

REPORT ON BOILERS.

No. 77825

Received at London Office WED. 7 MAY. 1924

Date of writing Report 2nd May 1924 When handed in at Local Office 2nd May 1924 Port of NEWCASTLE-ON-TYNE

No. in Survey held at Newcastle & Hebburn Date, First Survey 28.4/1922 Last Survey 2nd May 1924

Boiler on the Steel S. S. Tilawa (Number of Visits —) Gross Tons — Net Tons —

Builder Hebburn on Tyne By whom built R. H. Hawthorn Leslie & Co. Ltd No. 530 When built 1924

Engines made at St Peter's Newcastle By whom made R. H. Hawthorn Leslie & Co. Ltd Engine No. 3512 When made 1924

Boilers made at do do By whom made do do Boiler No. 3512 When made 1924

Rule 900 Owners British India Steam Nav Co. Ltd Port belonging to Glasgow

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel John Spencer & Sons Ltd (Letter for Record S)

Total Heating Surface of Boilers 13,900 sq ft Is forced draught fitted yes Coal or Oil fired Coal

No. and Description of Boilers 4 Single Ended Multitubular Working Pressure 215 lbs per sq in

Tested by hydraulic pressure to 372 1/2 lbs Date of test 27/4/23 No. of Certificate 9751 Can each boiler be worked separately yes

Area of Firegrate in each Boiler 82 1/2 sq ft No. and Description of safety valves to each boiler Two direct spring 3 1/2" diam

Area of each set of valves per boiler 15.90 sq in Pressure to which they are adjusted 220 lbs Are they fitted with easing gear yes

In case of donkey boilers, state whether steam from main boilers can enter the donkey boiler No D.B.

Smallest distance between boilers or uptakes and bunkers or woodwork 18" Is oil fuel carried in the double bottom under boilers No

Smallest distance between shell of boiler and tank top plating 30" Is the bottom of the boiler insulated No

Largest internal dia. of boilers 17-6" Length 12-0" Shell plates: Material Steel Tensile strength 30/34 tons

Thickness 1 19/32" Are the shell plates welded or flanged No Description of riveting: circ. seams 2 R Kap

long. seams five rivets, 2 straps Diameter of rivet holes in circ. seams 1 21/32" Pitch of rivets 1 1/4"

Percentage of strength of circ. end seams: plate 61.0, rivets 48.5 Percentage of strength of circ. intermediate seam: plate 84.5, rivets 90.0

Percentage of strength of longitudinal joint: plate 84.5, rivets 90.0, combined 87.1 Working pressure of shell by Rules 215 lbs per sq in

Thickness of butt straps: outer 1 1/4", inner 1 3/8" No. and Description of Furnaces in each Boiler Four Dightons

Material Steel Tensile strength 26/30 tons per sq in Smallest outside diameter 46.41"

Length of plain part: top —, bottom — Thickness of plates: crown 4 5/64" Description of longitudinal joint Welded

Dimensions of stiffening rings on furnace or c.c. bottom None Working pressure of furnace by Rules 220 lbs per sq in

End plates in steam space: Material Steel Tensile strength 26/30 tons Thickness 1 1/32" Pitch of stays 22 1/4 x 17"

How are stays secured Double nuts & washers Working pressure by Rules 217 lbs per sq in

Tube plates: Material Steel Tensile strength 26/30 tons per sq in Thickness 31/32"

Mean pitch of stay tubes in nests 11 3/4 x 8" Pitch across wide water spaces 13 1/4" Working pressure: front 224 lbs per sq in, back 264 lbs per sq in

Girders to combustion chamber tops: Material Steel Tensile strength 28/32 tons per sq in Depth and thickness of girder

at centre 10" x 1 7/8" Length as per Rule 36" 3/4 Distance apart 8 5/8" No. and pitch of stays

in each Three, 8" Working pressure by Rules 222 lbs per sq in Combustion chamber plates: Material Steel

Tensile strength 26 to 30 tons per sq in Thickness: Sides 21/32" Back 21/32" Top 21/32" Bottom 1"

Pitch of stays to ditto: Sides 8 1/2" x 8" Back 9 1/2" x 7 7/8" Top 8 5/8" x 8" Are stays fitted with nuts or riveted over Nuts

Working pressure by Rules 216 lbs per sq in Front plate at bottom: Material Steel Tensile strength 26/30 tons per sq in

Thickness 1" Lower back plate: Material Steel Tensile strength 26/30 tons per sq in Thickness 29/32"

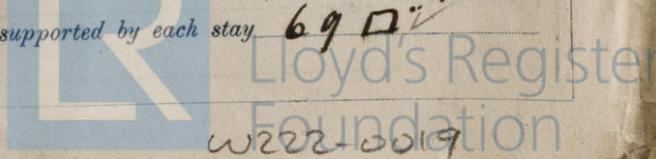
Pitch of stays at wide water space 14 3/4 x 7 7/8" Are stays fitted with nuts or riveted over Nuts

Working Pressure 224 lbs per sq in Main stays: Material Steel Tensile strength 28/32 tons per sq in

Diameter: At body of stay 3 3/8" No. of threads per inch 6" Area supported by each stay 350 sq in

Working pressure by Rules 225 lbs per sq in Screw stays: Material Steel Tensile strength 26/30 tons per sq in

Diameter: At turned off part 1 5/8" & 1 3/4" No. of threads per inch 9" Area supported by each stay 69 sq in



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Working pressure by Rules 220 lbs Are the stays drilled at the outer ends No Margin stays: Diameter { At turned off part, or Over threads 1 7/8"

No. of threads per inch 9 Area supported by each stay 95.4 sq" Working pressure by Rules 221 lbs per sq"

Tubes: Material Iron External diameter { Plain 2 3/4" Stay 2 3/4" Thickness { 8 L S G. 7/16 3/8 5/16 No. of threads per inch 9

Pitch of tubes 4" x 4" Working pressure by Rules 215 lbs per sq" Manhole compensation: Size of opening in shell plate 17" x 13" Section of compensating ring 34" x 31" x 1 7/8" Hole 16" x 12" No. of rivets and diameter of rivet holes 15 each side

Outer row rivet pitch at ends 10 1/2" Depth of flange if manhole flanged 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 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 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 yes.

FOR R. & W. HAWTHORN, LESLIE & CO. LTD.
R. W. Hawthorn Manufacturer.



Dates of Survey { During progress of work in shops - - } See Machinery Report 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 _____

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) These boilers have been built under special survey, the materials and workmanship are of good quality, they have been securely fitted on board steam raised and their safety valves adjusted to 220 pounds per square inch.

For recommendations, please see attached report on the machinery.

Survey Fee ... £ See attached report When applied for, ... 192

Travelling Expenses (if any) £ ... When received, ... 192

George Murdoch
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRI. MAY. 9 1924

Assigned _____

