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REPORT ON BOILERS.

No. 81426

9 JUN 1927

Received at London Office

Writing Report 1-6-1927 When handed in at Local Office 3-6-1927 Port of Newcastle-on-Tyne

Survey held at Jarrow Date, First Survey 9 July 1926 Last Survey 27 May 1927

Super on the S.S. "BRITISH INDUSTRY" (Number of Visits —) Gross 4500 Tons Net 2370

Built at Hebburn By whom built Palmers S. & S. Co. Ltd Yard No. 963 When built 1927

Engines made at Jarrow By whom made Palmers S. & S. Co. Ltd Engine No. 963 When made 1927

Boiler No. 963 When made 1927

Indicated Horse Power 407 Owners British Tanker Co. Ltd Port belonging to London

LTITUBULAR BOILERS MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel The Steel Company of Scotland Ltd (Letter for Record S)

Heating Surface of Boilers 1093 Is forced draught fitted No Coal or Oil fired Oil

Pressure and Description of Boilers 1 CYLINDRICAL MULTITUBULAR Working Pressure 120 LBS.

Tested by hydraulic pressure to 230 LBS. Date of test 14.4.27 No. of Certificate 138 Can each boiler be worked separately

Valves of Firegrate in each Boiler No. and Description of safety valves to each boiler Two SPRING LOADED

Pressure to which they are adjusted 120 LBS. Are they fitted with easing gear YES

Use of donkey boilers, state whether steam from main boilers can enter the donkey boiler No

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

Least distance between shell of boiler and tank top plating Is the bottom of the boiler insulated YES

Greatest internal dia. of boilers 10' 6" Length 10' 6" MEAN Shell plates: Material STEEL Tensile strength 28-32 TONS

Thickness 21/32 Are the shell plates welded or flanged No Description of riveting: circ. seams end D.R. inter. 3 1/4

Long. seams T.R. D.B.S. Diameter of rivet holes in circ. seams 1" long. seams 7/8 Pitch of rivets 4 5/8

Percentage of strength of circ. end seams plate 69.0 rivets 60.5 Percentage of strength of circ. intermediate seam plate rivets

Percentage of strength of longitudinal joint plate 81.0 rivets 91.6 combined Working pressure of shell by Rules 124.5 LBS.

Thickness of butt straps outer 7/16 inner 9/16 No. and Description of Furnaces in each Boiler Two CORRUGATED DEIGHTON SECTION

Material STEEL Tensile strength 26-30 TONS Smallest outside diameter 2' 10"

Length of plain part top 10 1/2" bottom 10 1/2" Thickness of plates crown 3/8 bottom 3/8 Description of longitudinal joint WELD

Dimensions of stiffening rings on furnace or c.c. bottom Working pressure of furnace by Rules 155.5 LBS.

Reinforcing plates in steam space: Material STEEL Tensile strength 26-30 TONS Thickness 1 1/32 Pitch of stays 23 1/2 x 19

How are stays secured DOUBLE NUTS & WASHERS Working pressure by Rules 120 LBS.

Reinforcing plates: Material front STEEL back STEEL Tensile strength 26-30 TONS Thickness 25/32 23/32

Pitch of stay tubes in nests 10 5/8 Pitch across wide water spaces 1' 2 1/4 Working pressure front 130 LBS back 121 LBS

Reinforcing plates to combustion chamber tops: Material STEEL Tensile strength 28-32 TONS Depth and thickness of girder

centre 6" x 1" Length as per Rule 2' 1 25/32 Distance apart 8 1/2 No. and pitch of stays

each 2 @ 10" Working pressure by Rules 124 LBS. Combustion chamber plates: Material STEEL

Tensile strength 26-30 TONS Thickness: Sides 19/32 Back 3/4 Top 19/32 Bottom 19/32

Pitch of stays to ditto: Sides 10" x 10" Back 9 1/2" x 11" Top 10" x 8 1/2" Are stays fitted with nuts or riveted over BOTH

Working pressure by Rules 121.5 LBS. Front plate at bottom: Material STEEL Tensile strength 26-30 TONS

Thickness 25/32 Lower back plate: Material STEEL Tensile strength 26-30 TONS Thickness 3/4

Pitch of stays at wide water space d^2 = 19^2 14 1/4 Are stays fitted with nuts or riveted over NUTS

Working Pressure 130 LBS. Main stays: Material STEEL Tensile strength 28-32 TONS

Diameter At body of stay, or Over threads 2 3/4 No. of threads per inch 6 Area supported by each stay 446.5

Working pressure by Rules 123.5 LBS. Screw stays: Material IRON Tensile strength 21 1/2 TONS

Diameter At turned off part, or Over threads 1 1/2 No. of threads per inch 9 Area supported by each stay 104.5

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Working pressure by Rules 120 LBS. Are the stays drilled at the outer ends No Margin stays: Diameter { At turned off part, or Over threads 1 7/8, 1 3/4, 1 5/8 }
 No. of threads per inch 9 Area supported by each stay 157.3, 130, 125.87 Working pressure by Rules 120.5 LBS
Tubes: Material IRON External diameter { Plain 3" Stay 3" } Thickness { 10 LSQ 3/8, 5/16 } No. of threads per inch 9
 Pitch of tubes 4 1/4" x 4 1/4" Working pressure by Rules 140 LBS
 shell plate 20" x 16" Section of compensating ring 2' 6" x 2' 8 1/2" x 2 1/2" No. of rivets and diameter of rivet holes 36 @ 1"
 Outer row rivet pitch at ends 5 1/2" Depth of flange if manhole flanged 3 5/8" **Manhole compensation:** Size of opening
 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
 stays Inner radius of crown Working pressure by Rules
 How connected to shell Size of doubling plate under dome
 of rivets in outer row in dome connection to shell Diameter of rivet holes and p

Type of Superheater
 Number of elements Material of tubes Manufacturers of { Tubes Steel castings }
 Material of headers Tensile strength Internal diameter and thickness of tubes
 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
 Rules Pressure to which the safety valves are adjusted Hydraulic test pressure
 tubes, castings and after assembly in place Are drain cocks or valves fit
 to free the superheater from water where necessary
 Have all the requirements of Sections 14 to 23 inclusive for boilers been complied with YES

The foregoing is a correct description,
Palmer Shipbuilding & Iron Co. Ltd.
N. Brown Manufacturer

Dates of Survey { During progress of work in shops - - }
 while building { During erection on board vessel - - - }

See *trialy Report*

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

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) This boiler was built under Special Survey, the workmanship and materials are good.

Survey Fee ... *See trialy Report* When applied for, 192
 Travelling Expenses (if any) £ ... When received, 192

Thomas Napier
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute *FRI. 10 JUN 1927*

Assigned *See other two Rpt.*



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