

REPORT ON BOILERS.

No. 99549

23 JUN 1941

Received at London Office

Date of writing Report 19 When handed in at Local Office 6/6/1941 Port of **NEWCASTLE-ON-TYNE**

No. in Reg. Book *AS* Survey held at **Newcastle on Tyne** Date, First Survey **3 June 1940** Last Survey **31/5/1941**

on the **S/S "EMPIRE FOAM."** (Number of Visits) Gross **7047** Tons Net **5178**

Master Built at **Newcastle** By whom built **Swan, Hunter & Wigham Richardson Ltd** Yard No. **1694** When built **1941-**

Engines made at **Newcastle** By whom made **ditto.** Engine No. **1694** When made **do**

Boilers made at **do** By whom made **ditto.** Boiler No. **1694** When made **do**

Nominal Horse Power Owners Port belonging to **Newcastle**

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel **Steel Coy of Scotland, & Colvilles Ltd** (Letter for Record **S.**)

Total Heating Surface of Boilers **6080 sqft.** Is forced draught fitted **Yes** Coal or Oil fired **Coal**

No. and Description of Boilers **Two Single ended.** Working Pressure **220 lbs**

Tested by hydraulic pressure to **380 lbs** Date of test **18/4/41** No. of Certificate **N°890** Can each boiler be worked separately **Yes**

Area of Firegrate in each Boiler **77 sqft** No. and Description of safety valves to each boiler **Two 2 1/2 dia Cockburn's Imp. high lift.**

Area of each set of valves per boiler {per Rule **8.65 sq in** as fitted **9.8** " " Pressure to which they are adjusted **220** Are they fitted with easing gear **Yes**

In case of donkey boilers, state whether steam from main boilers can enter the donkey boiler **No donkey boiler**

Smallest distance between boilers or uptakes and bunkers or woodwork **17"** Is oil fuel carried in the double bottom under boilers **No**

Smallest distance between shell of boiler and tank top plating **23 1/4"** Is the bottom of the boiler insulated **Yes**

Largest internal dia. of boilers **16'-3"** Length **12'-0"** Shell plates: Material **Steel** Tensile strength **30 to 34 tons**

Thickness **1 33/64** Are the shell plates welded or flanged **No** Description of riveting: circ. seams {end **D.R. lap** inter. **—** long. seams **T.R. Dble butt straps** Diameter of rivet holes in {circ. seams **19/16** long. seams **19/16** Pitch of rivets { **4.60** **10.50**

Percentage of strength of circ. end seams {plate **66.03** rivets **42.17** Percentage of strength of circ. intermediate seam {plate **85.11** rivets **86.0** combined **87.55** Working pressure of shell by Rules **221 lbs**

Percentage of strength of longitudinal joint {plate **85.11** rivets **86.0** combined **87.55** Working pressure of shell by Rules **221 lbs**

Thickness of butt straps {outer **1 5/32** inner **1 9/32** No. and Description of Furnaces in each Boiler **Four - Dighton corrugated.**

Material **Steel** Tensile strength **26 to 30 tons** Smallest outside diameter **41"**

Length of plain part {top **5 1/4"** bottom **6 to 8"** Thickness of plates {crown **5/8"** bottom **3/8"** Description of longitudinal joint **Fire weld.**

Dimensions of stiffening rings on furnace or c.c. bottom **None** Working pressure of furnace by Rules **222 lbs.**

End plates in steam space: Material **Steel** Tensile strength **26 to 30 tons** Thickness **1 1/32"** Pitch of stays **20 1/2" x 14"**

How are stays secured **Nuts inside & outside** Working pressure by Rules **225 lbs**

Tube plates: Material {front **Steel** back **—** Tensile strength { **26 to 30 tons** Thickness { **1 1/32"** **27/32"**

Mean pitch of stay tubes in nests **10 5/8"** Pitch across wide water spaces **14"** Working pressure {front **274 lbs** back **227 lbs.**

Girders to combustion chamber tops: Material **Steel** Tensile strength **28 to 32 tons** Depth and thickness of girder at centre **10 1/2" x 25/32" x two** Length as per Rule **34 7/16"** Distance apart **10"** No. and pitch of stays in each **Three @ 8"** Working pressure by Rules **224 lbs** Combustion chamber plates: Material **Steel**

Tensile strength **26 to 30 tons** Thickness: Sides **3/4"** Back **23/32"** Top **3/4"** Bottom **3/4"**

Pitch of stays to ditto: Sides **8" x 10"** Back **8 1/2" x 9"** Top **8" x 10"** Are stays fitted with nuts or riveted over **Nuts**

Working pressure by Rules **221 lbs min.** Front plate at bottom: Material **Steel** Tensile strength **26 to 30 tons**

Thickness **1 1/32"** Lower back plate: Material **Steel** Tensile strength **26 to 30 tons** Thickness **15/16"**

Pitch of stays at wide water space **14" x 9 1/4"** Are stays fitted with nuts or riveted over **Nuts**

Working Pressure **256 lbs.** Main stays: Material **Steel** Tensile strength **28 to 32 tons**

Diameter {At body of stay, **2 1/8"** or Over threads **—** No. of threads per inch **6.** Area supported by each stay **275 sq in**

Working pressure by Rules **221 lbs** Screw stays: Material **Steel** Tensile strength **26 to 30 tons**

Diameter {At turned off part, **1 3/4"** or Over threads **—** No. of threads per inch **9** Area supported by each stay **78 sq in**

Working pressure by Rules 232^{lb} Are the stays drilled at the outer ends No Margin stays: Diameter ^{At turned off part.} 1 3/4 + 2
 No. of threads per inch 9 Area supported by each stay 107.2 sq in Working pressure by Rules 230^{lb}
 Tubes: Material Steel External diameter ^{Plain} 3" Thickness ^{Stay} 8 W.S. No. of threads per inch 9
 Pitch of tubes 4 1/4" x 4 1/4" Working pressure by Rules 225^{lb} Manhole compensation: Size of opening in
 shell plate 20" x 16" Section of compensating ring (1 3/16 - 1/16) x 2 x 1 3/16" No. of rivets and diameter of rivet holes 38 of 1/16"
 Outer row rivet pitch at ends 10 1/2" Depth of flange if manhole/flanged 3" 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} _____
 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 of
 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, LTD.
 G. J. Swamy Manufacturer

Dates of Survey ^{During progress of} work in shops - - } See Mchly Rpt 4 Are the approved plans of boiler and superheater forwarded herewith 15/5/40
^{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.)
 These Boilers have been constructed under Special Survey in accordance with the approved plans and the Society's Rules, and the materials and workmanship are good. The Boilers have been satisfactorily installed on board the vessel and tested under working conditions with satisfactory results.
 See also Mchly Rpt H.

Survey Fee £ See Mchly Rpt 4 When applied for, See Mchly Rpt 4
 Travelling Expenses (if any) £ : : When received, 19

A Watt
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute TUE. 1 JUL 1941
 Assigned See Inv. No. 99549

