

## REPORT ON BOILERS.

No. 22374.

Received at London Office

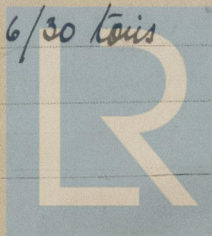
Date of writing Report 1<sup>st</sup> July 1943. When handed in at Local Office 2<sup>nd</sup> July 1943. Port of Greenock.No. in Survey held at Greenock.  
Reg. Book.Date, First Survey 29<sup>th</sup> May 1942. Last Survey 28<sup>th</sup> June 1943(Number of Visits / )  
Gross 7066.83  
Tons Net 6601.37

on the EMPIRE. SERVICE.

Built at Port Glasgow By whom built Lithgows Ltd. Yard No. 982. When built 1943  
Engines made at Greenock. By whom made Rankin & Blackmore Ltd. Engine No. 490 When made 1943  
Boilers made at Greenock. By whom made Rankin & Blackmore Ltd. Boiler No. 490 When made 1943  
Nominal Horse Power 514. Owners McIntyre & Shipping. Port belonging to Greenock.

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

Manufacturers of Steel Colvilles, Ltd. (Letter for Record S.  
Total Heating Surface of Boilers 7344 sq. ft. Is forced draught fitted Yes Coal or Oil fired Coal.  
No. and Description of Boilers 3 Cylindrical Multitubular Working Pressure 220 lbs.  
Tested by hydraulic pressure to 380 lbs. Date of test 28/12/43 No. of Certificate 2317  
Area of Firegrate in each Boiler 56.3 sq. ft. No. and Description of safety valves to each boiler 2 - Spring loaded - High Lift.  
Area of each set of valves per boiler {per Rule 7.80" 6.57 sq. ft. Pressure to which they are adjusted 220 lbs. Are they fitted with easing gear Yes  
as fitted 9.80"  
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 4'-0" Is oil fuel carried in the double bottom under boilers no.  
Smallest distance between shell of boiler and tank top plating 2'-3" Is the bottom of the boiler insulated Yes.  
Largest internal dia. of boilers 15'-0 1/16" Length 11'-6" Shell plates: Material S Tensile strength 29/33 tons  
Thickness 1 1/32" Are the shell plates welded or flanged no. Description of riveting: circ. seams {end D.R.  
inter. 4-073"  
long. seams T.R.D.B.S. Diameter of rivet holes in {circ. seams 1 1/2" Pitch of rivets {10 7/16"  
Percentage of strength of circ. end seams {plate 63 Percentage of strength of circ. intermediate seam {plate  
rivets 46.9 rivets  
Percentage of strength of longitudinal joint {plate 85.6  
rivets 85.6  
combined 88.3  
Thickness of butt straps {outer 1 1/8" No. and Description of Furnaces in each Boiler 3. Corrugated Reighton Section.  
inner 1 1/4" Tensile strength 26/30 tons. Smallest outside diameter 3'-9 3/8"  
Material S. Thickness of plates {crown 1 1/16" Description of longitudinal joint Weld.  
bottom 1 1/16"  
Dimensions of stiffening rings on furnace or c.c. bottom /  
End plates in steam space: Material S. Tensile strength 26/30 tons. Thickness 1 1/32" Pitch of stays 19 1/2" x 19 1/2"  
How are stays secured Reule nuts and washers.  
Tube plates: Material {front S Tensile strength 26/30 tons. Thickness {1"  
back S 27/32"  
Mean pitch of stay tubes in nests 10 1/2" Pitch across wide water spaces 14"  
Girders to combustion chamber tops: Material S. Tensile strength 29/33 tons Depth and thickness of girder  
at centre 10 1/4" x 1 5/8" Length as per Rule 2'-9 13/32" Distance apart 10 1/2" No. and pitch of stays  
in each 3 - 8 1/2"  
Combustion chamber plates: Material S  
Tensile strength 26/30 tons Thickness: Sides 25/32" Back 3/4" Top 25/32" Bottom 7/8"  
Pitch of stays to ditto: Sides 8 1/2" x 10 1/2" Back 9 7/8" x 9" Top 8 1/2" x 10 1/2" Are stays fitted with nuts or riveted over Nuts.  
Front plate at bottom: Material S. Tensile strength 26/30 tons  
Thickness 1" Lower back plate: Material S. Tensile strength 26/30 tons Thickness 15/16"  
Pitch of stays at wide water space 14 1/4" x 9" Are stays fitted with nuts or riveted over Nuts.  
Main stays: Material S. Tensile strength 28/32 tons.  
Diameter {At body of stay, 3 3/8" No. of threads per inch 6.  
or Over threads  
Screw stays: Material S. Tensile strength 26/30 tons  
Diameter {At turned off part, 1 7/8" No. of threads per inch 9.  
or Over threads



© 2020

Lloyd's Register  
Foundation



Are the stays drilled at the outer ends ho. Margin stays: Diameter { At turned off part, 2" or Over threads

No. of threads per inch 9.

Tubes: Material W. I. External diameter { Plain 3" Stay Thickness { 8. W. G. 5/16" 3/8" 7/16" No. of threads per inch 9.

Pitch of tubes 4 1/8" x 4 1/4" Manhole compensation: Size of opening in shell plate In end plate Section of compensating ring No. of rivets and diameter of rivet holes

Outer row rivet pitch at ends Depth of flange if manhole flanged Steam Dome: Material

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 Thickness of crown No. and diameter of stays Inner radius of crown

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 N.E.M. Smoke tube Manufacturers of { Tubes Talkot. Steel Headers Apply & Juddingham Steel Co. Steel castings

Number of elements 177 Material of tubes S.O. steel Internal diameter and thickness of tubes 1 5/8" x 2 1/2"

Material of headers Forged steel Tensile strength 26/30 tons Thickness 1 1/8" Can the superheater be shut off and the boiler be worked separately Yes. 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 3.14 sq" Are the safety valves fitted with easing gear Yes

Pressure to which the safety valves are adjusted 220 lbs. Hydraulic test pressure: tubes 1500 lbs/sq" forgings and castings 660 lbs. and after assembly in place 550 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,  
James Smith Manufacturer.

Dates of Survey { During progress of work in shops - - } while building { During erection on board vessel - - }

SEE MACHINERY REPORT.

Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.)

Total No. of visits

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

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

These boilers have been built under Special Survey in accordance with the rules and the approved plans. The materials and workmanship are good. For recommendation please see machinery report.

Survey Fee ... Changed as When applied for, 19

Travelling Expenses (if any) Machinery Report When received, 19

M. Caldwell  
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute GLASGOW 6 JUL 1943

Assigned



© 2020

Lloyd's Register Foundation