

# REPORT ON BOILERS.

Received at London Office

Date of writing Report 19 When handed in at Local Office 27.1.1943 Port of **NEWCASTLE-ON-TYNE**

No. in Reg. Book. Survey held at **South Shields** Date, First Survey **2 June 1942** Last Survey **11 Jan 1943**

86331 on the **S.S. EMPIRE FORTUNE**

(Number of Visits) Gross **6140.31** Tons Net **4103.21**

Built at **S. Shields** By whom built **J. Readhead & Sons Ltd** Yard No. **531** When built **1943**  
Engines made at **South Shields** By whom made **J. Readhead & Sons Ltd** Engine No. **531** When made **1943**  
Boilers made at **South Shields** By whom made **J. Readhead & Sons Ltd** Boiler No. **531** When made **1943**  
Nominal Horse Power Owners **Ministry of War Transport** Port belonging to **S. Shields**

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

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

Total Heating Surface of Boilers **1950 sq** Is forced draught fitted **Yes** Coal or Oil fired **Coal**

No. and Description of Boilers **One single ended multitubular** Working Pressure **220 lbs sq**

Tested by hydraulic pressure to **380 lbs sq** Date of test **7-12-42** No. of Certificate **1025** Can each boiler be worked separately **Yes**

Area of Firegrate in each Boiler **47 sq** No. and Description of safety valves to each boiler **2 Double spring loaded** H.L.

Area of each set of valves per boiler (per Rule **6.94 sq** as fitted **7.08 sq**) Pressure to which they are adjusted **220 lbs sq** Are they fitted with easing gear **Yes**

In case of donkey boilers, state whether steam from main boilers can enter the donkey boiler **Yes**

Smallest distance between boilers or uptakes and bunkers or woodwork **2'-2"** Is oil fuel carried in the double bottom under boilers **No**

Smallest distance between shell of boiler and tank top plating **2'-2"** Is the bottom of the boiler insulated **Yes**

Largest internal dia. of boilers **13'-6 3/8"** Length **11'-9"** Shell plates: Material **S.M. Steel** Tensile strength **29-30 Tons sq**

Thickness **1 5/16"** Are the shell plates welded or flanged **Yes** Description of riveting: circ. seams (end **D.R.L.J.** inter. **4 1/4"**)

long. seams **T.R.D.B.S.** Diameter of rivet holes in (circ. seams **1 3/8"** long. seams **1 3/8"**) Pitch of rivets **9 1/4"**

Percentage of strength of circ. end seams (plate **67.7** rivets **42.2**) Percentage of strength of circ. intermediate seam (plate **85.13** rivets **90.9**)

Percentage of strength of longitudinal joint (plate **89.4** rivets **89.4**)

Thickness of butt straps (outer **1"** inner **1 1/8"**) No. and Description of Furnaces in each Boiler **3 Deighton Type**

Material **S.M. Steel** Tensile strength **26-30 Tons sq** Smallest outside diameter **3'-2 15/16"**

Length of plain part (top **19"** bottom **32"**) Thickness of plates (crown **19"** bottom **32"**) Description of longitudinal joint **Yes**

Dimensions of stiffening rings on furnace or c.c. bottom **Yes**

End plates in steam space: Material **S.M. Steel** Tensile strength **26-30 Tons sq** Thickness **1 3/16"** Pitch of stays **17" x 19"**

How are stays secured **Double nuts & washers outside (11 days 1 thick)**

Tube plates: Material (front **S.M. Steel** back **S.M. Steel**) Tensile strength (front **26-30 Tons sq** back **26-30 Tons sq**) Thickness **15/16"**

Mean pitch of stay tubes in nests **9 5/8"** Pitch across wide water spaces **14"**

Girders to combustion chamber tops: Material **S.M. Steel** Tensile strength **29-30 Tons sq** Depth and thickness of girder at centre **8 1/2" x 1 3/4"**

Length as per Rule **2'-7 1/2"** Distance apart **9 7/8"** No. and pitch of stays in each **20 9"**

Combustion chamber plates: Material **S.M. Steel** Tensile strength **26-30 Tons sq** Thickness: Sides **3/4"** Back **3/4"** Top **3/4"** Bottom **7/8"**

Pitch of stays to ditto: Sides **9 3/4" x 9"** Back **10" x 8 3/4"** Top **9" x 9 7/8"** Are stays fitted with nuts or riveted over **Nuts**

Front plate at bottom: Material **S.M. Steel** Tensile strength **26-30 Tons sq** Thickness **15/16"**

Lower back plate: Material **S.M. Steel** Tensile strength **26-30 Tons sq** Thickness **7/8"**

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

Main stays: Material **S.M. Steel** Tensile strength **28-32 Tons sq**

Diameter (At body of stay **3 1/8"** or Over threads **3 1/8"**) No. of threads per inch **6**

Screw stays: Material **S.M. Steel** Tensile strength **26-30 Tons sq**

Diameter (At turned off part **1 7/8"** or Over threads **1 7/8"**) No. of threads per inch **9**



Are the stays drilled at the outer ends No. Margin stays: Diameter <sup>At turned off part,</sup> 2" <sub>or Over threads</sub>

No. of threads per inch 9

Tubes: Material Iron External diameter <sup>Plain</sup> 3" <sub>Stay</sub> Thickness <sup>S.L.S.G.</sup> 5/16" - 3/8" No. of threads per inch 9

Pitch of tubes 11 1/2" x 8 1/4" 4 1/2" x ? Manhole compensation: Size of opening in shell plate 16 x 12 Section of compensating ring 8" x 1 5/16" No. of rivets and diameter of rivet holes 202 3/8"

Outer row rivet pitch at ends 9 1/4" Depth of flange if manhole flanged  Steam Dome: Material

Tensile strength  Thickness of shell  Description of longitudinal joint

Diameter of rivet holes  Pitch of rivets  Percentage of strength of joint <sup>Plate</sup>  <sub>Rivets</sub>

Internal diameter  Thickness of crown  No. and diameter of stays

How connected to shell  Inner radius of crown

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**

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 \_\_\_\_\_

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 \_\_\_\_\_

**FOR JOHN READHEAD & SONS, LTD.**

The foregoing is a correct description,

H. M. Coatsworth Director, Manufacturer.

Dates of Survey <sup>During progress of work in shops - -</sup> \_\_\_\_\_ <sub>while building</sub> <sup>During erection on board vessel - - -</sup> \_\_\_\_\_

See Incky Report

Are the approved plans of boiler and superheater forwarded herewith 25-2-42 (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. EMPIRE CLOUGH. 100461

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

The boiler has been built under special survey in accordance with rules requirements & approved plans. Materials & workmanship are good. Hydraulic test satisfactory. It has been efficiently installed & fixed in vessel, examined under steam & the safety valves adjusted to the approved pressure.

Survey Fee ... £ : \_\_\_\_\_ When applied for, 19 \_\_\_\_\_

Travelling Expenses (if any) £ See Incky Report : \_\_\_\_\_ When received, 19 \_\_\_\_\_

J. H. Matthews  
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

FRI, 5 MAR 1943

Assigned

See Nwc. 26. 101040



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