

REPORT ON BOILERS

No. 81827

13 MAY 1954

Received at London Office.....

Date of writing Report 4.5.1954 When handed in at Local Office 4.5.1954 Port of GLASGOW
 No. in Book 60 Survey held at Glasgow Date, First Survey See accompanying machinery report Last Survey 19
 on the M.V. "PACIFIC STAR" (Number of Visits.....) Tons {Gross 11217.88.
 Net 6328.49.
 Built at PORT GLASGOW By whom built W. HAMILTON & CO. LTD. Yard No. 492 When built 1954
 Engines made at GLASGOW By whom made DAVID ROWAN & CO. LTD. Engine No. 1239 When made 1954
 Boilers made at GLASGOW By whom made DAVID ROWAN & CO. LTD. Boiler No. 1239 When made 1954
 As per Rule Owners BLUE STAR. Port belonging to

MULTITUBULAR BOILERS MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel Colvilles Ltd.
 Total Heating Surface of Boilers 5010 sq. ft. ✓ Of Superheaters —
 Total for Register Book 5010 sq. ft. ✓ Is forced draught fitted Yes Coal or Oil fired Oil
 No. and Description of Boilers 2 S.E. Cylindrical Multitubular Working Pressure 180 lbs/sq. in. ✓
 Tested by hydraulic pressure to 320 lbs/sq. in. ✓ Date of test S. 17.12.53 No. of Certificate S. 24035 Can each boiler be worked separately Yes ✓
 Area of Firegrate in each Boiler No. and Description of safety valves to each boiler One 2½" Double spring L.H.L.
 Area of each set of valves per boiler {per Rule 4.0125 sq. in. 8.05 ✓
 as fitted 4.908 sq. in. 9.816 ✓ Pressure to which they are adjusted 180 lbs/sq. in. ✓ 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 — Is oil fuel carried in the double bottom under boilers —
 Smallest distance between shell of boiler and tank top plating On Platform Is the bottom of the boiler insulated Yes
 Largest internal dia. of boilers 14' 0" ✓ Length 12' 0" Shell plates: Material Steel ✓ Tensile strength 29/33 Tons ✓
 Fusion welded, state name of welding Firm — Have all the requirements of the Rules for Class 1 vessels
 Thickness 1½" ✓ Are the shell plates welded or flanged No Description of riveting: circ. seams {end D.R. ✓
 inter —
 T.R.D.B.S. ✓ Diameter of rivet holes in {circ. seams 1 3/16" ✓
 long. seams 1 3/16" ✓ Pitch of rivets {3.2" ✓
 8 5/16" ✓
 Percentage of strength of circ. end seams {plate 62.91
 rivets 48.81 Percentage of strength of circ. intermediate seam {plate —
 rivets —
 Percentage of strength of longitudinal joint {plate 85.9
 rivets 87.98
 combined 89.04
 Thickness of butt straps {outer 27/32" ✓
 inner 31/32" ✓ No. and Description of Furnaces in each Boiler 3 Deighton Section ✓
 Material Steel Tensile strength 26/30 Tons ✓ Smallest outside diameter 3' 5 1/32" ✓
 Length of plain part {top 6 3/4" ✓
 bottom 33/64" ✓ Description of longitudinal joint Welded. ✓
 Dimensions of stiffening rings on furnace or c.c. bottom —
 Plates in steam space: Material Steel ✓ Tensile strength 26/30 Tons ✓ Thickness 1½" ✓ Pitch of stays 19" x 17" ✓
 How are stays secured Double Nuts ✓
 Stays: Material {front Steel ✓
 back Steel ✓ Tensile strength {26/30 Tons ✓
 Thickness {27/32" ✓
 1 1/16" ✓
 Pitch of stay tubes in nests 9 1/4" ✓ Pitch across wide water spaces 13 1/2" x 7 1/4" ✓
 Doors to combustion chamber tops: Material Steel ✓ Tensile strength 28/32 Tons ✓ Depth and thickness of girder
 centre 2 @ 8 1/8" x 7/8" ✓ Length as per Rule 2' 8 1/16" ✓ Distance apart 9 1/8" ✓ No. and pitch of stays
 each 3 @ 8" ✓ Combustion chamber plates: Material Steel ✓
 Tensile strength 26/30 Tons ✓ Thickness: Sides 1 1/16" ✓ Back 5/8" ✓ Top 1 1/16" ✓ Bottom 1 1/16" ✓
 Pitch of stays to ditto: Sides 10 1/2" x 8 1/4" ✓ Back 9" x 8" ✓ Top 9 1/8" x 8" ✓ Are stays fitted with nuts or riveted over Nuts ✓
 Bottom plate at bottom: Material Steel ✓ Tensile strength 26/30 Tons ✓
 Thickness 27/32" ✓ Lower back plate: Material Steel ✓ Tensile strength 26/30 Tons ✓ Thickness 3/4" ✓
 Pitch of stays at wide water space 13 1/2" x 8" ✓ Are stays fitted with nuts or riveted over Nuts ✓
 Stays in stays: Material Steel ✓ Tensile strength 28/32 Tons ✓
 Ship meter {At body of stay 6 @ 2 3/4" ✓ 4 @ 2 1/2" ✓
 or 3" 2 3/4" No. of threads per inch 6 ✓
 Over threads —
 New stays: Material Steel ✓ Tensile strength 26/30 Tons ✓
 meter {At turned off part —
 or 1 5/8", 1 3/4", 1 7/8", 2" No. of threads per inch 9 ✓
 Over threads —

Are the stays drilled at the outer ends... No ✓ Margin stays: Diameter { At turned off part, or Over threads. 1 3/4", 1 7/8" ✓ 2" Corner ✓

No. of threads per inch... 9 ✓ Tubes: Material... Steel ✓ External diameter { Plain... 2 1/2" ✓ Stay... 2 1/2" ✓ Thickness { 9 w.g. ✓ 5/16", 3/8", 7/16" No. of threads per inch... 9 ✓

Pitch of tubes... 3 5/8" x 3 3/4" ✓ Section of compensating ring... 17 1/2" x 1 1/8" ✓ No. of rivets and diameter of rivet holes... 36 @ 1 3/16" ✓

Manhole compensation: Size of opening in shell plate... 19 1/2" x 15 1/2" ✓ Outer row rivet pitch at ends... 7 5/8" ✓ 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... 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... 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... 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... Pressure to which the safety valves are adjusted... 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... Have all the requirements of Sections 14 to 22 inclusive for boilers been complied with... Yes ✓

The foregoing is a correct description,
R. H. Donald for David Rogers & Co. Ltd. Manufacturer.

Dates of Survey while building { During progress of work in shops - - } { During erection on board vessel - - - } *see accompanying 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... No If so, state Vessel's name and Report No...

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.)
The two boilers were constructed, and efficiently installed on board the Vessel, under Special Survey and in accordance with the Rules and approved plans; the materials and workmanship being good
The Safety Valves were adjusted, accumulation tests carried out and the boilers tested under full working conditions and found satisfactory.
The boilers are in my opinion eligible to be classed in the Register Book with the Main machinery.

4/5/54
RSJ

Survey Fee ... £ 78 : 0 : 0 When applied for... 11 MAY 1954
Travelling Expenses (if any) £ : : When received...

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

Committee's Minute... GLASGOW 11 MAY 1954
Assigned... OFF ACCOMPANYING MACHINERY REPORT