

REPORT ON BOILERS.

No. 60460

Received at London Office JAN 11 1939

Date of writing Report

19

When made in at Local Office

9:1:10³⁹

Port of

Glasgow

No. in Reg. Book. Survey held at

Glasgow

Date, First Survey

30:11:37

Last Survey

9-1-1939

on the

M/V "SURAT"

(Number of Visits)

Gross

5529

Net

3253

Master

Built at

Glasgow

By whom built

Alex Stephen & Sons Ltd

Yard No.

561

When built 1938

Engines made at

Glasgow

By whom made

B Barclay Curle & Co Ltd

Engine No.

EW. 116

When made 1938

Boilers made at

Glasgow

By whom made

Alex Stephen & Sons Ltd

Boiler No.

561

When made 1938

Nominal Horse Power

688

Owners

P & O S.N.C.

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

2817 sq ft

Is forced draught fitted

no

Coal or Oil fired

oil

No. and Description of Boilers

One single ended return tube

Working Pressure

120 lbs

Tested by hydraulic pressure to

230

Date of test

1-7-38

No. of Certificate

20216

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 15.6 sq ft

as fitted 16.59 sq ft

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

yes

Smallest distance between shell of boiler and tank top plating

2-0"

Is the bottom of the boiler insulated

yes

Largest internal dia. of boilers

15-6"

Length

12-0"

Shell plates: Material

S

Tensile strength

29-33 tons

Thickness

27/32"

Are the shell plates welded or flanged

no

Description of riveting: circ. seams

end DR lap

long. seams

DRS TR

Diameter of rivet holes in

circ. seams 15/16"

Pitch of rivets

3 1/16"

inter. 6 1/16"

Percentage of strength of circ. end seams

plate 69.4

rivets 42.4

Percentage of strength of circ. intermediate seam

plate

Percentage of strength of longitudinal joint

plate 85.9

rivets 90.3

combined 84.3

Working pressure of shell by Rules

122

Thickness of butt straps

outer 2 1/32"

inner 25/32"

No. and Description of Furnaces in each Boiler

3 Weighton

Material

S

Tensile strength

26-30 tons

Smallest outside diameter

45 7/16"

Length of plain part

top

Thickness of plates

crowd 13/32"

bottom 13/32"

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

1 3/32"

Pitch of stays 23 1/2 x 21"

How are stays secured

DN

Working pressure by Rules

125

Tube plates: Material

front S

back S

Tensile strength

26-30 tons

Thickness

3/4" 23/32"

Mean pitch of stay tubes in nests

11.94"

Pitch across wide water spaces

14 1/2"

Working pressure

front 141

back 129

Girders to combustion chamber tops: Material

S

Tensile strength

29-33 tons

Depth and thickness of girder

at centre

8 1/2" x 1 3/8"

Length as per Rule

35 1/16"

Distance apart

10"

No. and pitch of stays

in each

3 @ 8 1/2"

Working pressure by Rules

125

Combustion chamber plates: Material

S

Tensile strength

26-30 tons

Thickness: Sides

9/16"

Back

19/32"

Top

9/16"

Bottom

9/16"

Pitch of stays to ditto: Sides

10" x 8 1/2"

Back

9 3/4" x 9 1/2"

Top

10" x 8 1/2"

Are stays fitted with nuts or riveted over

nuts

Working pressure by Rules

126

Front plate at bottom: Material

S

Tensile strength

26-30 tons

Thickness

3/4"

Lower back plate: Material

S

Tensile strength

26-30 tons

Thickness

3/4"

Pitch of stays at wide water space

14 1/2"

Are stays fitted with nuts or riveted over

nuts

Working Pressure

124

Main stays: Material

S

Tensile strength

28-32 tons

Diameter

At body of stay, or Over threads

2 3/4"

No. of threads per inch

6

Area supported by each stay

4410"

Working pressure by Rules

125

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

9250"



Working pressure by Rules 130 Are the stays drilled at the outer ends no Margin stays: Diameter { At turned off part. or Over threads 1 7/8" & 1 7/8"

No. of threads per inch 9 Area supported by each stay 1150" Working pressure by Rules 132

Tubes: Material Steel External diameter { Plain 3 1/2" Stay 3 1/2" Thickness { 10 W.S. 1/4 & 5/16" No. of threads per inch 9

Pitch of tubes 4 5/8" x 4 5/8" Working pressure by Rules 130 Manhole compensation: Size of opening in shell plate 20 1/2" x 16 1/2" Section of compensating ring 25 1/2" x 7/8" No. of rivets and diameter of rivet holes 36 @ 1 7/8"

Outer row rivet pitch at ends 9 1/4" Depth of flange if manhole flanged 3 1/4" 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 _____ 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 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 casing 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,
John Curran 1880, Newcastle-on-Tyne, 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.)
 while building { During erection on board vessel - - - } **SEE ACCOMPANYING MACHINERY REPORT**
 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.) _____

21/4/39

Survey Fee £ 18 : 16 : _____ } When applied for, 10/11 19 39.
 Travelling Expenses (if any) £ : : _____ } When received, 17 2 19 39 1/2

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

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

Assigned Su Frier Entry Machinery Report