

## REPORT ON BOILERS.

Received at London Office

WFD.

Date of writing Report 1924 When handed in at Local Office 5.5.1924 Port of Glasgow.

No. in Survey held at Parkhead. Date, First Survey 4.2.1924 Last Survey 28.4.1924

Reg. Book. 10406 Sup. on the Two Marine Boilers N<sup>o</sup> 3914 of S.S. "SUNFLOWER" (Number of Visits 10) Tons { Gross 1082 Net 514

Master Built at Dartmouth By whom built Mess<sup>rs</sup> Philipson & Co Yard No. 640. When built 1925

Engines made at Dartmouth By whom made Philipson & Co Engine No. 263 When made 1925

Boilers made at Parkhead By whom made Mess<sup>rs</sup> J. Neilson & Sons Ltd Boiler No. 3914 When made 1924

Nominal Horse Power 130. Owners Port belonging to Lisbon

## MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel D. Colville & Sons. and J. Spencer & Sons (wreather plates) (Letter for Record 5)

Total Heating Surface of Boilers 2348.5 Is forced draught fitted No Coal or Oil fired Oil

No. and Description of Boilers Two single ended return tube Working Pressure 180

Tested by hydraulic pressure to 320 Date of test 28.4.24 No. of Certificate 16484 Can each boiler be worked separately Yes

Area of Firegrate in each Boiler No. and Description of safety valves to each boiler Pair - 2 1/2" dia spring loaded

Area of each set of valves per boiler { per Rule 8.8 as fitted 9.8 Pressure to which they are adjusted 185-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 distant 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 Yes

Largest internal dia. of boilers 10'-6" Length 11'-6" Shell plates: Material S Tensile strength 28/32

Thickness 7/8. Are the shell plates welded or flanged No Description of riveting: circ. seams { end D.R.L. inter. Pitch of rivets { 3 1/4" 6 9/16"

long. seams T.R.D.B.S. Diameter of rivet holes in { circ. seams 15/16 long. seams Percentage of strength of circ. end seams { plate 41.4 rivets 42.4 Percentage of strength of circ. intermediate seam { plate rivets 86.0

Percentage of strength of longitudinal joint { plate 82.5 rivets 89.9 Working pressure of shell by Rules 182.

Thickness of butt straps { outer 1 1/6" inner 13/16" No. and Description of Furnaces in each Boiler Two. Deighton. 2cf

Material S Tensile strength 26/30 Smallest outside diameter 2'-11 1/2"

Length of plain part { top bottom Thickness of plates { crown 15/32 bottom Description of longitudinal joint Weld.

Dimensions of stiffening rings on furnace or c.c. bottom Working pressure of furnace by Rules 180.

End plates in steam space: Material S Tensile strength 26/30 Thickness 53/64 Pitch of stays 14" x 13"

How are stays secured Double nuts and loose washers Working pressure by Rules 180.

Tube plates: Material { front back S Tensile strength { 26/30 Thickness { 53/64 23/32

Mean pitch of stay tubes in nests 9 1/2" Pitch across wide water spaces 13" Working pressure { front 194 back 204

Girders to combustion chamber tops: Material S Tensile strength 28/32 Depth and thickness of girder

at centre 2-6 1/2" x 3/4" Length as per Rule 29 1/16 Distance apart 4" No. and pitch of stays

in each 2 @ 10" Working pressure by Rules 184 Combustion chamber plates: Material S

Tensile strength 26/30 Thickness: Sides 43/64 Back 5/8 Top 5/8 Bottom 1 1/8

Pitch of stays to ditto: Sides 10" x 8 3/8 Back 8 5/8 x 8" Top 10" x 4" Are stays fitted with nuts or riveted over nuts

Working pressure by Rules 186 Front plate at bottom: Material S Tensile strength 28/32

Thickness 53/64 Lower back plate: Material S Tensile strength 26/30 Thickness 53/64

Pitch of stays at wide water space 13 1/4" Are stays fitted with nuts or riveted over nuts

Working Pressure 196 Main stays: Material S Tensile strength 28/32

Diameter { At body of stay, 2 1/4" No. of threads per inch 6 Area supported by each stay 164

Over threads Working pressure by Rules 210 Screw stays: Material S Tensile strength 26/30

Diameter { At turned off part, 1 1/2" No. of threads per inch 9 Area supported by each stay 69



During work by Rules 181 Are the stays drilled at the outer ends No. Margin stays: Diameter { At turned off part, 1 3/4 or Over threads 1 3/4 }  
 Dates of Survey while building { During progress of work in shops - - } 1924 Feb 4 7 18 26 Mar 7 14 21 25 Are the approved plans of boiler and superheater forwarded herewith Yes  
 { During erection on board vessel - - } Apr 15 28 (If not state date of approval.)  
 Tubes: Material Iron. External diameter { Plain 3" Stay 3" } Thickness { 5/16" } No. of threads per inch 9.  
 Pitch of tubes 4 1/8" Working pressure by Rules 250 Manhole compensation: Size of opening in shell plate 19" x 15" Section of compensating ring 11" x 7/8" No. of rivets and diameter of rivet holes 36-1"  
 Outer row rivet pitch at ends 4" Depth of flange if manhole flanged 3" Steam Dome: Material None fitted.  
 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 fitted Manufacturers of { Tubes \_\_\_\_\_ 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 \_\_\_\_\_, 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 23 inclusive for boilers been complied with \_\_\_\_\_

Annual Survey Request

The foregoing is a correct description,  
 For JAMES NEILSON & SON, LTD.  
Arch. Galloway Manufacturer.

Dates of Survey while building { During progress of work in shops - - } 1924 Feb 4 7 18 26 Mar 7 14 21 25 Are the approved plans of boiler and superheater forwarded herewith Yes  
 { During erection on board vessel - - } Apr 15 28 (If not state date of approval.)  
 Total No. of visits 10

**GENERAL REMARKS** (State quality of workmanship, opinions as to class, &c.) The boilers have been built under special survey in accordance with the approved plan. The materials and workmanship are good. The boilers have been shipped to Dartmouth for fitting on board the vessel.

These boilers have been securely fitted aboard and their safety valves adjusted under steam. Accumulation tests and trials under working conditions have been carried out with satisfactory results.

P. J. Mac.  
Plymouth  
19. 1. 25.

Survey Fee ... .. £ 15 - 12 - 0. When applied for, 6/57 192 4.  
 Travelling Expenses (if any) £ --- : When received, 10/5 192 4.

J. A. Galloway  
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute GLASGOW - 6 MAY 1924

PRI. 30 JAN 1925

Assigned

TRANSMIT TO LONDON



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