

REPORT ON BOILERS.

No. 9284.

Received at London Office 12 FEB 1942

Date of writing Report 29th Jan 1942. When handed in at Local Office 5th Feb 1942 Port of Dundee

No. in Survey held at Dundee Date, First Survey 16th April Last Survey 1st Sept 1941
 g. Book. (Number of Visits 17) Gross 3313.
 538 on the R.F.A. "GREEN RANGER" Tons Net 1606.
 Built at Dundee By whom built Baledon S. B. & E. Co. Ltd No. 391 When built 1942.
 Engines made at Sunderland By whom made Wm Doxford & Sons Ltd Engine No. 219 When made 1942
 Boilers made at Dundee By whom made Baledon S. B. & E. Co. Ltd Boiler No. 591 When made 1942
 Nominal Horse Power of Boiler 112 Owners The Admiralty Port belonging to London

MULTITUBULAR BOILERS MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel Bolvoilles Ltd (Letter for Record (3))
 Total Heating Surface of Boilers 1675 ft² Is forced draught fitted Yes Coal or Oil fired oil
 No. and Description of Boilers One Single-ended multitubular Working Pressure 150 lbs.
 Tested by hydraulic pressure to 275 lbs. Date of test 1-9-41 No. of Certificate 1043 Can each boiler be worked separately yes
 Area of Firegrate in each Boiler Oil fired No. and Description of safety valves to each boiler Double High Lift
 Area of each set of valves per boiler per Rule 12-6" Old? Pressure to which they are adjusted 155 lbs 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 Boilers in 'tw deck Is oil fuel carried in the double bottom under boilers ✓
 Smallest distance between shell of boiler and tank top plating 1'-8" to Water Ballast Tank top Is the bottom of the boiler insulated yes
 Largest internal dia. of boilers 11'-10³/₈" Length 11'-6" Shell plates: Material Steel Tensile strength 29/33 tons
 Thickness 13/16" Are the shell plates welded or flanged No Description of riveting: circ. seams end D.R. Lap.
 long. seams I.R. Double Butt Strap Diameter of rivet holes in circ. seams 1" dia. Pitch of rivets 3-278"
 Percentage of strength of circ. end seams plate 69% rivets 46.7% Percentage of strength of circ. intermediate seam plate rivets ✓
 Percentage of strength of longitudinal joint plate 86.2% rivets 86.6% Working pressure of shell by Rules 153 lbs.
 Thickness of butt straps outer 3/8" inner 3/4" No. and Description of Furnaces in each Boiler Two Corrugated-Deighton Section.
 Material Steel Tensile strength 26/30 tons Smallest outside diameter 3'-11 1/2"
 Length of plain part top 9 1/4" Thickness of plates crown 15/32" Description of longitudinal joint Weld
 Dimensions of stiffening rings on furnace or c.c. bottom None Working pressure of furnace by Rules 152 lbs.
 End plates in steam space: Material Steel Tensile strength 26/30 tons Thickness 61/64" Pitch of stays 17' x 16"
 How are stays secured Double Nuts & Washers Working pressure by Rules 153 lbs.
 Tube plates: Material front back Steel Tensile strength 26/30 tons Thickness 7/8" 13/16"
 Mean pitch of stay tubes in nests 9.4" Pitch across wide water spaces 14" Working pressure front 151 lbs. back 268 lbs.
 Girders to combustion chamber tops: Material Steel Tensile strength 28/32 tons Depth and thickness of girder
 at centre 8 1/4" x (2 x 7/8") Length as per Rule 30.7" Distance apart 9" No. and pitch of stays
 in each 2- 9 3/8" Working pressure by Rules 171 lbs. Combustion chamber plates: Material Steel
 Tensile strength 26/30 tons Thickness: Sides 5/8" Back 5/8" Top 5/8" Bottom 5/8"
 Pitch of stays to ditto: Sides 9 3/8" x 9" Back 9 3/8" x 8 3/4" Top 9 3/8" x 9" Are stays fitted with nuts or riveted over Nuts
 Working pressure by Rules 164 lbs. Front plate at bottom: Material Steel Tensile strength 26/30 tons
 Thickness 7/8" Lower back plate: Material Steel Tensile strength 26/30 tons Thickness 3/4"
 Pitch of stays at wide water space 13 1/2" x 9 3/8" Are stays fitted with nuts or riveted over Nuts
 Working Pressure 166 lbs. Main stays: Material Steel Tensile strength 28/32 tons
 Diameter At body of stay, 2 1/4" No. of threads per inch 6 Area supported by each stay 272 in²
 Over threads 2 1/2" Working pressure by Rules 157 lbs. Screw stays: Material Steel Tensile strength 26/30 tons
 Diameter At turned off part, 1 5/8" No. of threads per inch 9 Area supported by each stay 82 in²
 Over threads

Working pressure by Rules 183 lbs. Are the stays drilled at the outer ends No Margin stays: Diameter { At turned off part, or Over threads 1 3/4" }
No. of threads per inch 9 Area supported by each stay 126 sq. in. Working pressure by Rules 180 lbs.
Tubes: Material Steel External diameter { Plain 2 3/4" Stay 2 3/4" } Thickness { 8 W.G. 5/16" } No. of threads per inch 9
Pitch of tubes 3 3/4" Working pressure by Rules 165 lbs. Manhole compensation: Size of opening
shell plate 20" X 16" Section of compensating ring 9 1/4" X 1" No. of rivets and diameter of rivet holes 40 - 1" dia.
Outer row rivet pitch at ends 7" Depth of flange if manhole flanged 3" 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 none Thickness of crown No. and diameter
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 Manufacturers of { Tubes Steel forgings Steel castings }
Number of elements Material of tubes Internal diameter and thickness of tubes
Material of headers Tensile strength Thickness none Can the superheater be shut off and
the boiler be worked separately Is a safety valve fitted to every part of the superheater which can be shut off from the boiler
Area of each safety valve Are the safety valves fitted with easing gear Working pressure as per
Rules Pressure to which the safety valves are adjusted Hydraulic test pressure
tubes forgings and castings and after assembly in place Are drain cocks
valves fitted to free the superheater from water where necessary

Have all the requirements of Sections 14 to 22 inclusive for boilers been complied with yes FOR AND ON BEHALF OF
THE CALEDON SHIPBUILDING & ENGINEERING CO. LTD.
The foregoing is a correct description,
Henry Main Manufacturing Director

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

Is this Boiler a duplicate of a previous case yes If so, state Vessel's name and Report No. Gold Ranger Rpt No 9239

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

This Boiler has been constructed under Special Survey in accordance with the Rules & the approved plan. The materials & workmanship are good, & the boiler was found tight & sound under hydraulic pressure.

It has been efficiently fitted on board, & its safety valves have been adjusted under steam for the working pressure of 150 lbs per sq. in. In my opinion it is eligible to be classed in the Register Book with the record of D.B.S. 1-42.

Survey Fee ... £ 11 : 4 : 0 } When applied for See Mach^y Report^y
Travelling Expenses (if any) £ : : } When received, 19

Committee's Minute GLASGOW 10 FEB 1942 AM

Assigned SEE ACCOMPANYING MACHINERY REPORT

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