

REPORT ON BOILERS.

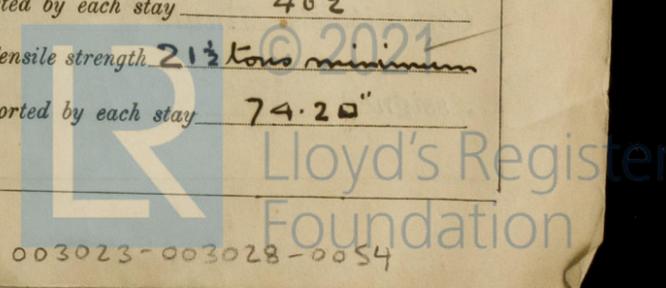
No. 56140

25 SEP 1935

Date of writing Report _____ When handed in at Local Office 21.9.10 Port of Glasgow
 No. in Reg. Book. 19 Survey held at Glasgow Date, First Survey 18. 11. 34 Last Survey 11.9. 1935
 on the new steel S/S "INVENTOR" (Number of Visits 76) Gross 6210 Tons Net 3840
 Master _____ Built at Glasgow By whom built D & W Henderson & Co Ltd Yard No. 953 When built 1935
 Engines made at Glasgow By whom made D & W. Henderson & Co Ltd Engine No. 953 When made 1935
 Boilers made at Glasgow By whom made D & W. Henderson & Co Ltd Boiler No. 953 When made 1935
 Nominal Horse Power _____ Owners T. & J. Harrison Port belonging to Liverpool

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel Bohiller Ltd (Letter for Record (r))
 Total Heating Surface of Boilers 9212 sq ft Is forced draught fitted no Coal or Oil fired coal
 No. and Description of Boilers two double ended multitubular main Working Pressure 215
 Tested by hydraulic pressure to 373 Date of test 13.6.35 No. of Certificate 1955 Can each boiler be worked separately yes
 Area of Firegrate in each Boiler 136 sq ft No. and Description of safety valves to each boiler Two direct spring
 Area of each set of valves per boiler { per Rule 24.87" as fitted 25.13" Pressure to which they are adjusted 215 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 1'-8 1/2" Is oil fuel carried in the double bottom under boilers no
 Smallest distance between shell of boiler and tank top plating 2'-6" Is the bottom of the boiler insulated yes
 Largest internal dia. of boilers 16'-6" Length 18'-6" Shell plates: Material steel Tensile strength 29.33 tons
 Thickness 1 9/16" Are the shell plates welded or flanged no Description of riveting: circ. seams { end DR inner TR
 Long. seams DRS, TR Diameter of rivet holes in { circ. seams 1 19/32" long. seams 1 19/32" Pitch of rivets { 4.68" 10 7/8"
 Percentage of strength of circ. end seams { plate 66 rivets 43.3 Percentage of strength of circ. intermediate seam { plate 66 rivets 65
 Percentage of strength of longitudinal joint { plate 85.5 rivets 86 combined 88 Working pressure of shell by Rules 218
 Thickness of butt straps { outer 1 3/16" inner 1 1/16" No. and Description of Furnaces in each Boiler Six Harrison
 Material steel Tensile strength 26.30 tons Smallest outside diameter 4'-3"
 Length of plain part { top _____ bottom _____ Thickness of plates { crown 3/4" bottom _____ Description of longitudinal joint welded
 Dimensions of stiffening rings on furnace or c.c. bottom none Working pressure of furnace by Rules 218
 End plates in steam space: Material Steel Tensile strength 26.30 tons Thickness 1 15/32" Pitch of stays 21" x 22"
 How are stays secured D.N. Working pressure by Rules 219
 Tube plates: Material { front steel back _____ Tensile strength { 26.30 tons Thickness { 1 1/16" 1 1/16"
 Lean pitch of stay tubes in nests 12 3/16" Pitch across wide water spaces 14 1/2" Working pressure { front 226 back 280
 Girders to combustion chamber tops: Material Steel Tensile strength 29.33 tons Depth and thickness of girder
 centre 2 @ 3/4" x 12 1/8" Length as per Rule 47 7/8" Distance apart 7 1/4" No. and pitch of stays
 each 4 @ 9/4" Working pressure by Rules 219 Combustion chamber plates: Material steel
 Tensile strength 26.30 tons Thickness: Sides 2 3/32" Back _____ Top 2 3/32" Bottom 1"
 Pitch of stays to ditto: Sides 9 1/4" x 9" Back _____ Top 9 1/4" x 7 1/4" Are stays fitted with nuts or riveted over nuts
 Working pressure by Rules 217 Front plates at bottom: Material Steel Tensile strength 26.30 tons
 Thickness 1 1/16" Lower back plate: Material _____ Tensile strength _____ Thickness _____
 Pitch of stays at wide water space _____ Are stays fitted with nuts or riveted over _____
 Working Pressure _____ Main stays: Material Steel Tensile strength 28.32 tons
 Diameter { At body of stay, 3 3/4" No. of threads per inch 6 Area supported by each stay 462
 Working pressure by Rules 238 Screw stays: Material Iron Tensile strength 21 1/2 tons minimum
 Diameter { At turned off part, _____ No. of threads per inch 9 Area supported by each stay 74.20"



Working pressure by Rules **244 lb** Are the stays drilled at the outer ends **no** Margin stays: Diameter **3 1/2"** (At turned off part, or Over threads) No. of threads per inch **9** Area supported by each stay **1.49** Working pressure by Rules **260**

Tubes: Material **Iron** External diameter **3 1/2"** Thickness **5/16"** No. of threads per inch **9** Pitch of tubes **4 7/8" x 4 7/8"** Working pressure by Rules **260** Manhole compensation: Size of opening **12" x 1 9/16"**

shell plate **20" x 16"** Section of compensating ring **12" x 1 9/16"** No. of rivets and diameter of rivet holes **36 @ 1 1/2"** Outer row rivet pitch at ends **10 7/8"** Depth of flange if manhole flanged **3 9/16"** 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 **—** 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 **Smoke tube** Manufacturers of **For particulars see Gls Cat. N° 9388** Number of elements **—** Material of tubes **—** Internal diameter and thickness of tubes **—** Material of headers **—** Tensile strength **—** Thickness **—** Can the superheater be shut off the boiler be worked separately **no** Is a safety valve fitted to every part of the superheater which can be shut off from the boiler **yes** Area of each safety valve **—** Are the safety valves fitted with easing gear **yes** Working pressure as Rules **—** Pressure to which the safety valves are adjusted **232 lb** Hydraulic test pressure **—** tubes **—**, castings **—** and after assembly in place **430 lb** Are drain cocks or valves fitted to free the superheater from water where necessary **yes**

Have all the requirements of Sections 14 to 22 inclusive for boilers been complied with **yes**

FOR DAVID & W. HENDERSON & CO., LTD. (Incorporated in Scotland)
A.S. Machinery Manufacturers

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 **—** Total No. of visits **—**

SEE ACCOMPANYING MACHINERY REPORT.

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 boilers have been constructed under special survey satisfactorily fitted in the vessel and their safety valves adjusted under steam.

21/9/35

[Faint handwritten notes and signatures in the remarks section]

Survey Fee **£ —** When applied for, **19**
Travelling Expenses (if any) **£ —** When received, **19**

S. Davis
Engineer Surveyor to Lloyd's Register of Shipping Press

Committee's Minute **GLASGOW 24 SEP 1935**

Assigned **SEE ACCOMPANYING MACHINERY REPORT.**

