

REPORT ON BOILERS.

No. 81608

Received at London Office

3 AUG 1927

Date of writing Report 26-7-1927

When handed in at Local Office 30-7-1927

Port of Newcastle-on-Tyne

No. in Survey held at 1 Book.

Hebburn

Date, First Survey 18 May 1927 Last Survey 20 July 1927

(Number of Visits 7) Tons { Gross Net

on the

Master

Built at Dartmouth

By whom built Philips & Sons

Yard No. 418 When built

Engines made at

By whom made

Engine No. When made

Boilers made at Hebburn

By whom made Palmers Co. Ltd

Boiler No. 1079 When made 1927

Nominal Horse Power

Owners

Port belonging to

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel William Beardmore & Co. Ltd.

(Letter for Record 5)

Total Heating Surface of Boilers 1600 sq ft

Is forced draught fitted No

Coal or Oil fired Coal

No. and Description of Boilers ONE S.E. MULTITUBULAR

Working Pressure 150 LBS.

Tested by hydraulic pressure to 275 LBS Date of test 22.7.27 No. of Certificate 172 Can each boiler be worked separately

Area of Firegrate in each Boiler 55.8 sq ft No. and Description of safety valves to each boiler

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

In case of donkey boilers, state whether steam from main boilers can enter the donkey boiler

Smallest distance between boilers or uptakes and bunkers or woodwork Is oil fuel carried in the double bottom under boilers

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

Largest internal dia. of boilers 13' 6" Length 10' 6 15/16" Shell plates: Material STEEL Tensile strength 28-32 TONS

Thickness 15/16" Are the shell plates welded or flanged No Description of riveting: circ. seams { end D.R. inter. 3 1/2" 7 1/4"

long. seams T.R. D.B.S. Diameter of rivet holes in { circ. seams 1 1/16" long. seams 1" Pitch of rivets { 3 1/2" 7 1/4"

Percentage of strength of circ. end seams { plate 69.6% rivets 45% Percentage of strength of circ. intermediate seam { plate 86.2% rivets 88.9% combined 90.4%

Percentage of strength of longitudinal joint { plate 86.2% rivets 88.9% combined 90.4% Working pressure of shell by Rules 152 LBS.

Thickness of butt straps { outer 13/16" inner 13/16" No. and Description of Furnaces in each Boiler 3 PLAIN

Material STEEL Tensile strength 26-30 TONS Smallest outside diameter 3' 6 1/4"

Length of plain part { top bottom Thickness of plates { crown 3/4" bottom 3/4" Description of longitudinal joint WELD

Dimensions of stiffening rings on furnace or c.c. bottom Working pressure of furnace by Rules 163 LBS.

End plates in steam space: Material STEEL Tensile strength 26-30 TONS Thickness 1" Pitch of stays 18 1/2" x 18 1/2"

How are stays secured DOUBLE NUTS & WASHERS Working pressure by Rules 152 LBS.

Tube plates: Material { front back STEEL Tensile strength { 26-30 TONS Thickness { 15/16" 11/16"

Mean pitch of stay tubes in nests 10 1/2" Pitch across wide water spaces 14" Working pressure { front 290 LBS. back 152 LBS.

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

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

in each 2 @ 8 3/4" Working pressure by Rules 206 LBS Combustion chamber plates: Material STEEL

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

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

Working pressure by Rules 155 LBS. Front plate at bottom: Material STEEL Tensile strength 26-30 TONS

Thickness 15/16" Lower back plate: Material STEEL Tensile strength 26-30 TONS Thickness 13/16"

Pitch of stays at wide water space d = 26" 14" Are stays fitted with nuts or riveted over NUTS

Working Pressure 193 LBS Main stays: Material STEEL Tensile strength 28-32 TONS

Diameter { At body of stay, 2 3/4" No. of threads per inch 6 Area supported by each stay 342.25 sq in

Working pressure by Rules 161 LBS Screw stays: Material STEEL Tensile strength 26-30 TONS

Diameter { At turned off part, 1 1/2" No. of threads per inch 9 Area supported by each stay 78.75 sq in



002876-002882 0017

Working pressure by Rules 159 LBS^{sq} Are the stays drilled at the outer ends No Margin stays: Diameter { At turned off part, -
 No. of threads per inch 9 Area supported by each stay 105^{sq} Over threads 1 3/4
 Tubes: Material IRON External diameter { Plain 3 1/2" Stay 3 1/2" Thickness { 9 W.C. 4 5/16" No. of threads per inch 9
 Pitch of tubes 4 3/4" x 4 3/4" Working pressure by Rules 165 LBS^{sq} Manhole compensation: Size of opening
 shell plate 1' 8" x 1' 4" Section of compensating ring 2' 6 1/2" x 2' 9 1/2" x 1" No. of rivets and diameter of rivet holes 32 @ 1 3/32
 Outer row rivet pitch at ends 7" Depth of flange if manhole flanged 3 1/2" Steam Dome: Material
 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 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
 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 casing 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 fitted
 to free the superheater from water where necessary

Have all the requirements of Sections 14 to 23 inclusive for boilers been complied with
 For **Palmer's Shipbuilding & Iron Co., Ltd.**
 The foregoing is a correct description,
 J. Cameron
 Manager, Hebburn Boiler Shop & Foundry, Manufacturer

Dates of Survey while building { During progress of work in shops 1927 May 18, Jun 3, 14, 27, Jul 5, 12, 20
 { During erection on board vessel
 Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.) Yes
 Total No. of visits 7+

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

Survey Fee £ 10 : 13 : 0
 Travelling Expenses (if any) £ : :
 When applied for, 1927
 When received, 24th Sept 1927

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

Committee's Minute FRI. 16 MAR 1928 TUES. 27 MAR 1928
 Assigned See Report No. 6619

