

REPORT ON BOILERS.

No. 17562

Received at London Office 22 MAY 1936

Date of writing Report 16-5-1936 When handed in at Local Office 19-5-1936 Port of West Hartlepool

No. in Reg. Book. Survey held at Hartlepool Date, First Survey 11-3-36 Last Survey 8-5-1936

on the Steam trawler Indian Star (Number of Visits 10) Tons {Gross 463 Net 169}

Master Built at South Bank By whom built Smiths Dock Co. La. Yard No. 999 When built 1926

Engines made at South Bank By whom made Smiths Dock Co. La. Engine No. 473 When made 1926

Boilers made at Hartlepool By whom made Richardson's Westgarth & Co. Ld. Boiler No. 473 When made 1936

Nominal Horse Power Owners Port belonging to

2500
2465

MULTITUBULAR BOILERS - MAIN, AUXILIARY, OR DONKEY

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

Total Heating Surface of Boilers 2,500 sq. ft. 2465 sq. ft. forced draught fitted no. Coal or Oil fired Coal

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

Tested by hydraulic pressure to 387 lbs. Date of test 8-5-36 No. of Certificate 3842 Can each boiler be worked separately

Area of Firegrate in each Boiler 60 sq. ft. No. and Description of safety valves to each boiler Pair Corburns J. H. L.

Area of each set of valves per boiler {per Rule 6.51 as fitted 9.8 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 or uptakes and bunkers 1'-0" 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 15' 6" Length 11' 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. Lap.

Long. seams J. R. D. B. S Diameter of rivet holes in {circ. seams 1 7/16" long. seams 1 1/2" Pitch of rivets {3 7/8" 10 1/8"

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

Percentage of strength of longitudinal joint {plate 85.18 rivets 84.7 combined 87.2 Working pressure of shell by Rules 225.8 lbs.

Thickness of butt straps {outer 1 3/16" inner 1 9/16" No. and Description of Furnaces in each Boiler 3, Moulson type 30 sq. ft.

Material steel Tensile strength 26-30 tons Smallest outside diameter 44 5/8"

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

Dimensions of stiffening rings on furnace or c.c. bottom Working pressure of furnace by Rules 225.4 lbs.

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

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

Tube plates: Material steel Tensile strength 28-32 tons Thickness {27/32"

Lean pitch of stay tubes in nests 10 1/16" Pitch across wide water spaces 14 1/2" x 9 1/4" Working pressure {front 234 lbs back 230 lbs.

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

centre 9 3/8" x 7 8" Length as per Rule 34 1/32" Distance apart 8" centre, 9" wings No. and pitch of stays

each 3 x 8" Working pressure by Rules 229 lbs. Combustion chamber plates: Material steel

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

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

Working pressure by Rules 230 lbs, 234 lbs, 228 lbs Front plate at bottom: Material steel Tensile strength 26-30 tons

Thickness 1" Lower back plate: Material steel Tensile strength 26-30 tons Thickness 15/16"

Pitch of stays at wide water space 15 1/2" x 8" Are stays fitted with nuts or riveted over nuts.

Working Pressure 237 lbs. Main stays: Material steel Tensile strength 28-32 tons

Diameter {At body of stay, 3 1/4" & 3" No. of threads per inch 6 Area supported by each stay 350 sq. ins & 297.5 sq. ins.

Working pressure by Rules 229 lbs & 226 lbs Screw stays: Material steel Tensile strength 26-30 tons

Diameter {At turned off part, 15/8" No. of threads per inch 9 Area supported by each stay 65 sq. ins.



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Working pressure by Rules **234 lbs.** Are the stays drilled at the outer ends **no** Margin stays: Diameter { At turned off part, or Over threads **1 7/8"** ✓
 No. of threads per inch **9** Area supported by each stay **90 sq. in.** Working pressure by Rules **236 lbs.** ✓
Tubes: Material **Solid drawn steel** External diameter { Plain **3 1/2"** ✓ Stay **3 1/2"** ✓ Thickness { **7/16"** ✓ **3/8"** ✓ **5/16"** ✓ No. of threads per inch **9** ✓
 Pitch of tubes **4 3/4" x 4 5/8"** Working pressure by Rules **260 lbs.** ✓ Manhole compensation: Size of opening in shell plate **14" x 20 1/2"** ✓ Section of compensating ring **36" x 32" x 1 7/32"** No. of rivets and diameter of rivet holes **30 x 1 1/2"** ✓
 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 **Y. R. Lap.** ✓
 Diameter of rivet holes **1 3/16"** Pitch of rivets **4 1/4"** Percentage of strength of joint { Plate **72** ✓ Rivets **73.7** ✓
 Internal diameter **36"** Working pressure by Rules **515 lbs.** ✓ Thickness of crown **1"** No. and diameter of stays ✓ Inner radius of crown **36"** Working pressure by Rules **292 lbs.** ✓
 How connected to shell **neck ring, riveted** ✓ Size of doubling plate under dome ✓ Diameter of rivet holes and pitch of rivets in outer row in dome connection to shell **1 5/16" x 9.07"** ✓

Type of Superheater **Smoke tube** ✓ Manufacturers of Tubes **The Superheater Co. Ltd. Manchester** ✓
 Number of elements **49** Material of tubes **steel forgings** ✓ Internal diameter and thickness of tubes **20 mm. 2 1/2 mm.** ✓
 Material of headers **steel forgings** ✓ Tensile strength **1"** ✓ Can the superheater be shut off and the boiler be worked separately **Yes** ✓
 Area of each safety valve **1.76 sq** ✓ Are the safety valves fitted with easing gear **Yes** ✓ Working pressure as per Rules **Approx. 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, **W. R. Forridge** Manufacturer. **DIRECTOR.**

Dates of Survey { During progress of work in shops - - } Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.) **Yes** ✓
 while building { During erection on board vessel - - - } Total No. of visits

Is this Boiler a duplicate of a previous case **Yes** If so, state Vessel's name and Report No. **Boiler 469. W. Appl. Rpt No. 17539.**

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 plans for a working pressure of 225 lbs per sq. inch. The materials and workmanship have been found good and upon completion the Boiler was tested by hydraulic pressure 387 lbs per sq. inch with satisfactory results.**

The Boiler will be forwarded to Middlesbrough for fitting on board vessel intended for.

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

P. J. McA.
Indb. 6.836

Survey Fee ... £ **16 : 12 : 0** When applied for, **21-5-1936**
 Travelling Expenses (if any) £ : : When received, **3-6-1936** **dup**

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

Committee's Minute **TUE. 25 AUG 1936**
 Assigned **See Indb. F. 15773**

