

## REPORT ON BOILERS.

No. 44960

Received at London Office - 2 SEP 1925

Date of writing Report 1925 When handed in at Local Office 31.8.1925 Port of Glasgow

No. in Survey held at Glasgow Date, First Survey 20.1.25 Last Survey 26.8.1925

on the new steel S/S 'WAYFARER' (Number of Visits 54) Gross 5068 Tons Net 3157

Master Built at Glasgow By whom built J. & J. H. Harrison Ltd Yard No. 403 When built 1925

Engines made at Glasgow By whom made David Rowan & Co. Ltd Engine No. 819 When made 1925

Donkey Boilers made at Glasgow By whom made David Rowan & Co. Ltd Boiler No. 819 When made 1925

Nominal Horse Power 464 Owners T. & J. H. Harrison Ltd Port belonging to Liverpool

## MULTITUBULAR BOILERS MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel Wm. Beardmore & Co. Lanarkshire steel Co. & the steel by Scotland (Letter for Record, (R))

Total Heating Surface of Boilers 10750 sq ft Is forced draught fitted no Coal or Oil fired coal

No. and Description of Boilers one single ended Working Pressure 120 lb

Tested by hydraulic pressure to 230 Date of test 4.6.25 No. of Certificate 16843 Can each boiler be worked separately -

Area of Firegrate in each Boiler 33.50 sq ft No. and Description of safety valves to each boiler two direct spring

Area of each set of valves per boiler {per Rule 4.990" as fitted 5.940" Pressure to which they are adjusted 123 Are they fitted with easing gear yes

In case of donkey boilers, state whether steam from main boilers can enter the donkey boiler no

Smallest distance between boilers or uptakes and bunkers or woodwork well clear Is oil fuel carried in the double bottom under boilers no

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

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

Thickness 1 1/16" Are the shell plates welded or flanged no Description of riveting: circ. seams {end DR inter. -

long. seams NB S. T. R Diameter of rivet holes in {circ. seams 13/16" long. seams 13/16" Pitch of rivets {2.32" 5 13/32"

Percentage of strength of circ. end seams {plate 64.9 rivets 53.5 Percentage of strength of circ. intermediate seam {plate - rivets -

Percentage of strength of longitudinal joint {plate 84.9 rivets 86 combined 91.4 Working pressure of shell by Rules 125

Thickness of butt straps {outer 1 1/32" inner 3/32" No. and Description of Furnaces in each Boiler two plain

Material steel Tensile strength 26-30 tons Smallest outside diameter 3'-5 1/2"

Length of plain part {top 6'-5 3/4" bottom 9'-2" Thickness of plates {crown 5/8" bottom 15/16" & 5/8" Description of longitudinal joint welded

Dimensions of stiffening rings on furnace or e.c. bottom none Working pressure of furnace by Rules 124

End plates in steam space: Material steel Tensile strength 26-30 tons Thickness 1 1/16" Pitch of stay 23 3/4" x 15"

How are stays secured N.R. Working pressure by Rules 122

Tube plates: Material {front } steel Tensile strength { } 26-30 tons Thickness { 13/16" 23/32"

Mean pitch of stay tubes in nests 11 3/4" Pitch across wide water spaces 14 1/2" Working pressure {front 152 back 153

Girders to combustion chamber tops: Material steel Tensile strength 28-32 tons Depth and thickness of girder

at centre 2 @ 6 1/2" x 9/16" Length as per Rule 2'-3 23/32" Distance apart 8 3/4" No. and pitch of stays

in each 2 @ 9" Working pressure by Rules 124 Combustion chamber plates: Material steel

Tensile strength 26-30 tons Thickness: Sides 17/32" Back 9/16" Top 17/32" Bottom 15/16"

Pitch of stays to ditto: Sides 10" x 8 1/2" Back 9 3/8" x 9" Top 9" x 8 3/4" Are stays fitted with nuts or riveted over nuts

Working pressure by Rules 121 Front plate at bottom: Material steel Tensile strength 26-30 tons

Thickness 13/16" Lower back plate: Material steel Tensile strength 26-30 tons Thickness 5/8"

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

Working Pressure 124 Main stays: Material steel Tensile strength 28-32 tons

Diameter {At body of stay, or Over threads 2 1/4" & 2" No. of threads per inch 6 Area supported by each stay 356.25 & 279 sq in

Working pressure by Rules 120 Screw stays: Material Iron Tensile strength -

Diameter {At turned off part, or Over threads 1 3/8" No. of threads per inch 10 Area supported by each stay 84.30 sq in



Working pressure by Rules 120 Are the stays drilled at the outer ends *no* Margin stays: Diameter { At turned off part, 1 1/2 or Over threads 1 1/2

No. of threads per inch 10 Area supported by each stay 100.68 sq. in. Working pressure by Rules 124

Tubes: Material *Iron* External diameter { Plain 3 1/2 Stay 3 1/2 Thickness { 9 w.s. 1/4 x 5/16 No. of threads per inch 9

Pitch of tubes 4 3/4 x 4 5/8 Working pressure by Rules 165 Manhole compensation: Size of opening in shell plate 19" x 15" Section of compensating ring 6 1/2" x 11/16" No. of rivets and diameter of rivet holes 40 @ 1 1/2"

Outer row rivet pitch at ends 5 1/2" Depth of flange if manhole flanged *ring 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

Number of elements Material of tubes Manufacturers of { Tubes Steel castings 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

The foregoing is a correct description,  
 For David Rowan & Co. Ltd. Manufacturer.  
 Arch. W. Grierson

Dates of Survey { During progress of work in shops - - - See accompanying Machinery Report.  
 while building { During erection on board vessel - - -

Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.)  
 Total No. of visits

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, in accordance with the Rules. It has been satisfactorily fitted in the vessel and its safety valves adjusted under steam

A.L.  
 31/8/25

Survey Fee ... £ 4 : 4 :  
 Travelling Expenses (if any) £ :

When applied for, 1-SEP-1925  
 When received, 1-SEP-1925

L. Davis

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute GLASGOW 1-SEP-1925

Assigned See accompanying machinery report.

