

REPORT ON BOILERS.

No. 103276

Date of writing Report.....19... When handed in at Local Office...8...11...19...45 Port of **NEWCASTLE-ON-TYNE**

No. in Reg. Book. Survey held at **Wallsend on Tyne** Date, First Survey. **(1943) Nov. 2nd** Last Survey **Oct. 31st 45**

on the **4s EMPIRE HONDURAS** (Number of Visits...90)

Master..... Built at **Sunderland** By whom built **Short Bros. Ld.** Yard No. **486** When built **1945-10**

Engines made at **Sunderland** By whom made **Geo. Clark & Co (1938) Ld.** Engine No. **3054** When made **1943**

Boilers made at **Wallsend** By whom made **N.E. Mar. Eng. Co (1938) Ld.** Boiler No. **3081** When made **1945**

Nominal Horse Power..... Owners **Min. of War Transport.** Port belonging to **Sunderland**

MULTITUBULAR BOILERS MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel **Steel Company of Scotland.**

Total Heating Surface of Boilers **7248 sq. ft.** (Letter for Record **S.**)

No. and Description of Boilers **3. S.B. (S.F.)** Is forced draught fitted **Yes** Coal or Oil fired **Coal.**

Tested by hydraulic pressure to **380 lb** Date of test **P. 12-3-45** No. of Certificate **1146.** Working Pressure **220 lb/sq. in.**

Area of Firegrate in each Boiler **55 sq. ft.** No. and Description of safety valves to each boiler **Two of 2 1/2" dia. Cochran's Imp. High Lift.**

Area of each set of valves per boiler { per Rule **6.68 sq. in.** as fitted **7.94 "** Pressure to which they are adjusted **225 lb for 220 lb.** 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 **18"** Is oil fuel carried in the double bottom under boilers **No.**

Smallest distance between shell of boiler and tank top plating **22 5/8"** Is the bottom of the boiler insulated **Yes**

Largest internal dia. of boilers **15'-0 1/2"** Length **11'-7 1/2"** Shell plates: Material **Stl.** Tensile strength **29 to 33 tons**

Thickness **1 1/2"** Are the shell plates welded or flanged **No.** Description of riveting: circ. seams { end **D.R.** inter **nil.**

long. seams **T.R. 80 lb. butt straps** Diameter of rivet holes in { circ. seams **1 1/2"** long. seams **1 1/2"** Pitch of rivets { **4 5/8"** **10 3/8"**

Percentage of strength of circ. end seams { plate **63.5** rivets **46.2** Percentage of strength of circ. intermediate seam { plate **85.5** rivets **86.2** combined **88.3.** Working pressure of shell by Rules **225 lb/sq. in.**

Percentage of strength of longitudinal joint { plate **85.5** rivets **86.2** combined **88.3.**

Thickness of butt straps { outer **1 1/2"** inner **1 1/4"**

Material **Stl.** No. and Description of Furnaces in each Boiler **3 C.f. (Deighton type)** Tensile strength **26 to 30 tons** Smallest outside diameter **3'-9 3/4"**

Length of plain part { top **✓** bottom **✓** Thickness of plates { crown **1 1/16"** bottom **1 1/16"** Description of longitudinal joint **Fire weld.**

Dimensions of stiffening rings on furnace or c.c. bottom **Nil** Working pressure of furnace by Rules **220 lb/sq. in.**

End plates in steam space: Material **Stl.** Tensile strength **26 to 30 tons** Thickness **1 1/32"** Pitch of stays **19 3/4" x 19 5/8"**

How are stays secured **Nutted inside & outside** Working pressure by Rules **239 lb/sq. in.** Thickness **15/16"** **25/32"**

Tube plates: Material { front **Stl.** back **Stl.** Tensile strength { **26 to 30 tons** Working pressure by Rules **239 lb/sq. in.** Thickness { **15/16"** **25/32"**

Mean pitch of stay tubes in nests **9 3/4"** Pitch across wide water spaces **14" x 4 5/8"** Working pressure { front **229 lb/sq. in.** back **230 lb/sq. in.**

Girders to combustion chamber tops: Material **S.** Tensile strength **28 to 32 tons** Depth and thickness of girder at centre **10 5/8" x 1 1/2" dble** Length as per Rule **2'-9 1/2"** Distance apart **9 1/4"**

in each **3 @ 8"** Working pressure by Rules **227 lb/sq. in.** Combustion chamber plates: Material **Stl.** Tensile strength **26 to 30 tons** Thickness: Sides **1 1/16"** Back **1 1/16"** Top **1 1/16"** Bottom **7/8"**

Pitch of stays to ditto: Sides **8" x 9 1/4"** Back **8" x 9 1/4"** Top **8" x 9 1/4"** Are stays fitted with nuts or riveted over **with nuts**

Working pressure by Rules **221 lb/sq. in.** Front plate at bottom: Material **Stl.** Tensile strength **26 to 30 tons** Thickness **15/16"** Lower back plate: Material **Stl.** Tensile strength **26 to 30 tons** Thickness **27/32"**

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

Working pressure **223 lb/sq. in.** Main stays: Material **Stl.** Tensile strength **28 to 32 tons** Diameter { At body of stay **3 1/2"** Over threads **3 1/2"** No. of threads per inch **6.** Area supported by each stay **387.6 sq. in.**

Working pressure by Rules **239 lb/sq. in.** Screw stays: Material **Stl.** Tensile strength **26 to 30 tons** Diameter { At turned off part **1 3/4"** Over threads **1 3/4"** No. of threads per inch **9.** Area supported by each stay **74 sq. in.**

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Working pressure by Rules 245 lb. Are the stays drilled at the outer ends No Margin stays: Diameter { At turned off part 1 7/8"
 No. of threads per inch 9. Area supported by each stay 93 sq in. Working pressure by Rules 230 lb.
 Tubes: Material S.D. Stl. External diameter { Plain 3" Thickness { 8. W.G. No. of threads per inch 9.
 Pitch of tubes 4 1/4" x 4 1/8" Working pressure by Rules 3/8 250 lb. 5/16 235 lb. Manhole compensation: Size of opening in
 shell plate Nil Section of compensating ring ✓ No. of rivets and diameter of rivet holes ✓
 Outer row rivet pitch at ends ✓ Depth of flange if manhole flanged ✓ Steam Dome: Material 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 N.E.M. Smoketube Manufacturers of { Tubes Tubes Ltd.
 Steel forgings Appleby + Frodingham Steel Co
 Steel castings ✓
 Number of elements 177. Material of tubes S.D. Stl. Internal diameter and thickness of tubes 15 m/m. x 2 1/2 m/m.
 Material of headers Wrt. Steel Tensile strength 26-30 tons Thickness 1 1/8" Can the superheater be shut off and
 the boiler be worked separately Yes 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 3.1416 sq. in. (one of 2" dia) Are the safety valves fitted with easing gear Yes Working pressure as per
 Rules 220 lb. Pressure to which the safety valves are adjusted 225 lb. Hydraulic test pressure:
 tubes 1500 lb. forgings and castings 660 lb. and after assembly in place 440 lb. 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 NORTH EASTERN MARINE ENGINEERING CO. (1930) LTD.
 The foregoing is a correct description,

John Neill

DIRECTOR.

Manufacturer.

Dates of Survey { During progress of work in shops - -
 while building { During erection on board vessel - - -

See Machinery report.

Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.) 17-11-43

Total No. of visits ✓

Superheater - N.E.M. Standard type

Is this Boiler a duplicate of a previous case Yes

If so, state Vessel's name and Report No. Empire Nairobi 102835.

Short Bros. Yard No 484

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

These Boilers have been constructed and installed under special survey in accordance with the approved plans, specification and the Society's Rules, and the materials and workmanship are good.

The Boilers were afterwards tested under steam under working conditions with satisfactory results.

See also Machy. Rpt 4.

Survey Fee ... £ See Machy Rpt 4.
 Travelling Expenses (if any) £ : : ✓

When applied for, 19...
 When received, 19...

A. Watt.

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRI 30 NOV 1945

Assigned See F.E. machy. rpt