

REPORT ON BOILERS.

No. 17738.

SEP 18 1937

Received at London Office

Date of writing Report 13th Sept., 1937. When handed in at Local Office 15th Sept., 1937 Port of West Hartlepool

No. in Survey held at Hartlepool Date, First Survey 31st March, 1937 Last Survey 12th September, 1937

9404 on the Steel screw Steamer "NORTHLEIGH" (Number of Visits 82.) Gross 54.50 Tons Net 3200

Built at Sunderland By whom built W. Pickersgill Sons Ltd Yard No. 237 When built 1937

Engines made at Hartlepool By whom made Richardsons, Westgarth & Co. Ltd Engine No. H2686 When made 1937

Boilers made at Hartlepool By whom made Richardsons, Westgarth & Co. Ltd Boiler No. H2686 When made 1937

Indicated Horse Power 502 Owners W. J. Tatam Ltd Port belonging to London

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

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

Total Heating Surface of Boilers 5570 sq ft Is forced draught fitted yes Coal or Oil fired coal

No. and Description of Boilers Two, single ended, cylindrical Working Pressure 220 lbs

Tested by hydraulic pressure to 380 lbs Date of test 6-7-37 No. of Certificate 3869 Can each boiler be worked separately yes

Area of Firegrate in each Boiler 60 1/2 sq ft No. and Description of safety valves to each boiler 2, lockburian's High Lift, 2 1/2" Dia

Area of each set of valves per boiler 8.5 sq in Pressure to which they are adjusted 228 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

Smallest distance between boilers or uptakes and bunkers or woodwork 7'6" 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

Smallest internal dia. of boilers 15'6" Length 12'0" Shell plates: Material steel Tensile strength 29-33 tons

Thickness 1 1/2" Are the shell plates welded or flanged no Description of riveting: circ. seams end D.R. Lap.

Long. seams Y. R. D. B. S Diameter of rivet holes in circ. seams 17/16" Pitch of rivets 37/8"

Percentage of strength of circ. end seams plate 62.9 Percentage of strength of circ. intermediate seam plate

rivets 44.2 Working pressure of shell by Rules 222 lbs

Percentage of strength of longitudinal joint plate 85.18 rivets 86.1 combined 87.7

Thickness of butt straps outer 15/32" No. and Description of Furnaces in each Boiler Three "Deighton" type

Material steel Tensile strength 26-30 tons Smallest outside diameter 3'9 3/8"

Length of plain part top Thickness of plates crown 11/16" Description of longitudinal joint welded

Dimensions of stiffening rings on furnace or c.c. bottom bottom Working pressure of furnace by Rules 222 lbs

Diaphragm plates in steam space: Material steel Tensile strength 26-30 tons Thickness 15/16" Pitch of stays 20 3/4" x 17 1/4"

How are stays secured Double nuts Working pressure by Rules 221 lbs

Diaphragm plates: Material steel Tensile strength 26-30 tons Thickness 15/16" 27/32"

Minimum pitch of stay tubes in nests 10 1/2" Pitch across wide water spaces 14" Working pressure front 229 lbs

Diaphragm plates to combustion chamber tops: Material steel Tensile strength 28-32 tons Depth and thickness of girder

Centre 9 1/4" x 1 3/4" Length as per Rule 2'9 25/32" Distance apart 9" No. and pitch of stays

Each 3 @ 8" Working pressure by Rules 227 lbs Combustion chamber plates: Material steel

Tensile strength 26-30 tons Thickness: Sides 21/32" Back 21/32" Top Wimp 11/16" Bottom 15/16"

Pitch of stays to ditto: Sides 8 3/8" x 8" Back 8 1/2" x 8" Top Wimp 9" x 8" Are stays fitted with nuts or riveted over nuts

Working pressure by Rules 220 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 15/16"

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

Working Pressure 259 lbs Main stays: Material steel Tensile strength 28-32 tons

Diameter At body of stay, 3/4" No. of threads per inch 6 Area supported by each stay 357.93 sq ins

Working pressure by Rules 224 lbs Screw stays: Material steel Tensile strength 26-30 tons

Diameter At turned off part, 15/8" & 1 1/4" No. of threads per inch 9 Area supported by each stay 67 sq ins

Working pressure by Rules 227 lbs. Are the stays drilled at the outer ends no. Margin stays: Diameter ^{At turned off part,} 1 7/8" or ^{Over threads} 1 7/8"
 No. of threads per inch 9 Area supported by each stay 93 sq ins Working pressure by Rules 229 lbs.
 Tubes: Material Iron External diameter ^{Plain} 3" Thickness ^{8 W.G.} 3/8" 5/16" No. of threads per inch 9
 Pitch of tubes 4 1/4" x 4 1/8" Working pressure by Rules 250 lbs. Manhole compensation: Size of opening
 shell plate 16" x 12" Section of compensating ring
 Outer row rivet pitch at ends Job Bolt 4 3/8" No. of rivets and diameter of rivet holes
 Depth of flange if manhole flanged 130 3/8" 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
 stays Inner radius of crown Working pressure by Rules
 How connected to shell Size of doubling plate under dome Diameter of rivet holes and
 of rivets in outer row in dome connection to shell

Type of Superheater Smoke tube Manufacturers of Tubes Superheaters Ltd. Manchester
 Number of elements 60 each boiler Material of tubes solid drawn steel Steel forgings do.
 Material of headers steel Tensile strength 660 lbs. Steel castings do.
 the boiler be worked separately yes. 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 1.76 sq ins Are the safety valves fitted with easing gear yes. Working pressure at
 Rules approved plan. 220 lbs. Pressure to which the safety valves are adjusted 230 lbs. Hydraulic test press
 tubes 1000 lbs. forgings and castings 660 lbs. and after assembly in place 675 lbs. Are drain cock
 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.

The foregoing is a correct description,
 W. E. Orange
 DIRECTOR

Dates of Survey ^{During progress of work in shops - -}
 while building ^{During erection on board vessel - - -}
 Are the approved plans of boiler and superheater forwarded herewith no.
 (If not state date of approval.) 27-1-37. 22-4-37.
 Total No. of visits

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.) These Boilers have been constructed under Special Survey and in accordance with the approved plans for a working pressure of 220 lbs per sq inch. The materials and workmanship have been found good. Upon completion the Boilers were tested in the presence of the undersigned with hydraulic pressure 380 lbs per sq inch showed no signs of weakness and were found to be and sound in every respect at that pressure.

Survey Fee £ : : } When applied for, 19
 Travelling Expenses (if any) £ : : } When received, 19

J. Brooke Smith
 Engineer Surveyor to Lloyd's Register of Shipping

Committee's Minute FRI 1 OCT 1937
 Assigned Su Sea 32195

