

REPORT ON BOILERS.

No. 77652

Received at London Office SAT 15 MAR. 1924

Date of writing Report 102 When handed in at Local Office 13/3/1924 Port of NEWCASTLE-ON-TYNE

No. in Survey held at Newcastle Date, First Survey 22nd March 1922 Last Survey 4th March 1924

Reg. Book. H1450 on the Tunn. Co. M.V. WELLFIELD (Number of Visits —) Gross Tons Net

Master Built at Newcastle By whom built. *Bye Lam. & Co. Ltd.* Yard No. 225 When built 1924

Engines made at Newcastle By whom made *North Eastern Marine Eng. Co. Ltd.* Engine No. 2505 When made 1924

Boilers made at do. By whom made do. Boiler No. 2505 When made 1924

Nominal Horse Power Owners *Northern Petroleum Tank S.S. Co. Ltd.* Port belonging to Newcastle

MULTITUBULAR BOILERS MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel *Stephenson & Sons Ltd.* (Letter for Record S)

Total Heating Surface of Boilers 2374 sq. ft. Is forced draught fitted *no.* Coal or Oil fired *Oil & waste gas*

No. and Description of Boilers *Two single end cylindrical* Working Pressure 120 lbs. sq. in.

Tested by hydraulic pressure to 230 lbs. Date of test 10/10/23 M.R. No. of Certificate 9785 Can each boiler be worked separately *Yes*

Area of Firegrate in each Boiler 36 sq. ft. No. and Description of safety valves to each boiler *Two spring loaded 3" dia.*

Area of each set of valves per boiler *per Rule 13.4 sq. ft.* Pressure to which they are adjusted 125 lbs. Are they fitted with easing gear *Yes*

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

Smallest distance between boilers or uptakes and bunkers or woodwork 16" Is oil fuel carried in the double bottom under boilers *no*

Smallest distance between shell of boiler and tank top plating *Boiler on 'ween deck* Is the bottom of the boiler insulated *no*

Largest internal dia. of boilers 10' 4 3/4" Length 11' 6" Shell plates: Material *Steel* Tensile strength 26/30 tons

Thickness 5/8" Are the shell plates welded or flanged *no.* Description of riveting: circ. seams *end double*

long. seams *double rivet* D.P.S. Diameter of rivet holes in circ. seams 1" long. seams 1 1/16" Pitch of rivets 4 1/2"

Percentage of strength of circ. end seams *plate 66.6 rivets 51.5* Percentage of strength of circ. intermediate seam *plate 81.9 rivets 85.25 combined 92.3*

Percentage of strength of longitudinal joint *plate 81.9 rivets 85.25 combined 92.3* Working pressure of shell by Rules 120.4 lbs.

Thickness of butt straps *outer 1 1/2" inner 5/8"* No. and Description of Furnaces in each Boiler *Two - Single*

Material *Steel* Tensile strength 26/30 tons Smallest outside diameter 33 3/4"

Length of plain part *top bottom* Thickness of plates *coron bottom* 3/8" Description of longitudinal joint *weld*

Dimensions of stiffening rings on furnace or c.c. bottom Working pressure of furnace by Rules 161 lbs.

End plates in steam space: Material *Steel* Tensile strength 26/30 tons Thickness 13/16" Pitch of stays 19 1/2" x 13 3/4"

How are stays secured *Double nuts & washers* Working pressure by Rules 125 lbs.

Tube plates: Material *front Steel back Steel* Tensile strength 26/30 tons Thickness 13/16"

Mean pitch of stay tubes in nests 9.5" Pitch across wide water spaces 14 1/2" Working pressure *front 133 lbs back 156 lbs*

Girders to combustion chamber tops: Material *Steel* Tensile strength 26/30 tons Depth and thickness of girder at centre 6 1/2" x 1 1/2" Length as per Rule 30" Distance apart 10" No. and pitch of stays in each *Two 10"* Working pressure by Rules 125 lbs.

Tensile strength 26/30 tons Thickness: Sides 19/32" Back 13/32" Top 19/32" Bottom 3/4"

Pitch of stays to ditto: Sides 10" x 10" Back 10" x 10" Top 10" x 10" Are stays fitted with nuts or riveted over *nuts*

Working pressure by Rules 121 lbs. 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 13/16"

Pitch of stays at wide water space 14 1/2" Are stays fitted with nuts or riveted over *nuts*

Working Pressure 173 lbs. Main stays: Material *Steel* Tensile strength 26/30 tons

Diameter *At body of stay, Over threads* 2" No. of threads per inch *12* Area supported by each stay 19.5" x 13 3/4"

Working pressure by Rules 124 lbs. Screw stays: Material *Steel* Tensile strength 26/30 tons

Diameter *At turned off part, Over threads* 1 1/2" No. of threads per inch *nine* Area supported by each stay 100 sq. in.

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Working pressure by Rules 125 1/2 Are the stays drilled at the outer ends No Margin stays: Diameter { At turned off part, or Over threads 1 3/8" ✓
 No. of threads per inch fine Area supported by each stay 122.5 sq" Working pressure by Rules 124 1/2
 Tubes: Material low ✓ External diameter { Plain 2 1/2" ✓ Thickness { 1/16" + 1/16" ✓ No. of threads per inch fine ✓
 Pitch of tubes 3 3/4" x 3 5/8" ✓ Working pressure by Rules plain 175 1/2 stay 141 1/2 Manhole compensation: Size of opening in shell plate 16" x 12" Section of compensating ring 30 x 26" x 7/8" ✓ 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 1/2" ✓ Steam Dome: Material hil. ✓
 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 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
 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 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

The foregoing is a correct description,

THE NORTH EASTERN MARINE ENGINEERING CO., LTD. Manufacturer.

Dates of Survey { During progress of work in shops - - - } See Machinery Report Are the approved plans of boiler and superheater forwarded herewith { During erection on board vessel - - - } (If not state date of approval.) Secretary.
 Total No. of visits

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.)

These boilers were constructed under special survey. The materials and workmanship are sound and good. They were efficiently installed on the M.V. "WELFIELD" and the safety valves were adjusted under steam. These boilers are fitted for consuming waste gases and for burning oil fuel. The rules applying in Section 35 have been complied with.

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

R. E. Amers - Francis Pickers
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRI 21 MAR. 1924

Assigned



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