

## REPORT ON BOILERS.

Received at London Office.

15 APR 1947

Port of NEWCASTLE-ON-TYNE

No. of writing Report.....19..... When handed in at Local Office.....150 APR 1947.....

No. in Survey held at Wallsend, & HEBBURN-ON-TYNE Date, First Survey 21<sup>st</sup> OCTOBER, 1946 Last Survey 3<sup>rd</sup> APRIL, 1947No. of Book. 4448 on the M.V. "AURIS" (Number of Visits.....15.....) Gross 8220.89 Tons Net 4701.33Built at Hebburn, By whom built Hawthorn, Leslie & Co. Ld. Yard No. 686 When built 1948Engines made at St. Peter's, Newcastle By whom made Hawthorn, Leslie & Co. Ld. Engine No. 4031 When made 1948Boilers made at Wallsend By whom made N. E. Mar. Eng. Co. (1938) Ld. Boiler No. 3157 When made 1947Nominal Horse Power  $\frac{4160}{15} = 277$  Owners Anglo Saxon Petroleum Co. Port belonging to LondonMULTITUBULAR BOILERS ~~MAIN, AUXILIARY, OR~~ DONKEY.

Manufacturers of Steel Colvilles Lts. Glasgow. (Letter for Record S.)

Total Heating Surface of Boilers 4160 sq. ft. Is forced draught fitted Yes Coal or Oil fired Oil fired

No. and Description of Boilers 2 Single ended Working Pressure 180 LBS.

Tested by hydraulic pressure to 320 lbs Date of test 20-3-47 No. of Certificate N°1239. Can each boiler be worked separately Yes

Area of Firegrate in each Boiler 2 g 2½" Imp'd High Lift.

Area of each set of valves per boiler per Rule 8.0 sq. in. Pressure to which they are adjusted 180 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 MAIN BOILER.

Smallest distance between boilers or uptakes and bunkers or woodwork ✓ 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 Yes

Largest internal dia. of boilers 13'-0" Length 12'-4" Shell plates: Material Stl Tensile strength 29-33 tons

Thickness 1 3/64" Are the shell plates welded or flanged No Description of riveting: circ. seams end D.R. inter NIL

long. seams T.R. 5th butt straps Diameter of rivet holes in circ. seams 1 1/8" Pitch of rivets 3 1/2" 7 1/2"

Percentage of strength of circ. end seams plate 65.4 rivets 46.3 Percentage of strength of circ. intermediate seam plate NIL rivets NIL

Percentage of strength of longitudinal joint plate 85.6 rivets 90.2 Working pressure of shell by Rules 182 lbs

Thickness of butt straps outer 13/16" inner 15/16" No. and Description of Furnaces in each Boiler 2 Cf. (Morison type)

Material Stl. Tensile strength 26-30 tons Smallest outside diameter 3'-8 3/8"

Length of plain part top 13/16" bottom 15/16" Thickness of plates crown 9/16" bottom 9/16" Description of longitudinal joint fine welded

Dimensions of stiffening rings on furnace or c.c. bottom ✓ Working pressure of furnace by Rules 183 lbs

End plates in steam space: Material Stl Tensile strength 26-30 tons Thickness 1 9/32" Pitch of stays 1 1/11" x 1 1/5"

How are stays secured Nutted inside & outside Working pressure by Rules 187 lbs

Tube plates: Material front Stl back Stl Tensile strength 26-30 tons Thickness front 29/32" back 29/32"

Mean pitch of stay tubes in nests 9 7/8" Pitch across wide water spaces 13 3/4" x 7 3/4" Working pressure front 225 lbs back 223 lbs

Girders to combustion chamber tops: Material Stl Tensile strength 29-33 tons Depth and thickness of girder

at centre 10" x 27/32" dble Length as per Rule 3'-1 33/64" Distance apart 10 1/2" No. and pitch of stays

in each 3 at 9" Working pressure by Rules 185 lbs Combustion chamber plates: Material Stl

Tensile strength 26-30 tons Thickness: Sides 45/64" Back 45/64" Top 45/64" Bottom 1"

Pitch of stays to ditto: Sides 9 x 6 7/8" Back 7 1/4" x 8 3/8" Top 9" x 10 1/2" Are stays fitted with nuts or riveted over margin stays - NUTTED Remainder - RIVETED.

Working pressure by Rules 180 lbs min. Front plate at bottom: Material Stl. Tensile strength 26-30 tons

Thickness 29/32" Lower back plate: Material Stl Tensile strength 26-30 tons Thickness 7/8"

Pitch of stays at wide water space 15" x 8 3/8" Are stays fitted with nuts or riveted over margin stays - nutted Remainder - riveted.

Working pressure 182 lbs Main stays: Material Stl Tensile strength 28-32 tons

Diameter At body of stay 3" Over threads 3 1/4" No. of threads per inch 6 Area supported by each stay 391 sq. ins.

Working pressure by Rules ✓ Screw stays: Material Stl. Tensile strength 26-30 tons

Diameter At turned off part 1 1/2" Over threads 1 1/2" No. of threads per inch 9 Area supported by each stay 61.875 sq. ins.

CONT'D OVER

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Working pressure by Rules 202 lb Are the stays drilled at the outer ends No. ✓ Margin stays: Diameter { At turned off part. 1 3/4" ✓  
or Over threads 2" ✓  
No. of threads per inch 9 ✓ Area supported by each stay 93.1 sq in Working pressure by Rules 193 lb ✓  
Tubes: Material Seamless STEEL ✓ External diameter { Plain 2 3/4" ✓ Thickness { 9.49 ✓  
Stay 3/8" ✓ No. of threads per inch 9 ✓  
Pitch of tubes 4" x 3 7/8" ✓ Working pressure by Rules 200 lb ✓ Manhole compensation: Size of opening in 4 1/2" ✓  
shell plate 20 1/2" x 16 1/2" ✓ Section of compensating ring 8 1/2" x 1 1/8" ✓ No. of rivets and diameter of rivet holes 17 of 1 1/2" dia. ✓  
Outer row rivet pitch at ends 10 1/2" ✓ Depth of flange if manhole flanged 3 3/4" ✓ Steam Dome: NIL ✓  
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 NIL ✓ 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,

Director Manufacturer

Dates of Survey { During progress of work in shops - 1946 DEC 21 DEC 9 1947 JAN 16, 23, 31 Are the approved plans of boiler and superheater forwarded herewith Yes ✓  
while building { During erection on board vessel - FEB. 10, 21, MAR 4, 5, 20, 21, 24, 25, APR 1, 3 (If not state date of approval.)  
Total No. of visits 15 (Appd 30-9-46)

Is this Boiler a duplicate of a previous case Yes ✓ If so, state Vessel's name and Report No. M.V. AURICULA. N.W. Rpt. 103679  
(N.E.M. Boiler No 3107.) Hawthorn Leslie Yard No 671.

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

These 2 Donkey Boilers have been constructed under special survey in accordance with the approved plan and the Society's Rules, and the material & workmanship are good.

The Boilers have been sent to Hetherburn to be fitted on board.

The boiler have been efficiently installed on board, examined under steam & the safety valves adjusted to the approved pressure.

J.A. Ode Newcastle-a-Tyne

Survey Fee ... £ 39: 10/6 When applied for 11/4 APR 1947  
Travelling Expenses (if any) £ : : When received 19

A. Watts

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute ED. 13 OCT. 1948

Assigned See minute on fe. mach. rpt.

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