

REPORT ON BOILERS.

No. 56140

25 SEP 1935

Received at London Office

When handed in at Local Office 21.9.35 Port of Glasgow

No. in Survey held at Glasgow Date, First Survey 13.11.34 Last Survey 11-9-1935

on the new steel 3/5" INVENTOR (Number of Visits 76) Tons Gross 6210
Net 3840

Built at Glasgow By whom built W & W. Henderson & Co. Ltd Yard No. 953 When built 1935

Engines made at Glasgow By whom made W & W. Henderson & Co. Ltd Engine No. 953 When made 1935

Boilers made at Glasgow By whom made W & W. Henderson & Co. Ltd Boiler No. 953 When made 1935

Owners T & J Harrison Port belonging to Liverpool

MULTITUBULAR BOILERS - MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel B. Whittell & Co. (Letter for Record)

Total Heating Surface of Boilers 1242 sq ft Is forced draught fitted no Coal or Oil fired coal

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

Tested by hydraulic pressure to 230 Date of test 13-6-35 No. of Certificate 19556 Can each boiler be worked separately -

Area of Firegrate in each Boiler 35 sq ft No. and Description of safety valves to each boiler two direct spring

Area of each set of valves per boiler per Rule 11.42 sq ft
as fitted 11.86 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 no

Smallest distance between boilers or uptakes and bunkers or woodwork 12" Is oil fuel carried in the double bottom under boilers no

Smallest distance between shell of boiler and tank top plating no tank (holder on uptake) Is the bottom of the boiler insulated yes

Largest internal dia. of boilers 12'-0" Length 10'-0" Shell plates: Material steel Tensile strength 28-32 tons

Thickness 23/32" Are the shell plates welded or flanged no Description of riveting: circ. seams end DR
inter. -

Diameter of rivet holes in circ. seams 13/16" Pitch of rivets 2.367"
long. seams 7/8"

Percentage of strength of circ. end seams plate 65.7 Percentage of strength of circ. intermediate seam plate -
rivets 50.2

Percentage of strength of longitudinal joint plate 84.24 Working pressure of shell by Rules 120
rivets 92.5
combined 91.6

Thickness of butt straps outer 9/16" No. and Description of Furnaces in each Boiler two plain
inner 11/16"

Material steel Tensile strength 26-30 tons Smallest outside diameter 4 3/4"

Length of plain part top 7 1/2" Thickness of plates crown 9/8" Description of longitudinal joint welded
bottom 7 5/8"

Dimensions of stiffening rings on furnace or c.c. bottom Working pressure of furnace by Rules 120

Plates in steam space: Material steel Tensile strength 26-30 tons Thickness 1 1/16" Pitch of stays 17 1/4" x 23 3/4"

Are stays secured DN Working pressure by Rules 121

Front plates: Material steel Tensile strength 26-30 tons Thickness 13/16"
back -

Pitch of stay tubes in nests 12.1875" Pitch across wide water spaces 14 1/2" Working pressure front 129
back 124

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

Centre 2 @ 7 1/4" x 9 7/8" Length as per Rule 30.7" Distance apart 9.875" No. and pitch of stays

Each 2 @ 9 3/4" Working pressure by Rules 122 Combustion chamber plates: Material steel

Tensile strength 26-30 tons Thickness: Sides 1 1/32" Back 9/16" Top 1 1/32" Bottom 1 5/16"

of stays to ditto: Sides 9 3/4" x 9 3/4" Back 9" x 9" Top 9 7/8" x 9 3/4" Are stays fitted with nuts or riveted over nuts

Working pressure by Rules 126 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"

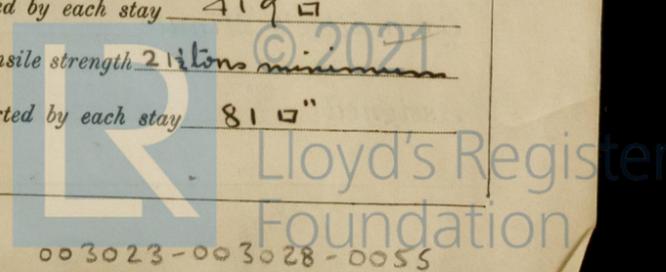
of stays at wide water space 13" x 9" Are stays fitted with nuts or riveted over nuts

Shipping Pressure 125 Main stays: Material steel Tensile strength 28-32 tons

At body of stay, 2 1/2" No. of threads per inch 6 Area supported by each stay 419 sq in
Over threads

Working pressure by Rules 131 Screw stays: Material Iron Tensile strength 21 tons minimum

At turned off part, 1 3/8" No. of threads per inch 9 Area supported by each stay 81 sq in
Over threads



Working pressure by Rules 125 lb Are the stays drilled at the outer ends no Margin stays: Diameter At turned off part, Over threads 1 1/2"
 No. of threads per inch 9 Area supported by each stay 990" Working pressure by Rules 126
 Tubes: Material Iron External diameter Plain 3 1/2" Stay 3 1/2" Thickness 8 W.S. YA & 9/16" No. of threads per inch 9
 Pitch of tubes 4 1/8" x 4 1/8" Working pressure by Rules 125 Manhole compensation: Size of opening in shell plate 19 x 15" Section of compensating ring 5 1/2 x 2 1/2" No. of rivets and diameter of rivet holes 38 @ 1 5/16"
 Outer row rivet pitch at ends 5 15/16" 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 _____ 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 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 _____
 Area of each safety valve _____ Is a safety valve fitted to every part of the superheater which can be shut off from the boiler _____
 Rules _____ Pressure to which the safety valves are adjusted _____ Working pressure as per tubes _____, castings _____ and after assembly in place _____ Hydraulic test pressure: _____
 to free the superheater from water where necessary _____ Are drain cocks or valves fitted _____
 Have all the requirements of Sections 14 to 22 inclusive for boilers been complied with yes

The foregoing is a correct description,
 For DAVID & WM HENDERSON & CO., LTD. See Manufacturer's stamp
 A.S. Mearns
 Are the approved plans of boiler and superheater forwarded herewith
 (If not state date of approval.)
 Total No. of visits _____

SEE ACCOMPANYING MACHINERY REPORT.

Is this Boiler a duplicate of a previous case yes If so, state Vessel's name and Report No. "Designer" ship no. 48580

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.
21/9/35.

Survey Fee ... £ 8 : 6 : - When applied for, 17.9.35.
 Travelling Expenses (if any) £ _____ When received, 8.11.35.

S. Cairns
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute GLASGOW 24 SEP 1935

Assigned SEE ACCOMPANYING MACHINERY REPORT.