

# REPORT ON BOILERS.

No. 55954

31 JUL 1935

Received at London Office

Date of writing Report 19 29.7.35 When handed in at Local Office 29.7.35 Port of Glasgow

No. in Survey held at Glasgow Date, First Survey 6.4.34 Last Survey 25.7.35

Reg. Book. Glasgow (Number of Visits 137) Gross 8031 Tons Net 4804

on the new steel S/S "MARWARRI"

Built at Port Glasgow By whom built W & H Hamilton & Co. Ltd. Yard No. 417 When built 1935

Engines made at Glasgow By whom made Davis Rowan & Co. Ltd. Engine No. 969 When made 1935

Boilers made at Glasgow By whom made Davis Rowan & Co. Ltd. Boiler No. 969 When made 1935

Nominal Horse Power 1150 Owners T & J. Brockelbank & Co. Ltd. Port belonging to Singapore

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

Manufacturers of Steel Bovilles Ltd. (Letter for Record (7))

Total Heating Surface of Boilers 14060 sq. ft. Is forced draught fitted yes Coal or Oil fired coal Working Pressure 250 lbs

No. and Description of Boilers Four single ended 24ft-19490 24ft-2012-34 24ft-19490 24ft-19510 Can each boiler be worked separately yes

Tested by hydraulic pressure to 425 lbs Data of test 24.7.35 No. of Certificates 7-2-35

Area of Firegrate in each Boiler 68 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 8.30" as fitted 9.820" Pressure to which they are adjusted 250 lb. Are they fitted with easing gear yes

In case of donkey boilers, state whether steam from main boilers can enter the donkey boiler yes

Smallest distance between boilers or uptakes and bunkers or woodwork 2'-4" Is oil fuel carried in the double bottom under boilers no

Smallest distance between shell of boiler and tank top plating 2'-0" Is the bottom of the boiler insulated yes

Largest internal dia. of boilers 17'-0" Length 12'-6" Shell plates: Material steel Tensile strength 34-38 tons

Thickness 1 3/16" & 1 5/8" Are the shell plates welded or flanged no Description of riveting: circ. seams {end WR inter. WR, T.R. Pitch of rivets {circ. seams F 1 1/16" C 1 3/4" B 1 3/4" long. seams 1 3/4" {plate F 3.707" C 4.755" B 4.6" rivets 11/8"

Working pressure of shell by Rules 251

Percentage of strength of circ. end seams {plate F 57.6. C 63.2. B 62 rivets F 43.7. C 63.2. B 43.8 rivets 84.2 combined 85.3

Percentage of strength of longitudinal joint {plate 84.2 rivets 84.2 combined 85.3

Thickness of butt straps {outer 1 1/4" inner 1 3/8" No. and Description of Furnaces in each Boiler Four Deighton Corrugated

Material steel Tensile strength 26-30 tons Smallest outside diameter 3'-6 3/16"

Length of plain part {top ✓ bottom ✓ Thickness of plates {crown 23" bottom 32" Description of longitudinal joint welded

Working pressure of furnace by Rules 250

Dimensions of stiffening rings on furnace or c.c. bottom — Working pressure of furnace by Rules 250

End plates in steam space: Material steel Tensile strength 26-30 tons Thickness 1 7/16" Pitch of stays 17 3/4" x 21 1/2"

Working pressure by Rules 250

How are stays secured DN

Sub plates: Material {front steel back " Tensile strength {front 26-30 tons back " Thickness {front 15/16" back 13/16" Working pressure {front 257 back 252

Lean pitch of stay tubes in nests 9 1/4" Pitch across wide water spaces 13 1/2" Working pressure {front 257 back 252

Orders to combustion chamber tops: Material Steel Tensile strength 28-32 tons Depth and thickness of girder —

Centre 2 @ 10 1/2" x 7/8" Length as per Rule 37 3/8" Distance apart 8 3/4" No. and pitch of stays —

Working pressure by Rules 253 Combustion chamber plates: Material steel

Tensile strength 26-30 tons Thickness: Sides 3/4" Back 23/32" Top 3/4" Bottom 7/8"

Pitch of stays to ditto: Sides 9" x 8 3/4" Back 8 1/4" x 8 3/4" Top 9" x 8 3/4" Are stays fitted with nuts or riveted over nuts

Working pressure by Rules 251 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 15/16"

Pitch of stays at wide water space 13 1/2" Are stays fitted with nuts or riveted over nuts

Working Pressure 250 Main stays: Material steel Tensile strength 28-32 tons

Diameter {At body of stay, 3 1/2" & 3 1/4" No. of threads per inch 6 Area supported by each stay 393" & 370"

Working pressure by Rules 273 & 250 Screw stays: Material Iron Tensile strength 21 1/2 tons

Diameter {At turned off part, 1 3/4" & 1 1/8" No. of threads per inch 9 Area supported by each stay 72" & 78.7"

Working pressure by Rules 251 & 271 Are the stays drilled at the outer ends no Margin stays: Diameter <sup>At turned off part,</sup> 2" <sub>or Over threads</sub>

No. of threads per inch 9 Area supported by each stay 91.5" Working pressure by Rules 269

Tubes: Material Iron External diameter <sup>Plain</sup> 2 1/2" <sub>Stay</sub> 2 1/2" Thickness 3/8" <sup>8 SWG</sup> <sub>1 1/2"</sub> 1 1/2" No. of threads per inch 9

Pitch of tubes 3 3/4" x 3 5/8" Working pressure by Rules 300 Manhole compensation: Size of opening in shell plate 19 1/2" x 15 1/2" Section of compensating ring 11 3/4" x 1 7/8" No. of rivets and diameter of rivet holes 36 @ 1 3/4"

Outer row rivet pitch at ends 1 1/8" 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 <sup>Plate</sup> \_\_\_\_\_ <sub>Rivets</sub> \_\_\_\_\_

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 Sugden Manufacturers of See also special Certificate C8957

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 1.770" Are the safety valves fitted with easing gear yes Working pressure as per Rules \_\_\_\_\_ Pressure to which the safety valves are adjusted 258 lbs Hydraulic test pressure: tubes \_\_\_\_\_, castings \_\_\_\_\_ and after assembly in place 500 lbs 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*  
*Arch. H. Grierson* Manufacturer.

Dates of Survey <sup>During progress of work in shops - -</sup> \_\_\_\_\_ Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.) \_\_\_\_\_

<sup>while building</sup> <sub>During erection on board vessel - - -</sub> \_\_\_\_\_

SEE ACCOMPANYING MACHINERY REPORT.

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 boiler has been constructed under special survey, satisfactorily fitted in the vessel and their safety valves adjusted.

29/7/35

Survey Fee 2.5 £ See index Rph When applied for, \_\_\_\_\_ 10

Travelling Expenses (if any) £ \_\_\_\_\_ When received, \_\_\_\_\_ 10

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

Committee's Minute GLASGOW 30 JUL 1935

FRI. 3 JAN 1936

Assigned SEE ACCOMPANYING MACHINERY REPORT.

