

REPORT ON BOILERS.

No. 60460

Received at London Office JAN 11 1939

Date of writing Report 10 When handed in at Local Office 9:1:1939 Port of Glasgow

No. in Survey held at Reg. Book. Glasgow Date, First Survey 30:11:37 Last Survey 9-1-1939

on the M/V "SURAT" (Number of Visits ✓) Tons { Gross 5528 Net 3253

Master Built at Glasgow By whom built Alex Stephen & Sons Ltd Yard No. 561 When built 1939

Engines made at Glasgow By whom made Barclay Curle & Co Ltd Engine No. EW.116 When made 1939.

Boilers made at Glasgow By whom made Alex Stephen & Sons Ltd Boiler No. 561 When made 1939.

Nominal Horse Power Owners P & O S N C O Port belonging to London

MULTITUBULAR BOILERS MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel Steel Co of Scotland Ltd (Letter for Record S ✓)

Total Heating Surface of Boilers 1720 sq. ft. Viny. oil fired 745. E.H. 975 0" Is forced draught fitted no Coal or Oil fired oil ✓

No. and Description of Boilers one composite Working Pressure 120 ✓

Tested by hydraulic pressure to 230 Date of test 1-7-38 No. of Certificate 20217 Can each boiler be worked separately yes

Area of Firegrate in each Boiler - No. and Description of safety valves to each boiler Two. Improved high lift ✓

Area of each set of valves per boiler { per Rule 9.55 0" as fitted 7.96 0" 9.8 0" Pressure to which they are adjusted 120 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 6'0" Is oil fuel carried in the double bottom under boilers no tank ✓

Smallest distance between shell of boiler and tank top plating no tank Is the bottom of the boiler insulated yes ✓

Largest internal dia. of boilers 11'0" Length 11'0" Shell plates: Material steel Tensile strength 29-33 tons ✓

Thickness 21/32 Are the shell plates welded or flanged no Description of riveting: circ. seams { end W.R. lap 7/8" 15/16" 37/8" inter. - as fitted 7/8" Pitch of rivets { 47/8" ✓

long. seams W.R. Diameter of rivet holes in { circ. seams 7/8" 15/16" 37/8" long. seams 7/8" Pitch of rivets { 47/8" ✓

Percentage of strength of circ. end seams { plate 75.6 rivets 43.0 Percentage of strength of circ. intermediate seam { plate - rivets -

Percentage of strength of longitudinal joint { plate 81.0 rivets 88.4 combined 91.8 Working pressure of shell by Rules 134

Thickness of butt straps { outer 9/16" inner 11/16" No. and Description of Furnaces in each Boiler 1 Deighton ✓

Material S Tensile strength 26-30 tons Smallest outside diameter 41 7/8" ✓

Length of plain part { top - bottom - Thickness of plates { crown 3/8" bottom 3/8" Description of longitudinal joint welded ✓

Dimensions of stiffening rings on furnace or c.c. bottom - Working pressure of furnace by Rules 127

End plates in steam space: Material S Tensile strength 26-30 tons Thickness 55/64" Pitch of stays 17" x 15" ✓

How are stays secured 10 nuts Working pressure by Rules 120

Tube plates: Material { front S back S Tensile strength { 26-30 tons Thickness { 55/64" 4/16" ✓

Mean pitch of stay tubes in nests 11" Solid stay 10.06" Pitch across wide water spaces 13 3/8" Working pressure { front 820 back 138

Girders to combustion chamber tops: Material S Tensile strength 29-33 tons Depth and thickness of girder at centre 7 3/4" x 1 1/8" Length as per Rule 2'-7 33/32" Distance apart 1'0" No. and pitch of stays in each 2 @ 10" Working pressure by Rules 121 Combustion chamber plates: Material S

Tensile strength 26-30 tons Thickness: Sides 19/32 Back 19/32 Top 19/32 Bottom 19/32 ✓

Pitch of stays to ditto: Sides 10" x 9 3/4" Back 10 1/4" x 9 1/2" Top 10" x 10" Are stays fitted with nuts or riveted over nuts ✓

Working pressure by Rules 123 Front plate at bottom: Material S Tensile strength 26-30 tons

Thickness 55/64 Lower back plate: Material S Tensile strength 26-30 tons Thickness 55/64" ✓

Pitch of stays at wide water space 13 3/8" Are stays fitted with nuts or riveted over nuts ✓

Working Pressure 195 Main stays: Material S Tensile strength 28-32 tons

Diameter { At body of stay, or Over threads 2 1/4" No. of threads per inch 6 Area supported by each stay 255 sq" ✓

Working pressure by Rules 141 Screw stays: Material S Tensile strength 26-30 tons

Diameter { At turned off part, or Over threads 1 1/2" No. of threads per inch 9 Area supported by each stay 100 sq" ✓

Working pressure by Rules 178 Are the stays drilled at the outer ends no Margin stays: Diameter ^{At turned off part,} 1 7/8" ^{or} ^{Over threads}

No. of threads per inch 9 Area supported by each stay 1060" Working pressure by Rules 143

Tubes: Material S External diameter ^{Plain} 3" & 1 3/4" Thickness ^{10WS, 11WS} 3/8 5/16 No. of threads per inch 9

Pitch of tubes 4 1/4" x 4 1/8" & 2 3/4" x 2 3/4" Working pressure by Rules 140 Manhole compensation: Size of opening in shell plate 20 1/2" x 16 1/2" Section of compensating ring 23" x 3 1/4" No. of rivets and diameter of rivet holes 40 @ 7/8"

Outer row rivet pitch at ends 5 7/16" Depth of flange if manhole flanged 3" 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 _____

How connected to shell _____ Inner radius of crown _____ Working pressure by Rules _____

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 none 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 _____ 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 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

FOR
ALEXANDER STEPHEN & SONS, LIMITED,
The foregoing is a correct description.
A. M. Christie
Manufacturer.

Dates of Survey ^{During progress of work in shops - -} _____ Are the approved plans of boiler and superheater forwarded herewith yes ^(If not state date of approval.)

SEE ACCOMPANYING MACHINERY REPORT.

^{while building} ^{During erection on board vessel - - -} _____ 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 materials and workmanship are good.
The boiler has been constructed under special survey, satisfactorily fitted in the vessel and its safety valves adjusted under steam.

Survey Fee £ 8 : 18 : } When applied for, 10/11 1939.

Travelling Expenses (if any) £ : : } When received, 17.2 1939/20/2

Sh. Davis
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute **GLASGOW 10 JAN 1939**

Assigned **SEE ACCOMPANYING MACHINERY REPORT.**

