

# REPORT ON BOILERS.

No. 7940

Received at London Office MAY 1928

Date of writing Report 7.5.28 1928 When handed in at Local Office 7.5.28 1928 Port of Glasgow

No. in Survey held at Glasgow Date, First Survey 9.11.27 Last Survey 3-5-1928

on the new steel S/S "BENMOHR" (Number of Visits 54) Gross 5920 Tons Net 3751

Master \_\_\_\_\_ Built at Glasgow By whom built Charles Bonnell & Co. Ltd. Yard No. 411 When built 1928

Engines made at Glasgow By whom made David Rowan & Co. Ltd. Engine No. 879 When made 1928

Boilers made at Glasgow By whom made David Rowan & Co. Ltd. Boiler No. 879 When made 1928

Nominal Horse Power 675 Owners Ben Line Steamers Ltd. Port belonging to Self.

## MULTITUBULAR BOILERS - MAIN, AUXILIARY, ~~OR DONKEY.~~

Manufacturers of Steel Gutehoffnungshütte A.G. Oberhausen (Letter for Record 6)

Total Heating Surface of Boilers 1700 sq ft Is forced draught fitted yes Coal or Oil fired coal

No. and Description of Boilers one single ended marine Working Pressure 220

Tested by hydraulic pressure to 380 Date of test 14-3-28 No. of Certificate 17825 Can each boiler be worked separately -

Area of Firegrate in each Boiler 53.6 sq ft No. and Description of safety valves to each boiler 2 - high life

Area of each set of valves per boiler per Rule 3.0250 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 -

Smallest distance between boilers or uptakes and bunkers or woodwork 2'-5" Is oil fuel carried in the double bottom under boilers no

Smallest distance between shell of boiler and tank top plating 2'-4" Is the bottom of the boiler insulated yes

Largest internal dia. of boilers 13'-6" Length 11'-0" Shell plates: Material steel Tensile strength 28-32 tons

Thickness 1 1/32" Are the shell plates welded or flanged no Description of riveting: circ. seams end DR

long. seams DR S. TR Diameter of rivet holes in circ. seams F 1 5/16" B 1 3/8" Pitch of rivets F 3.43" B 3.83"

Percentage of strength of circ. end seams plate F 61.6 B 64.1 Percentage of strength of circ. intermediate seam plate rivets F 48.4 B 47.5

Percentage of strength of longitudinal joint plate 85.8 Working pressure of shell by Rules 220 rivets 87.4 combined 89

Thickness of butt straps outer 1" No. and Description of Furnaces in each Boiler Three Deighton inner 1 1/8" Tensile strength 26-30 tons Smallest outside diameter 40 3/16"

Material steel Description of longitudinal joint welded

Length of plain part top Thickness of plates crowns 3/32" Working pressure of furnace by Rules 221 bottom 6/64"

Dimensions of stiffening rings on furnace or c.c. bottom -

End plates in steam space: Material steel Tensile strength 26-30 tons Thickness 1 1/4" Pitch of stays 19 x 17 3/8"

How are stays secured DR Working pressure by Rules 220

Tube plates: Material front steel Tensile strength 26-30 tons Thickness 15/16" back " 13/16"

Mean pitch of stay tubes in nests 10 1/2" Pitch across wide water spaces 14" Working pressure front 222 back 226

Girders to combustion chamber tops: Material steel Tensile strength 28-32 tons Depth and thickness of girder at centre 2 @ 7 3/4 x 7/8" Length as per Rule 3 1/2" Distance apart 8 3/8" No. and pitch of stays in each 2 @ 10" Working pressure by Rules 220 Combustion chamber plates: Material steel

Tensile strength 26-30 tons Thickness: Sides 47/64" Back 1/16" Top 47/64" Bottom 24/32"

Pitch of stays to ditto: Sides 10 x 8 3/8" Back 8 1/4 x 8 1/4" Top 8 3/8 x 10" Are stays fitted with nuts or riveted over nuts

Working pressure by Rules 223 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 1/4" Are stays fitted with nuts or riveted over nuts

Working Pressure 223 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 339 & 295 sq in

Working pressure by Rules 231 & 222 Screw stays: Material steel Tensile strength 26-30 tons

Diameter At turned off part, 1 3/4" & 1 5/8" No. of threads per inch 9 Area supported by each stay 83.7 & 68 sq in



Working pressure by Rules 222 & 224 Are the stays drilled at the outer ends no Margin stays: Diameter <sup>At turned off part,</sup> 1 7/8" <sup>or</sup> <sup>Over threads</sup>

No. of threads per inch 9 Area supported by each stay 886 sq in Working pressure by Rules 240

Tubes: Material Iron External diameter <sup>Plain</sup> 3 1/4" Thickness <sup>7 WS.</sup> 5/16" & 3/8" 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 opening in shell plate 19 1/2" x 15 1/2" V Section of compensating ring 9 1/4" x 1 1/2" No. of rivets and diameter of rivet holes 32 @ 1 3/8"

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

Tensile strength 11A Thickness of shell called Description of longitudinal joint

Diameter of rivet holes 8 3/16" Pitch of rivets 1 1/2" Percentage of strength of joint <sup>Plate</sup> 100% <sup>Rivets</sup>

Internal diameter 8 5/16" Working pressure by Rules 280 Thickness of crown 1/16" No. and diameter of stays 1 Inner radius of crown called Working pressure by Rules 280

How connected to shell called Size of doubling plate under dome called Diameter of rivet holes and pitch of rivets in outer row in dome connection to shell

Type of Superheater none Manufacturers of <sup>Tubes</sup> called <sup>Steel castings</sup>

Number of elements 1 Material of tubes called Internal diameter and thickness of tubes

Material of headers called Tensile strength called Thickness called Can the superheater be shut off and the boiler be worked separately

Area of each safety valve called Are the safety valves fitted with easing gear no Working pressure as per Rules 280 Pressure to which the safety valves are adjusted 280 Hydraulic test pressure 420

tubes castings and after assembly in place called Are drain cocks or valves fitted to free the superheater from water where necessary

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. <sup>Manufacturers</sup>  
Alex. H. Grierson

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

<sup>while building</sup> <sup>During erection on board vessel - -</sup> Machy report Total No. of visits 5

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.)

The materials and workmanship are good.  
The boilers have been constructed under special survey in accordance with the Rules, satisfactorily fitted in the vessel and their safety valves adjusted under steam.

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

Travelling Expenses (if any) £ : : : When received, 192

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

Committee's Minute GLASGOW 15 MAY 1928

Assigned See accompanying Machy Report.



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