

5a.

REPORT ON BOILERS.

NEW CENTRE

Received at London Office

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411

Writing Report 19 When handed in at Local Office 21/5/47 ✓ Port of **NEWCASTLE-ON-TYNE**

Survey held at **Wallsend** Date, First Survey **21st AUGUST, 1946** Last Survey **20th JAN 1947**

on the **S/S HOPESTAR.** (Number of Visits **23**) Tons { Gross **5267** Net **3192**

Built at ✓ By whom built ✓ Yard No. ✓ When built

Makes made at ✓ By whom made ✓ Engine No. ✓ When made

Boilers made at **Wallsend** By whom made **Wallsend Slipway & Eng'g Co. Ltd** Boiler No. **415B** When made **1947**

Indicated Horse Power $\frac{2723}{15} = 182$ Owners _____ Port belonging to _____

WATER TUBULAR BOILERS—MAIN, ~~AUXILIARY~~, OR ~~DONKEY~~.

Manufacturers of Steel **Colvilles Ltd** (Letter for Record **S**)

Total Heating Surface of Boilers **1998 sq ft.** Is forced draught fitted **Yes** Coal or Oil fired **Coal**

Description of Boilers **Superheat Surface 725 sq ft.** Working Pressure **285 lbs**

Tested by hydraulic pressure to **478 lbs** Date of test **6-11-46** No. of Certificate **N^o 1228.** Can each boiler be worked separately **Yes**

Area of Firegrate in each Boiler **52 sq ft.** No. and Description of safety valves to each boiler **2 of 1 1/4" Cockburn's Improved High Lift.**

Area of each set of valves per boiler { per Rule **4.36** as fitted **4.81** } Pressure to which they are adjusted **294 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 donkey boiler**

Smallest distance between boilers or uptakes and bunkers or woodwork **21"** Is oil fuel carried in the double bottom under boilers **No**

Smallest distance between shell of boiler and tank top plating **2'-0"** Is the bottom of the boiler insulated **Yes**

Largest internal dia. of boilers **14'-2 1/16"** Length **12'-3"** Shell plates: Material **Stl.** Tensile strength **31 to 35 tons**

Thickness **1 1/32"** Are the shell plates welded or flanged **No** Description of riveting: circ. seams { end **D.R.** inter. **NIL** }

Long. seams **J.R. Dbl butt straps** Diameter of rivet holes in { circ. seams **1 3/4"** long. seams **1 3/4"** } Pitch of rivets { **5-01** }

Percentage of strength of circ. end seams { plate **65%** rivets **43.1%** } Percentage of strength of circ. intermediate seam { plate **NIL.** rivets }

Percentage of strength of longitudinal joint { plate **84.78** rivets **87.80** combined **87.00** } Working pressure of shell by Rules **286 lbs**

Thickness of butt straps { outer **1 5/16"** inner **1 7/16"** } No. and Description of Furnaces in each Boiler **3 C.f. (Deighton)**

Material **Stl.** Tensile strength **27 to 30 tons** Smallest outside diameter **3'-7 1/2"**

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 ✓ Working pressure of furnace by Rules **285 lbs.**

End plates in steam space: Material **Stl.** Tensile strength **26 to 30 tons** Thickness **1 5/32"** Pitch of stays **19 1/4" x 18"**

How are stays secured **Nutted inside & outside** Working pressure by Rules **293 lbs**

End plates: Material { front } **Steel** Tensile strength { **26 to 30 tons** } Thickness { front **1 1/8"** back **1"** }

Mean pitch of stay tubes in nests **8 1/4" x 8 3/4"** Pitch across wide water spaces **14"** Working pressure { front **299 lbs.** back **430 lbs.** }

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

centre **12" x 3/4" dble** Length as per Rule **38"** Distance apart **8 1/4"** No. and pitch of stays

each **3 @ 9"** Working pressure by Rules **294 lbs** Combustion chamber plates: Material **Stl.**

Tensile strength **26 to 30 tons** Thickness: Sides **25/32"** Back **13/16"** Top **25/32"** Bottom **1 1/8"**

Pitch of stays to ditto: Sides **8 1/4" x 9"** Back **7 1/4" x 9" max** Top **8 1/4" x 9"** Are stays fitted with nuts or riveted over **1 1/8" dble WITH NUTS. 1 1/8" "I"-RIVETED OVER**

Working pressure by Rules **289 lbs min.** Front plate at bottom: Material **Stl.** Tensile strength **26 to 30 tons**

Thickness **1 1/8"** Lower back plate: Material **Stl.** Tensile strength **26-30 tons** Thickness **1 1/32"**

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

Working Pressure **310 lbs.** Main stays: Material **Stl.** Tensile strength **28 to 32 tons**

Diameter { At body of stay, **3 3/4"** } No. of threads per inch **6.** Area supported by each stay **19 1/4" x 18"**

Working pressure by Rules **318 lbs** Screw stays: Material **Stl.** Tensile strength **26 to 30 tons**

Diameter { At turned off part, **1 7/8" & 1 1/2"** } No. of threads per inch **9.** Area supported by each stay **1 7/8" dble - 8 1/2" x 9"**

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Working pressure by Rules $1\frac{7}{8}$ - 290^{lb} *For $1\frac{7}{8}$ - 288^{lb}* Are the stays drilled at the outer ends *No.* Margin stays: Diameter *At turned off part, $2\frac{1}{8}$ "*
 No. of threads per inch *9.* Area supported by each stay *10 $\frac{3}{4}$ " x 9"* Working pressure by Rules *293^{lb}*
 Tubes: Material *S.D. Steel* External diameter *Plain } 3 $\frac{1}{4}$ "* Thickness *7.45 } 5 $\frac{1}{16}$ " No. of threads per inch *9.*
 Pitch of tubes *4 $\frac{1}{2}$ " Vert x 4 $\frac{3}{8}$ " Horiz* Working pressure by Rules *323^{lb} min.* Manhole compensation: Size of opening in shell plate *Whole in B. End.* 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: *N/A*
 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 *N.E. Mar. Smoketube* Manufacturers of Tubes *Talbot Stead*
See New Certy C. 23245 of Sept 1946 Steel forgings *Appleby & Frodingham*
 Number of elements *42.* Material of tubes *S.D. Steel* Steel castings *Hopkinson's, Huddersfield*
 Material of headers *Woot Steel* Tensile strength *26 & 30 tons* Thickness *1 $\frac{1}{8}$ "* Internal diameter and thickness of tubes *15 $\frac{1}{16}$ " + 2 $\frac{1}{2}$ "* Can the superheater be shut off and the boiler be worked separately *Yes*
 Area of each safety valve *1.77* *(1 $\frac{1}{2}$ " dia Imp'd H.L.)* Are the safety valves fitted with easing gear *Yes* Working pressure as per Rules *285^{lb}* Pressure to which the safety valves are adjusted *295^{lb}* Hydraulic test pressure: tubes *1500^{lb}* forgings and castings *855^{lb} + 660^{lb}* and after assembly in place *500^{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 foregoing is a correct description,
 FOR THE WALLSEND SLIPWAY & ENGINEERING CO. LIMITED.
 J. W. Pherson. Manufacturer

Dates of Survey *Yes, app'd 24/2/47*
 while building *Sup. in N.E. Mar Standard*
 (During progress of work in shops - -) *(1946) AUG. 21, SEPT. 3, 4, 13, 18, 20, 25, OCT. 10, 17, 23, NOV. 18, 21, 22, 25, 26, 27,* Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.)
 (During erection on board vessel - - -) *DEC 4, 9, 11, 17, 18, 23, (1947) JAN. 20* Total No. of visits *2*

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.)
This New Centre Boiler has been constructed and fitted on board in accordance with the approved plan and the Society's Rules, and the materials & workmanship are good.
See also Machy Rpt 9.

Survey Fee ... £ *27-6-0* When applied for, 19
 Travelling Expenses (if any) £ : : When received, 19

12 JUN 1947
A Watt J. H. Walker.
 Engineer Surveyor to Lloyd's Register of Shipping

Committee's Minute *FRI 1 AUG 1947*
 Assigned *See Rpt. 9*

