

# REPORT ON BOILERS.

No. 48434

Received at London Office

30 OCT 1928

Report 28-9-1928 When handed in at Local Office 4-10-1928 Port of Glasgow  
 Survey held at Glasgow Date, First Survey 3-4-28 Last Survey 27-9-1928  
 (Number of Visits 62) Tons { Gross Net  
 in the new steel S/S "BENCRACHAN"  
 Built at Glasgow By whom built Hasbounell & Co. Ltd. Yard No. 413 When built 1928  
 Glasgow By whom made David Rowan & Co. Ltd. Engine No. 887 When made 1928  
 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.

Warrers of Steel Gutehoffnungshütte A.G. Oberhausen. Wilkowitz Bergbau und Eisenhütten-Gesellschaft (Letter for Record (S) ✓)  
 Wrappers plates by Steel Co. of Scotland in Wilkowitz  
 Auxiliary 1700 lbs Is forced draught fitted yes Coal or Oil fired coal  
 Description of Boilers one single ended marine 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  
 Internal 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 15" B 13 3/8" Pitch of rivets { F 3-4 1/2" B 3-8 3/8"  
 { long. seams 1 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 85.8 rivets 87.4 combined 89  
 of strength of longitudinal joint { plate 85.8 rivets 87.4 Working pressure of shell by Rules 221  
 { combined 89  
 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 3 3/4" bottom 6 1/4" Description of longitudinal joint welded  
 Working pressure of furnace by Rules 221  
 Stays secured DN  
 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  
 to combustion chamber tops: 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"  
 Tensile strength 26-30 tons Are stays fitted with nuts or riveted over nuts  
 Sides 10" x 8 3/8" Back 8 1/2" x 8 1/4" Top 8 3/8" x 10"  
 pressure by Rules 223 Front plate at bottom: Material steel Tensile strength 26-30 tons Thickness 13 1/2"  
 Lower back plate: Material steel Tensile strength 26-30 tons Thickness 13 1/2"  
 Are stays fitted with nuts or riveted over nuts  
 Main stays: Material steel Tensile strength 28-32 tons  
 At body of stay, 3 3/4" No. of threads per inch 6 Area supported by each stay 339 & 295 sq  
 Over threads pressure by Rules 231 & 222 Screw stays: Material steel Tensile strength 26-30 tons  
 At turned off part, 1 1/4" & 1 1/8" No. of threads per inch 9 Area supported by each stay 83.7 & 68 sq  
 Over threads



Working pressure by Rules 222.224 Are the stays drilled at the outer ends no Margin stays: Diameter { At turned off part, or Over threads 1 7/8"  
No. of threads per inch 9 Area supported by each stay 88.60" Working pressure by Rules 242  
Tubes: Material Iron External diameter { Plain 3 1/4" Thickness { 7 W.G. 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 1/2" Depth of flange if manhole flanged 3" Steam Dome: Material none  
Tensile strength 61A Thickness of shell 3/16" Description of longitudinal joint  
Diameter of rivet holes 5/8" Pitch of rivets 5/8" Percentage of strength of joint { Plate Rivets  
Internal diameter 588 Working pressure by Rules 588 Thickness of crown 5/16" No. and  
stays 588 Inner radius of crown 588 Working pressure by Rules 588  
How connected to shell 588 Size of doubling plate under dome 588 Diameter of rivet holes 588  
of rivets in outer row in dome connection to shell 588

Type of Superheater none Manufacturers of { Tubes Steel castings  
Number of elements none Material of tubes none Internal diameter and thickness of tubes none  
Material of headers none Tensile strength none Thickness none Can the superheater be  
the boiler be worked separately none Is a safety valve fitted to every part of the superheater which can be shut off from the boiler  
Area of each safety valve none Are the safety valves fitted with easing gear none Working pressure none  
Rules none Pressure to which the safety valves are adjusted none Hydraulic test none  
tubes none castings none and after assembly in place none Are drain cocks or  
to free the superheater from water where necessary none  
Have all the requirements of Sections 14 to 23 inclusive for boilers been complied with none

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

Dates of Survey { During progress of work in shops - - - See Accompanying Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.)  
while building { During erection on board vessel - - - Machy report 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  
satisfactorily fitted in the vessel and its safety valves adjusted under test

Survey Fee ... £ See Machy Rpt When applied for, 192  
Travelling Expenses (if any) £ See Machy Rpt When received, 192

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

Committee's Minute GLASGOW 9 OCT 1928

Assigned See Accompanying Machy report

