

## REPORT ON BOILERS.

No. 74651

Received at London Office 10 NOV. 1949

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

No. in Reg. Book. Survey held at Grangemouth Date, First Survey 2-12-48 Last Survey 19-9-1949

23430 on the SS RHINELAND (Number of Visits.....) Gross 1223

Master..... Built at Kiel By whom built Hawaldtwerke A/G Yard No. .... When built 1938

Engines made at Bremen By whom made Deutch Schiff u. Mach B. Engine No. 2099 When made 1938

Boilers made at Kiel By whom made Hawaldtwerke A/G Boiler No. 1520/1 When made 1938

Nominal Horse Power..... Owners Barrie Line Ltd Port belonging to Leith

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

Manufacturers of Steel..... (Letter for Record.....)

Total Heating Surface of Boilers 2906 sq. ft. + 1600 sq. ft. Is forced draught fitted Yes Coal or Oil fired Coal

No. and Description of Boilers 2 - Marine Return tube Working Pressure 225 lb.

Tested by hydraulic pressure to..... Date of test..... No. of Certificate..... Can each boiler be worked separately Yes

Area of Firegrate in each Boiler 3.15 sq. m. No. and Description of safety valves to each boiler 2 - @ 2 1/2" dia. rule 2.2

Area of each set of valves per boiler per Rule 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 1' 10" Is oil fuel carried in the double bottom under boilers No

Smallest distance between shell of boiler and tank top plating 1' 9" Is the bottom of the boiler insulated Yes

Largest internal dia. of boilers 3650 mm Length 3439 mm Shell plates: Material Steel Tensile strength.....

Thickness 33 mm Are the shell plates welded or flanged No Description of riveting: circ. seams (end DR)

long. seams TRDBS Diameter of rivet holes in (circ. seams 35 mm) Pitch of rivets (inter. 90.9 mm)

Percentage of strength of circ. end seams (plate 61.5) Percentage of strength of circ. intermediate seam (plate.....)

Percentage of strength of longitudinal joint (rivets 49.2) Working pressure of shell by Rules 235 lb./sq. in.

Percentage of strength of longitudinal joint (plate 85) (rivets 90.6) (combined 86.8)

Thickness of butt straps (outer 30 mm) No. and Description of Furnaces in each Boiler 2 - Morison

Material Steel Tensile strength..... Smallest outside diameter 1032 mm

Length of plain part (top.....) Thickness of plates (crown 16 mm) Description of longitudinal joint Welded

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

End plates in steam space: Material Steel Tensile strength..... Thickness 29 mm Pitch of stays 150 x 380 mm

How are stays secured Double nut & rivetted washer Working pressure by Rules.....

Tube plates: Material (front Steel) Tensile strength..... Thickness 29 mm

lean pitch of stay tubes in nests 220 mm Pitch across wide water spaces 365 mm Working pressure (front.....)

Orders to combustion chamber tops: Material Steel Tensile strength..... Depth and thickness of girder

centre (190 x 24) 2 Length as per Rule 750 mm Distance apart 235 mm No. and pitch of stays

each 2 - 220 mm Working pressure by Rules..... Combustion chamber plates: Material Steel

Tensile strength..... Thickness: Sides 18 mm Back 20 mm Top 18 mm Bottom 18 mm

ch of stays to ditto: Sides 200 x 220 mm Back 190 x 195 mm Top 220 x 235 mm Are stays fitted with nuts or rivetted over Yes

Working pressure by Rules..... Front plate at bottom: Material Steel Tensile strength.....

Thickness 29 mm Lower back plate: Material Steel Tensile strength..... Thickness 28 mm + 22 mm Double

ch of stays at wide water space 365 mm x 220 mm Are stays fitted with nuts or rivetted over Yes

Working pressure..... Main stays: Material Steel Tensile strength.....

meter (At body of stay 76 or 72) No. of threads per inch 6 Area supported by each stay.....

Working pressure by Rules..... Screw stays: Material Steel Tensile strength.....

meter (At turned off part 38.38 mm or 42 mm) No. of threads per inch 9 Area supported by each stay.....

Working pressure by Rules..... Are the stays drilled at the outer ends.....  $\frac{1}{2}$ ..... Margin stays: Diameter { At turned off part.....  $44.38 \frac{m}{m}$  ✓  
or.....  $48 \frac{m}{m}$  ✓  
No. of threads per inch..... 9..... Area supported by each stay..... Working pressure by Rules..... -  
Tubes: Material..... *Steel*..... External diameter { Plain.....  $83 \frac{m}{m}$  ✓  
Stay.....  $83 \frac{m}{m}$  ✓ Thickness {  $8 \frac{m}{m}$  ✓,  $8.5 \frac{m}{m}$  ✓,  $11.7 \frac{m}{m}$  ✓ No. of threads per inch..... 9  
Pitch of tubes.....  $110 \times 110 \frac{m}{m}$ ..... Working pressure by Rules..... - Manhole compensation: Size of opening in  
shell plate.....  $400 \times 500 \frac{m}{m}$  Section of compensating ring.....  $220 \times 30 \frac{m}{m}$  No. of rivets and diameter of rivet holes.....  $48 - 31 \frac{m}{m}$   
Outer row rivet pitch at ends.....  $140 \frac{m}{m}$  Depth of flange if manhole flanged.....  $100 \frac{m}{m}$  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 { Plate.....  
Rivets.....  
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 pitch  
of rivets in outer row in dome connection to shell.....

Type of Superheater..... *Smoke-tube type*..... Manufacturers of { Tubes.....  
Steel forgings.....  
Steel castings.....  
Number of elements..... *42 each Bh.* Material of tubes..... *Steel*..... Internal diameter and thickness of tubes.....  $18 \frac{m}{m} \times 2.5 \frac{m}{m}$   
Material of headers..... *Steel*..... 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.....  $\frac{1}{2}$   
Area of each safety valve.....  $1.75 \frac{sq. in.}{m}$  Are the safety valves fitted with easing gear.....  $\frac{1}{2}$  Working pressure as per  
Rules..... Pressure to which the safety valves are adjusted.....  $225 \frac{lb.}{sq. in.}$  Hydraulic test pressure:  
tubes..... forgings and castings..... and after assembly in place..... Are drain cocks or  
valves fitted to free the superheater from water where necessary.....  $\frac{1}{2}$   
*BRIT. LORAIN RULES.*

Have all the requirements of Sections 11 to 22 inclusive for boilers been complied with.....  $\frac{1}{2}$

The foregoing is a correct description,

Manufacturer.....

Dates { During progress of work in shops - - } Are the approved plans of boiler and superheater forwarded herewith.....  
of Survey while building { During erection on board vessel - - } (If not state date of approval.)  
Total No. of visits.....

Is this Boiler a duplicate of a previous case..... If so, state Vessel's name and Report No.....

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.)..... *These boilers, built under G.L. survey have now been examined throughout and found satisfactory, and the workmanship is good. The boilers are eligible to be fitted in the vessel classed with a record M.B.S. 9-49*

Survey Fee ... .. £ *See report 9.* When applied for.....19.....  
Travelling Expenses (if any) £ : : When received.....19.....

*JR Dale*

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute..... *GLASGOW - 9 NOV 1949*

Assigned..... *See Rpt. 9.*



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