

REPORT ON BOILERS.

No. 48434

Received at London Office

30 OCT 1928

Report 28-9-1928 When handed in at Local Office 4-70 1928 Port of Glasgow
 Survey held at Glasgow Date, First Survey 3-4-28 Last Survey 27-9-1928
 (Number of Visits 62) Gross Tons Net
 In the new steel S/S "BENCRACHAN"
 Built at Glasgow By whom built Hasbounell & Co. Ltd. Yard No. 413 When built 1928
 Made at Glasgow By whom made David Rowan & Co. Ltd. Engine No. 887 When made 1928
 Made at Glasgow By whom made David Rowan & Co. Ltd. Boiler No. 887 When made 1928
 Horse Power 675 Owners Bendine Steamers Ltd Port belonging to Leith

TUBULAR BOILERS MAIN, AUXILIARY, OR DONKEY.

Wrappers plates by Steel Co of Scotland
 Gitehoffmingshutte a.s. Oberhausen. Witkowski Bergbau und Eisenhütten-Gesellschaft (Letter for Record (S) ✓)
 auxiliary 1700 lbs Is forced draught fitted yes Coal or Oil fired coal
 Description of Boilers one single ended marine 100 Working Pressure 220 lbs
 Hydraulic pressure to 380 Date of test 15-8-28 No. of Certificate 18007 Can each boiler be worked separately -
 No. and Description of safety valves to each boiler 2 "High lift"
 Each set of valves per boiler { per Rule 3.025" as fitted 3.14" Pressure to which they are adjusted 225 Are they fitted with easing gear yes
 donkey boilers, state whether steam from main boilers can enter the donkey boiler -
 distance between boilers or uptakes and bunkers or woodwork 2'-3" Is oil fuel carried in the double bottom under boilers no
 distance between shell of boiler and tank top plating 2'-4" Is the bottom of the boiler insulated yes
 external dia. of boilers 13'-6" Length 11'-0" Shell plates: Material steel Tensile strength 28-32 tons
 Are the shell plates welded or flanged no Description of riveting: circ. seams { end DR inter. ✓
 Diameter of rivet holes in { circ. seams F 1 5/16" B 1 3/8" Pitch of rivets { F 3 1/2" B 3 3/8" 9 1/16"
 of strength of circ. end seams { plate F 61.6 B 64.1 rivets F 48.4 B 47.5 Percentage of strength of circ. intermediate seam { plate rivets ✓
 of strength of longitudinal joint { plate 85.8 rivets 87.4 combined 89 Working pressure of shell by Rules 221
 No. and Description of Furnaces in each Boiler Three Deighton
 Tensile strength 26-30 tons Smallest outside diameter 40 3/16"
 Thickness of plates { crown 39" bottom 64" Description of longitudinal joint welded
 Working pressure of furnace by Rules 221
 Material steel Tensile strength 26-30 tons Thickness 1 1/4" Pitch of stays 19" x 17 3/8"
 Working pressure by Rules 220
 Tensile strength { 26-30 tons Thickness { 15" 13 1/2"
 Pitch across wide water spaces 14" Working pressure { front 222 back 226
 Material steel Tensile strength 28-32 tons Depth and thickness of girder
 Length as per Rule 31 1/2" Distance apart 8 3/8" No. and pitch of stays
 Working pressure by Rules 220 Combustion chamber plates: Material steel
 Thickness: Sides 4 1/4" Back 1 1/2" Top 4 1/4" Bottom 3 1/2"
 Sides 10" x 8 3/8" Back 8 1/2" x 8 1/4" Top 8 3/8" x 10" Are stays fitted with nuts or riveted over nuts
 Front plate at bottom: Material steel Tensile strength 26-30 tons Thickness 13 1/16"
 Lower back plate: Material steel Tensile strength 26-30 tons Thickness 13 1/16"
 Are stays fitted with nuts or riveted over nuts
 Main stays: Material steel Tensile strength 28-32 tons
 At body of stay, 3 & 2 3/4 No. of threads per inch 6 Area supported by each stay 339 & 295 sq
 Over threads Screw stays: Material steel Tensile strength 26-30 tons
 pressure by Rules 231 & 222 No. of threads per inch 9 Area supported by each stay 83.7 & 68 sq
 At turned off part, 1 1/4" & 1 1/8"

Working pressure by Rules 222.224 Are the stays drilled at the outer ends no Margin stays: Diameter $\left\{ \begin{array}{l} \text{At turned off part,} \\ \text{or} \\ \text{Over threads} \end{array} \right. \frac{1}{8}''$

No. of threads per inch 9 Area supported by each stay 88.60 Working pressure by Rules 242

Tubes: Material Iron External diameter $\left\{ \begin{array}{l} \text{Plain } 3\frac{1}{4}'' \\ \text{Stay } 3\frac{1}{4}'' \end{array} \right.$ Thickness $\left\{ \begin{array}{l} \text{W.G.} \\ 5/16 \& 3/8 \end{array} \right.$ No. of threads per inch 9

Pitch of tubes 4 1/2 x 4 3/8 Working pressure by Rules 280 Manhole compensation: Size of shell plate 19 1/2 x 15 1/2 Section of compensating ring 9 1/2 x 1 1/2 No. of rivets and diameter of rivet holes 32 @

Outer row rivet pitch at ends 9 1/16 Depth of flange if manhole flanged 3 Steam Dome: Material none

Tensile strength 61A Thickness of shell 3/16 Description of longitudinal joint Plate

Diameter of rivet holes 5/8 Pitch of rivets 1 1/2 Percentage of strength of joint 80

Internal diameter 28 1/2 Working pressure by Rules 280 Thickness of crown 3/16 No. and stays 28 Inner radius of crown 12 Working pressure by Rules 280

How connected to shell by Size of doubling plate under dome 3 Diameter of rivet hole 5/8

of rivets in outer row in dome connection to shell 3

Type of Superheater none Manufacturers of $\left\{ \begin{array}{l} \text{Tubes} \\ \text{Steel castings} \end{array} \right.$

Number of elements 1 Material of tubes Iron Internal diameter and thickness of tubes 3 1/4 x 5/16

Material of headers Iron Tensile strength 61A Thickness 3/16 Can the superheater be 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 no

Area of each safety valve 1.5 Are the safety valves fitted with easing gear no Working pressure 280

Rules ASME Pressure to which the safety valves are adjusted 280 Hydraulic test no

tubes castings and after assembly in place no Are drain cocks or to free the superheater from water where necessary no

Have all the requirements of Sections 14 to 23 inclusive for boilers been complied with yes

The foregoing is a correct description
 For David Rowan & Co. Ltd.
 Arch. H. Grierson

Dates of Survey $\left\{ \begin{array}{l} \text{During progress of work in shops} \\ \text{while building} \end{array} \right. \left\{ \begin{array}{l} \text{See accompanying} \\ \text{machinery report} \end{array} \right.$

Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval) no

Total No. of visits 62

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 in accordance with the satisfactory fitted in the vessel and its safety valves adjusted under ste

A.B.
 1/10/28

Survey Fee ... £ See Machy Rpt When applied for, 192

Travelling Expenses (if any) £ See Machy Rpt When received, 192

S. Ch. Davis
 Engineer Surveyor to Lloyd's Register of

Committee's Minute GLASGOW 9 OCT 1928

Assigned See accompanying Machy report



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