

REPORT ON BOILERS.

No. 97701

Received at London Office AUG - 5 1939

Date of writing Report

19

When handed in at

29th July 1939

Port of

NEWCASTLE-ON-TYNE

No. in Survey held at
Reg. Book.

Newcastle

Date, First Survey 22. April 1938 Last Survey 29th July 1939.

35327, on the

M.V. "TORINIA"

(Number of Visits —) Gross 10364
Tons Net 6178

Master Built at Newcastle By whom built Swan Hunter & Wigham Richardson Ltd Yard No. 1561. When built 1939.
Engines made at St Peter's Works Newcastle By whom made R & W Hawthorn Leslie & Co Ltd Engine No. 3956. When made 1939.
Boilers made at St Peter's Works By whom made R & W Hawthorn Leslie & Co Ltd Boiler No. 3956. When made 1939.
Boiler Horse Power 138.7 each. Owners Anglo Saxon Petroleum Co Ltd Port belonging to London.

MULTITUBULAR BOILERS ~~MAIN, AUXILIARY, OR~~ DONKEY.

Manufacturers of Steel The Steel Company of Scotland (Plates) Broomside Boiler Works (Furnaces) (Letter for Record 5.)
Total Heating Surface of Boilers 4160 sq ft. Is forced draught fitted Yes. Coal or Oil fired Oil and/or Gas Waste Gases
No. and Description of Boilers 2. Single Ended. Working Pressure 180 lb/sq in.
Tested by hydraulic pressure to 320 lb/sq in. Date of test 13-4-39 No. of Certificate 817 Can each boiler be worked separately Yes.
Area of Firegrate in each Boiler ✓ No. and Description of safety valves to each boiler 2 Double Spring loaded.
Area of each set of valves per boiler {per Rule 13.30" as fitted 14.130" Pressure to which they are adjusted 180 lb/sq in. Are they fitted with easing gear Yes.
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 No.
Smallest distance between shell of boiler and tank top plating 19'-6" above Tank Top Boilers fitted on Tank ✓ Is the bottom of the boiler insulated Yes.
Largest internal dia. of boilers 13'-0" Length 12'-3" Shell plates: Material Steel Tensile strength 28 to 32 tons DR. Exp.
Thickness 1 3/32" Are the shell plates welded or flanged neither Description of riveting: circ. seams {end 3.47" inter. 8" long. seams T.R. Double Butt Shape Diameter of rivet holes in {circ. seams 1 3/16" long. seams 1 3/16" Pitch of rivets 8"
Percentage of strength of circ. end seams {plate 65.7% rivets 47.8% Percentage of strength of circ. intermediate seam {plate 85.2% rivets 97.2% Working pressure of shell by Rules 183 lb/sq in.
Percentage of strength of longitudinal joint {plate 85.2% rivets 97.2% combined 89.8%
Thickness of butt straps {outer 2 1/32" inner 3/32" No. and Description of Furnaces in each Boiler Two Morrison Corrugated.
Material Steel Tensile strength 26 to 30 tons Smallest outside diameter 3'-8 5/8"
Length of plain part {top 9 1/16" bottom 9 1/16" Thickness of plates {crown 9 1/16" bottom 9 1/16" Description of longitudinal joint Welded.
Dimensions of stiffening rings on furnace or c.c. bottom none Working pressure of furnace by Rules 182.5 lb/sq in.
End plates in steam space: Material Steel Tensile strength 26 to 30 tons Thickness 1 1/8" Pitch of stays 19" x 17"
How are stays secured Nuts inside & outside Working pressure by Rules 181 lb/sq in.
Tube plates: Material {front Steel back Steel Tensile strength 26 to 30 tons Thickness {front 1" back 2 5/32" Working pressure {front 198 lb/sq in. back 255 lb/sq in.
Mean pitch of stay tubes in nests 9 1/4" Pitch across wide water spaces 13 3/4" Working pressure {front 198 lb/sq in. back 255 lb/sq in.
Girders to combustion chamber tops: Material Steel Tensile strength 28 to 32 tons Depth and thickness of girder at centre 2 @ 10" x 13 1/16" Length as per Rule 3'-1 1/2" Distance apart 10" No. and pitch of stays in each 3 @ 9" Working pressure by Rules 180.5 lb/sq in. Combustion chamber plates: Material Steel Tensile strength 26 to 30 tons Thickness: Sides 4 5/64" Back 4 5/64" Top 4 5/64" Bottom 1"
Pitch of stays to ditto: Sides 9" x 6 7/8" Back 8 3/8" x 7 1/4" Top 10" x 9" Are stays fitted with nuts or riveted over Nuts on Top & back diagonal stays Remainder riveted.
Working pressure by Rules 180 lb/sq in. Front plate at bottom: Material Steel Tensile strength 26 to 30 tons Thickness 1" Lower back plate: Material Steel Tensile strength 26 to 30 tons Thickness 2 7/32"
Pitch of stays at wide water space 15" x 8 3/8" Are stays fitted with nuts or riveted over Nuts.
Working Pressure 190 lb/sq in. Main stays: Material Steel Tensile strength 28 to 32 tons.
Diameter {At body of stay, or Over threads 3" at Back End 3 3/8" at Front No. of threads per inch 6 Area supported by each stay 3 1/6 sq ins.
Working pressure by Rules 212 lb/sq in. Screw stays: Material Steel Tensile strength 26 to 30 tons.
Diameter {At turned off part, or Over threads 1 1/2" cc sides back 1 3/4" cc top No. of threads per inch 9 Area supported by each stay 60 sq ins. c.c. sides 87.6 c.c. top

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Working pressure by Rules 208 lb/10" Are the stays drilled at the outer ends No Margin stays: Diameter { At turned off part, 1 3/4" or Over threads 1 3/4" ✓
No. of threads per inch 9 ✓ Area supported by each stay 90.9 sq ins. Working pressure by Rules 200 lb/10" ✓
Tubes: Material Iron External diameter { Plain 2 3/4" ✓ Stay 2 3/4" ✓ Thickness { 3/8" + 5/16" ✓ No. of threads per inch 9 ✓
Pitch of tubes 4" x 3 7/8" Working pressure by Rules Plain 215 lb/10" Stay 217 lb/10" Manhole compensation: Size of opening in shell plate 21" x 17" ✓ Section of compensating ring 21" x 1 1/2" ✓ No. of rivets and diameter of rivet holes 38 @ 1 1/4" ✓
Outer row rivet pitch at ends 8 3/8" ✓ Depth of flange if manhole flanged 3 5/8" ✓ 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 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 None ✓ Manufacturers of { Tubes _____ Steel forgings _____ 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 _____ forgings and 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 22 inclusive for boilers been complied with Yes ✓

The foregoing is a correct description,
R. & W. HAWTHORN, LESLIE & CO. LIMITED Manufacturer.

Dates of Survey { During progress of work in shops - - } See Survey Report Are the approved plans of boiler and superheater forwarded herewith 5/4/28 (If not state date of approval.)
while building { During erection on board vessel - - - }
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.)
The boilers have been constructed under Special Survey in accordance with the Society's Rules & approved plan. The materials & workmanship are sound and good. The boilers have been efficiently installed on a flat at the after side of Engine Room and their safety valves were adjusted under steam to the approved working pressure.

Survey Fee ... £ For Fee
Travelling Expenses (if any) £ See Survey Report
When applied for, 19____
When received, 19____

L. Peskett & A. Watt
Engineer Surveyors to Lloyd's Register of Shipping.

Committee's Minute THE 15 AUG 1928
Assigned See F.E. Mackay r/h.