

REPORT ON BOILERS.

No. 33,439

20 JUL 1942

Received at London Office

Date of writing Report 19 When handed in at Local Office 17 JUL 1942 Port of **SUNDERLAND.**

No. in Survey held at **SUNDERLAND.** Date, First Survey Last Survey July 14 1942
 Reg. Book. on the **S/S EMPIRE SOUTHEY** (Number of Visits) Tons { Gross 7041 Net 4954

Built at **Sunderland** By whom built **Short Bros, Ltd.** Yard No. **471** When built **1942**

Engines made at **do.** By whom made **M. E. Marine Eng. Co. (1938), Ltd** Engine No. **4000** When made **1942**

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

Nominal Horse Power **510** Owners **M. O. W. T. (W. Runciman & Co Ltd)** Port belonging to **Sunderland**

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

Manufacturers of Steel **Steel Coy of Scotland** (Letter for Record **s**)

Total Heating Surface of Boilers **7248 sq ft** Is forced draught fitted **yes** Coal or Oil fired **coal**

No. and Description of Boilers **3 Single Ended Cylindrical** Working Pressure **220 lbs**

Tested by hydraulic pressure to **380 lbs** Date of test **7.5.42** No. of Certificate **4423** Can each boiler be worked separately **yes**

Area of Firegrate in each Boiler **55 sq ft** No. and Description of safety valves to each boiler **3 Improved High Lift**

Area of each set of valves per boiler { per Rule **6.5 sq ft** as fitted **7.94 sq ft** Pressure to which they are adjusted **220 lbs** Are they fitted with easing gears **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 **25"** Is the bottom of the boiler insulated **yes**

Largest internal dia. of boilers **15'-0 1/16"** Length **11'-8 1/32"** Shell plates: Material **Steel** Tensile strength **29/33**

Thickness **1 15/32"** Are the shell plates welded or flanged **no** Description of riveting: circ. seams { end **D.R.L.** inter. **—**

long. seams **T.R.D.B.S.** Diameter of rivet holes in { circ. seams } **1 1/2"** Pitch of rivets { **4 1/8"** long. seams } **10 3/8"**

Percentage of strength of circ. end seams { plate **63.6** rivets **46.1** Percentage of strength of circ. intermediate seam { plate **85.5** rivets **86.2**

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

Thickness of butt straps { outer **1 1/8"** inner **1 1/4"** No. and Description of Furnaces in each Boiler **3 Saighton: Stephen Jursley necks**

Material **Steel** Tensile strength **26/30** 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 **weld**

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

End plates in steam space: Material **Steel** Tensile strength **26/30** Thickness **1 13/32"** Pitch of stays **19 3/4" x 19 5/8"**

How are stays secured **double nuts**

Tube plates: Material { front **Steel** back **Steel** Tensile strength { **26/30** Thickness { **15/16"** front **25/32"** back **25/32"**

Mean pitch of stay tubes in nests **9 7/8"** Pitch across wide water spaces **14" x 8 1/4"**

Girders to combustion chamber tops: Material **Steel** Tensile strength **28/32** Depth and thickness of girder at centre **10 1/2" x 1 3/8"** Length as per Rule **31 1/2"** Distance apart **9 1/4"** No. and pitch of stays in each **3 @ 8"**

Combustion chamber plates: Material **Steel**

Tensile strength **26/30** Thickness: Sides **1 1/16"** Back **1 1/16"** Top **1 1/16"** Bottom **7/8"**

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

Front plate at bottom: Material **Steel** Tensile strength **26/30**

Thickness **15/16"** Lower back plate: Material **Steel** Tensile strength **26/30** Thickness **27/32"**

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

Main stays: Material **Steel** Tensile strength **28/32**

Diameter { At body of stay, or Over threads } **3 1/8"** No. of threads per inch **6**

Screw stays: Material **Steel** Tensile strength **26/30**

Diameter { At turned off part, or Over threads } **1 3/4"** No. of threads per inch **9**

Are the stays drilled at the outer ends no Margin stays: Diameter ^{At turned off part} 1 7/8"
 or ^{Over threads}
 No. of threads per inch 9
 Tubes: Material stainless steel External diameter ^{Plain} 3" Thickness ^{Stay} 3/8", 5/16" No. of threads per inch 9
 Pitch of tubes 4 1/4" x 4 1/8" Manhole compensation: Size of opening in
 end 16" x 12" Section of compensating ring — No. of rivets and diameter of rivet holes —
 Outer row rivet pitch at ends — Depth of flange if manhole flanged 4 1/4" Steam Dome: Material —
 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 — Thickness of crown — No. and diameter of
 stays — Inner radius of crown —
 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 — 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 yes THE NORTH EASTERN MARINE ENGINEERING CO. (1938) LTD.
 The foregoing is a correct description,
[Signature] RESIDENT MANAGER

Dates of Survey ^{During progress of} Please see Rpt 4 Are the approved plans of boiler and superheater forwarded herewith
 while ^{work in shops - -} — (If not state date of approval.)
 building ^{During erection on} — Total No. of visits —
^{board vessel - - -}

Is this Boiler a duplicate of a previous case — 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, Secretary's letters and the requirements of the Rules. Workmanship and materials are good. In recommendation please see Rpt 4.

[Signature]

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

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute —
 Assigned See Id. No. 33439

