

REPORT ON BOILERS

No. 17560

24 JUL 1936
16 MAY 1936

Received at London Office

Date of writing Report 4-5-1936 When handed in at Local Office 13-5-1936 Port of West Hartlepool

No. in Survey held at Hartlepool Date, First Survey 19-2-36 Last Survey 8-5-1936
Reg. Book.

on the Steam trawler ANGLE (Number of Visits 14) Gross 530 Tons Net 19-4

Master Built at South Bank By whom built Smiths Dock Co. Ltd. Yard No. 1005 When built 1936

Engines made at South Bank By whom made Smiths Dock Co. Ltd. Engine No. 463 When made 1936

Boilers made at Hartlepool By whom made Messrs Richardson Westgarth & Co. Ltd. Boiler No. 463 When made 1936

Nominal Horse Power Owners Hull Northern Fishing Co. Ltd. Port belonging to Hull

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

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

Total Heating Surface of Boilers 3,750 sq. ft. 2714 Is forced draught fitted yes Coal or Oil fired coal

No. and Description of Boilers One, single ended Working Pressure 225 lb.

Tested by hydraulic pressure to 387 lbs. Date of test 8-4-36 No. of Certificate 3840 Can each boiler be worked separately ✓

Area of Firegrate in each Boiler 62 sq. ft. No. and Description of safety valves to each boiler Pair Corburns Impurea High Lift.

Area of each set of valves per boiler { per Rule 7.05 as fitted 9.87 Pressure to which they are adjusted 230 lbs. 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 1'-0" Is oil fuel carried in the double bottom under boilers no

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

Largest internal dia. of boilers 15'5 15/16" Length 12'0" Shell plates: Material steel Tensile strength 29-33 tons

Thickness 1 7/32" Are the shell plates welded or flanged ✓ Description of riveting: circ. seams end D.R.

long. seams Y.R. D. B. S Diameter of rivet holes in { circ. seams 1 7/16" Pitch of rivets { inter. 3 7/8"

Percentage of strength of circ. end seams { plate 62.9 rivets 43.2 Percentage of strength of circ. intermediate seam { plate 85.18 rivets 84.74

Percentage of strength of longitudinal joint { plate 85.18 rivets 84.74 combined 87.27 Working pressure of shell by Rules 225.8 lbs.

Thickness of butt straps { outer 1 3/16" inner 1 5/16" No. and Description of Furnaces in each Boiler 3, Morrison

Material steel Tensile strength 26-30 tons Smallest outside diameter 44 3/8"

Length of plain part { top ✓ bottom ✓ Thickness of plates { crown 1 1/16" bottom 1 1/16" Description of longitudinal joint welded

Dimensions of stiffening rings on furnace or c.e. bottom ✓ Working pressure of furnace by Rules 227 lbs.

End plates in steam space: Material steel Tensile strength 26-30 tons Thickness 1 5/16" Pitch of stays 20" x 17 1/2"

How are stays secured double nuts & washers Working pressure by Rules 228 lbs.

Tube plates: Material { front steel back steel Tensile strength { 26-30 tons Thickness { 5 7/64"

Mean pitch of stay tubes in nests 11 1/4" Pitch across wide water spaces 14 1/4" Working pressure { front 228 lbs. back 227 lbs.

Girders to combustion chamber tops: Material steel Tensile strength 28-32 tons Depth and thickness of girder at centre 9 7/8" x 7/8" Length as per Rule 35 15/16" Distance apart 9" No. and pitch of stays in each 3 x 8 1/2" Working pressure by Rules 225 lbs. Combustion chamber plates: Material steel

Tensile strength 26-30 tons Thickness: Sides 1 1/16" Back 1 1/16" & 2 1/32" Top 2 3/32" Bottom 1"

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

Working pressure by Rules 228 lbs. Front plate at bottom: Material steel Tensile strength 26-30 tons Thickness 1 5/16"

Lower back plate: Material steel Tensile strength 26-30 tons Thickness 1 5/16"

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

Working Pressure 231 lbs. Main stays: Material steel Tensile strength 28-32 tons

Diameter { At body of stay, 3 1/4" & 3 1/8" No. of threads per inch 6 Area supported by each stay 357 sq. ins. 327 sq. ins.

Working pressure by Rules 229 lbs. 240 lbs. Screw stays: Material steel Tensile strength 26-30 tons

Diameter { At turned off part, 1 3/4" No. of threads per inch 9 Area supported by each stay 30.6 sq. ins.

Working pressure by Rules **237 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 **94.8 sq. ins.** Working pressure by Rules **239 lbs.**

Tubes: Material **Iron** External diameter ^{Plain} **3 1/4"** ✓ ^{Stay} **3 1/4"** ✓ Thickness ^{8 W.S.} **7/16"** ^{3/8"} **3/8"** ^{5/16"} **5/16"** No. of threads per inch **9.**

Pitch of tubes **4 1/2" x 4 1/2"** ✓ Working pressure by Rules **230 lbs.** Manhole compensation: Size of opening shell plate **20 1/2" x 14"** ✓ Section of compensating ring **36" x 32" x 1 1/32"** ✓ No. of rivets and diameter of rivet holes **30. 1 1/2 dia.** ✓

Outer row rivet pitch at ends **10 1/8"** ✓ Depth of flange if manhole flanged **3 1/2"** ✓ Steam Dome: Material **steel**

Tensile strength **26-30 tons** ✓ Thickness of shell **15/16"** ✓ Description of longitudinal joint **Lap, treble riveted** ✓

Diameter of rivet holes **1 3/16"** ✓ Pitch of rivets **4 1/4"** ✓ Percentage of strength of joint ^{Plate} **72.05** ^{Rivets} **73.7**

Internal diameter **36"** ✓ Working pressure by Rules **515 lbs.** Thickness of crown **1"** ✓ No. and diameter stays **✓** Inner radius of crown **36"** ✓ Working pressure by Rules **292 lbs.**

How connected to shell **by neck ring** ✓ Size of doubling plate under dome **neck ring, 1 1/8" thick** ✓ Diameter of rivet holes and pitch of rivets in outer row in dome connection to shell **1 3/16" x 9.07"** ✓

Type of Superheater **smoke tube** ✓ Manufacturers of ^{Tubes} **Superheater Co. Ltd.** ^{Steel castings}

Number of elements **64** Material of tubes **steel** Internal diameter and thickness of tubes **17 mm. 3 mm**

Material of headers **forged steel.** 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. Yes.**

Area of each safety valve **1.76 sq** Are the safety valves fitted with easing gear **Yes** Working pressure as per Rules **Apprx. 225 lbs.** Pressure to which the safety valves are adjusted **230 lbs.** Hydraulic test pressure tubes **castings** and after assembly in place **675 lbs.** Are drain cocks or 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,
For RICHARDSON'S PATENT STEEL BOILER MANUFACTURING CO. LTD.
P. J. McA Manufacture

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.} **21-12-35. 9-1-36.** (If not state date of approval.) Total No. of visits

Is this Boiler a duplicate of a previous case **yes.** If so, state Vessel's name and Report No. **W. Hpl reports No. 17555-6.**

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) **This Boiler has been constructed under Special Survey and in accordance with the approved plan for a working pressure of 225 lbs per square inch. The materials and workmanship have been found good. Upon completion the boiler was tested by hydraulic pressure 387 lbs per square inch with satisfactory results.**

The Boiler is to be forwarded to Middlesbrough for fitting on board a vessel.

This boiler has been securely fitted aboard and its safety valves adjusted under steam.

P. J. McA
21. 7. 36.

Survey Fee ... **£ 18 : 6 : 0** When applied for, **15-5-19-36**
Travelling Expenses (if any) £ ... When received, **3-6-36**

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

Committee's Minute **WED. 5 AUG 1936.**
Assigned **See Mal. J.E 15757**

