

REPORT ON BOILERS.

No. 9341

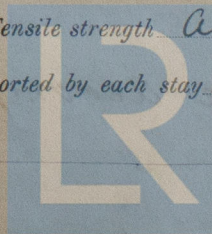
10 DEC 1942

Date of writing Report 30th Nov 1942. When handed in at Local Office 3rd Dec 1942. Port of Dundee
 Received at London Office
 No. in Reg. Book. Survey held at Dundee. Date, First Survey 23rd October Last Survey 30th Nov 1942.
 48302 on the s/s "MARISO" ex "Bitterfeld" (Number of Visits 11.) Gross 4659 Tons Net 4482
 Master Built at Kiel By whom built Fri. Krupp, Akt. Ges. Yard No. 504 When built 1930.
 Engines made at Hamburg By whom made Blohm & Voss Engine No. When made 1923 Refitted 1930.
 Boilers made at Kiel By whom made Fri. Krupp, Germania Werft. Boiler No. When made 1930.
 Nominal Horse Power See Mach? Report. Owners Netherland Government. Port belonging to Willemstad

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel (Letter for Record (S))
 Total Heating Surface of Boilers 5406 ft² per boiler Is forced draught fitted Yes. Coal or Oil fired Coal.
 No. and Description of Boilers Two Double Ended Multitubular Working Pressure 213 lbs./sq. in.
 Tested by hydraulic pressure to 275 lbs. Date of test 10-11-42 No. of Certificate 17-11-42 Can each boiler be worked separately Yes.
 Area of Firegrate in each Boiler 129 ft² No. and Description of safety valves to each boiler Four Ordinary Spring-loaded.
 Area of each set of valves per boiler {per Rule 28.4 sq. in. as fitted 53.4 sq. in. Pressure to which they are adjusted 215 lbs. Are they fitted with easing gear Yes.
 In case of donkey boilers, state whether steam from main boilers can enter the donkey boiler Yes.
 Smallest distance between boilers or uptakes and bunkers or woodwork 12" 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 No.
 Largest internal dia. of boilers 4660 mm Length 6470 mm Shell plates: Material Steel Tensile strength Assumed 28/32
 Thickness 38 mm Are the shell plates welded or flanged No. Description of riveting: circ. seams {end D.R. Lap. inter. J.R. Lap.
 Long. seams T.R. Double Butt Strap Diameter of rivet holes in {circ. seams 38 mm long. seams 35 mm Pitch of rivets {115 mm 254 mm
 Percentage of strength of circ. end seams {plate 67.2% rivets 42.45% Percentage of strength of circ. intermediate seam {plate 64.5% rivets 63.0%
 Percentage of strength of longitudinal joint {plate 82.04% rivets 90.3% combined 88.2% Working pressure of shell by Rules 216 lbs./sq. in.
 Thickness of butt straps {outer 30 mm inner 34 mm No. and Description of Furnaces in each Boiler Six - Morrison Section
 Material Steel Tensile strength Assumed 26/30 tons Smallest outside diameter 1160 mm.
 Length of plain part {top bottom Thickness of plates {crown 18 mm bottom Description of longitudinal joint Weld.
 Dimensions of stiffening rings on furnace or c.c. bottom Working pressure of furnace by Rules 230 lbs./sq. in.
 End plates in steam space: Material Steel Tensile strength Assumed 26/30 tons Thickness 28 mm Pitch of stays 380 mm x 380 mm.
 How are stays secured Double Nuts & Riveted Washers 22 mm thick x 240 mm dia. Working pressure by Rules 288 lbs./sq. in.
 Tube plates: Material {front back Steel Tensile strength Assumed 26/30 tons Thickness {28 mm 34 mm
 Lean pitch of stay tubes in nests 220 mm x 220 mm Pitch across wide water spaces 360 mm Working pressure {front 221 lbs. back 225 lbs. (Compression)
 Orders to combustion chamber tops: Material Steel Tensile strength Assumed 28/32 tons Depth and thickness of girder
 centre 320 mm x 25 mm x 2 Length as per Rule 1346 mm Distance apart 190 mm No. and pitch of stays
 each 5 - 200 mm Working pressure by Rules 213 lbs./sq. in. Combustion chamber plates: Material Steel
 Tensile strength Assumed 26/30 tons Thickness: Sides 20 mm Back — Top 20 mm Bottom 25 mm
 Pitch of stays to ditto: Sides 200 mm x 190 mm Back — Top 200 mm x 190 mm Are stays fitted with nuts or riveted over Nuts on side Riveted on tops.
 Working pressure by Rules 243 lbs./sq. in. Front plates at bottom: Material Steel Tensile strength Assumed 26/30 tons
 Thickness 25 mm Lower back plate: Material Tensile strength Thickness
 Pitch of stays at wide water space Are stays fitted with nuts or riveted over
 Working Pressure 247 lbs./sq. in. Main stays: Material Steel Tensile strength Assumed 26/32 tons
 Diameter {At body of stay, 40 mm No. of threads per inch 11 Area supported by each stay 380 mm x 380 mm.
 Over threads 2 1/2" B.S.P. Std.
 Working pressure by Rules 293 lbs./sq. in. Screw stays: Material Steel Tensile strength Assumed 26/30 tons
 Diameter {At turned off part, 1 1/4" B.S.P. THD. No. of threads per inch 11 Area supported by each stay 200 mm x 190 mm

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Working pressure by Rules 282 lbs/sq. in. Are the stays drilled at the outer ends No Margin stays: Diameter { At turned off part, or Over threads }
No. of threads per inch ✓ Area supported by each stay ✓ Working pressure by Rules ✓
Tubes: Material Steel External diameter { Plain 83 mm Stay 83 mm Thickness { 4 mm 9 mm No. of threads per inch 11
Pitch of tubes 110 mm Working pressure by Rules 245 lbs/sq. in. Manhole compensation: Size of opening in shell plate 530 mm X 420 mm Section of compensating ring 630 mm X 38 mm No. of rivets and diameter of rivet holes 48 - 38 mm
Outer row rivet pitch at ends 164.5 mm Depth of flange if manhole flanged 95 mm 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 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 Schmidt smoke-box type Manufacturers of { Tubes Steel forgings ✓ Steel castings }
Number of elements One to each tube Material of tubes Steel Internal diameter and thickness of tubes ✓
Material of headers Steel Tensile strength ✓ Thickness ✓ 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 4.64 sq. in. Are the safety valves fitted with casing gear hand lever only Working pressure as per Rules ✓ Pressure to which the safety valves are adjusted 215 lbs Hydraulic test pressure: tubes ✓ forgings and castings ✓ and after assembly in place 245 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 ✓

The foregoing is a correct description, ✓ Manufacturer.

Dates of Survey { During progress of work in shops - - } ✓ Are the approved plans of boiler and superheater forwarded herewith See under. (If not state date of approval.)
while building { During erection on board vessel - - - } ✓ Total No. of visits See Inch Report No 9339.

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.)

No plan of the boilers was available on board, but the dimensions & scantlings were taken from the boilers themselves. A plan was then drawn from which a blue print was obtained, & this print is forwarded herewith.
The Boilers were examined throughout, & were hydraulically tested to 245 lbs per sq. inch, & they were found tight & sound at that pressure.
For particulars of repairs carried out see Rpt 9 - Dundee Report No 9342, also for recommendation for class.

Survey Fee ... £ ... When applied for, 19
Travelling Expenses (if any) £ ... When received, 19

John Houston
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute GLASGOW 8 DEC 1942

Assigned See accompanying report