-0125



Working pressure by Rules 266 Are the stays drilled at the outer ends no Margin stays: Diameter <sup>At turned off part,</sup> 2" or <sup>Over threads</sup> 2"

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

Tubes: Material Iron External diameter <sup>Plain</sup> 3" <sup>Stay</sup> 3" Thickness 8 W.S. No. of threads per inch 9

Pitch of tubes 4 1/8 x 4 1/16 Working pressure by Rules 250 lb Manhole compensation: Size of opening 3 1/2"

shell plate 19 1/2 x 18 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 10 1/2 x 1 15/32 Steam Dome: Material Iron

Tensile strength \_\_\_\_\_ Thickness of shell \_\_\_\_\_ Description of longitudinal joint \_\_\_\_\_

Diameter of rivet holes \_\_\_\_\_ Pitch of rivets \_\_\_\_\_ Percentage of strength of joint <sup>Plate</sup> \_\_\_\_\_ <sup>Rivets</sup> \_\_\_\_\_

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 of rivets in outer row in dome connection to shell \_\_\_\_\_

Type of Superheater Smoke tube Manufacturers of <sup>Tubes</sup> See New Cent: N° C 2496 <sup>Steel castings</sup> \_\_\_\_\_

Number of elements \_\_\_\_\_ Material of tubes \_\_\_\_\_ Internal diameter and thickness of tubes \_\_\_\_\_

Material of headers \_\_\_\_\_ Tensile strength \_\_\_\_\_ Thickness \_\_\_\_\_ Can the superheater be shut off 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 1.770" Are the safety valves fitted with easing gear yes Working pressure as Rules \_\_\_\_\_ Pressure to which the safety valves are adjusted 440 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,  
For David Rowan & Co. Ltd Manufactured by Arch. H. Grierson

Dates of Survey <sup>During progress of work in shops - - -</sup> \_\_\_\_\_ Are the approved plans of boiler and superheater forwarded herewith yes <sup>while building</sup> <sup>During erection on board vessel - - -</sup> \_\_\_\_\_ (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. "Harbledown" ELS Rpt. No. 53

**GENERAL REMARKS** (State quality of workmanship, opinions as to class, &c.)  
GLASGOW 30-4-35  
The materials and workmanship are good.  
The boilers have been constructed under special survey and have been placed on board the vessel.

7/5/35

Survey Fee £ 2.5 ... See survey Rpt. When applied for, 10

Travelling Expenses (if any) £ 10 ... When received, 10

Sch. Duns  
Engineer Surveyor to Lloyd's Register of Shipping

Committee's Minute GLASGOW 8 MAY 1935 9.5.7m

Assigned SEE ACCOMPANYING MACHINERY REPORT.

