

19 NOV 1929

Rpt. 5a.

## REPORT ON BOILERS.

No. 84583

13 AUG 1929

Received at London Office

Date of writing Report 7-8-1929 When handed in at Local Office 10-8-1929 Port of

NEWCASTLE-ON-TYNE

No. in Reg. Book. Survey held at Hebburn Date, First Survey 8 Feb. 1929 Last Survey 7 August 1929

on the steel Sc. Suction Hopper &amp; Reclamation Dredger "FOREMOST CHIEF." (Number of Visits 14.) Gross 1031.49 Tons Net 363.74.

Master Built at Aberdeen By whom built Alex. Hall &amp; Co Yard No. 614 When built 1929

Engines made at Aberdeen By whom made A. Hall &amp; Co. Ltd Engine No. 315 When made

Boilers made at Hebburn By whom made Palmers Co. Ltd Boiler No. 1118-9 When made 1929

Nominal Horse Power 192. Owners The James Dredging, Towing &amp; Transport Co. Ltd. Port belonging to London.

## MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel WITKOWITZER BERGBAU-UND EISENHÜTTEN-GEWERKSCHAFT IN WITKOWITZ

(Letter for Record S)

Total Heating Surface of Boilers 4250  $\text{ft}^2$  Is forced draught fitted No

Coal or Oil fired COAL OIL

No. and Description of Boilers Two S.E. MULTITUBULAR 25B

Working Pressure 190 LBS.

Tested by hydraulic pressure to 335 LBS. Date of test 2-8-29 No. of Certificate 371-2 Can each boiler be worked separately yes

Area of Firegrate in each Boiler 63  $\text{ft}^2$  No. and Description of safety valves to each boiler - 2 spring loadedArea of each set of valves per boiler (per Rule 15.55  $\text{ft}^2$  as fitted 19.24  $\text{ft}^2$ ) Pressure to which they are adjusted 190 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 alt. 4'-4" Is oil fuel carried in the double bottom under boilers -

Smallest distance between shell of boiler and tank top plating no tank Is the bottom of the boiler insulated

Largest internal dia. of boilers 14' 6" Length 11' 6" Shell plates: Material STEEL Tensile strength 29 - 33 TONS

Thickness 1 3/32" Are the shell plates welded or flanged No Description of riveting: circ. seams end DRL

Long. seams TRDBS Diameter of rivet holes in (circ. seams 1 5/16" long. seams 1 5/16" Pitch of rivets 8 1/16" 4"

Percentage of strength of circ. end seams (plate 67.25% rivets 50.9% Percentage of strength of circ. intermediate seam (plate 85.6% rivets 90.4%

Percentage of strength of longitudinal joint (plate 85.6% rivets 90.4% combined - Working pressure of shell by Rules 197 LBS.

Thickness of butt straps (outer 1 1/8" inner 1 1/8" No. and Description of Furnaces in each Boiler THREE DEIGHTON

Material STEEL Tensile strength 26 - 30 TONS Smallest outside diameter 3' 6 5/8"

Length of plain part (top 10 1/2" bottom 10 1/2" Thickness of plates (crown 9/16" bottom 9/16" Description of longitudinal joint WELD

Dimensions of stiffening rings on furnace or c.c. bottom - Working pressure of furnace by Rules 191 LBS.

End plates in steam space: Material STEEL Tensile strength 26 - 30 TONS Thickness 1 1/4" Pitch of stays 19" x 19 1/2"

How are stays secured DOUBLE NUTS &amp; WASHERS Working pressure by Rules 193 LBS.

Tube plates: Material (front STEEL Tensile strength 26 - 30 TONS Thickness 25/32" 1 3/4"

Mean pitch of stay tubes in nests 9.375" Pitch across wide water spaces 1' 2" Working pressure (front 457 LBS. back 249 "

Girders to combustion chamber tops: Material STEEL Tensile strength 28 - 32 TONS Depth and thickness of girder

at centre 8 1/2" x 13/16" Length as per Rule 3' 0 3/32" Distance apart 8 1/2" No. and pitch of stays

in each 2 @ 10" Working pressure by Rules 215 LBS. Combustion chamber plates: Material STEEL

Tensile strength 26 - 30 TONS Thickness: Sides 11/16" Back 11/16" Top 11/16" Bottom 1"

Pitch of stays to ditto: Sides 8 1/2" x 10" Back 9 1/4" x 9 1/4" Top 8 1/2" x 10" Are stays fitted with nuts or riveted over NUTS

Working pressure by Rules 192 LBS. Front plate at bottom: Material STEEL Tensile strength 26 - 30 TONS.

Thickness 1 3/4" Lower back plate: Material STEEL Tensile strength 26 - 30 TONS Thickness 7/8"

Pitch of stays at wide water space d = 19.5" Are stays fitted with nuts or riveted over NUTS

Working Pressure 247 LBS. Main stays: Material STEEL Tensile strength 28 - 32 TONS.

Diameter (At body of stay, 3 1/4" No. of threads per inch 6 Area supported by each stay 370.5

Working pressure by Rules 217 LBS. Screw stays: Material STEEL Tensile strength 26 - 30 TONS.

Diameter (At turned off part, 1 3/4" No. of threads per inch 9 Area supported by each stay 85.6

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Working pressure by Rules  $2\frac{1}{2}$  LBS. Are the stays drilled at the outer ends No Margin stays: Diameter { At turned off part,  $1\frac{7}{8}$ " or Over threads }  
 No. of threads per inch 9 Area supported by each stay 107.3 Working pressure by Rules 195 LBS.  
 Tubes: Material STEEL External diameter { Plain  $3\frac{1}{2}$ " Stay  $3\frac{1}{2}$ " Thickness { 8 W.G.  $\frac{1}{4}$ "  $\frac{5}{16}$ " No. of threads per inch 9  
 Pitch of tubes  $4\frac{5}{8}$ "  $\times$   $4\frac{3}{4}$ " Working pressure by Rules 215 LBS Manhole compensation: Size of opening in shell plate 16"  $\times$  20" Section of compensating ring 2' 8"  $\times$  3' 0"  $\times$  1  $\frac{1}{4}$ " No. of rivets and diameter of rivet holes 32 @ 1  $\frac{5}{16}$ "  
 Outer row rivet pitch at ends 8  $\frac{5}{16}$ " Depth of flange if manhole flanged 3  $\frac{1}{2}$ " 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 - 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 - Manufacturers of { Tubes 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, 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

For The foregoing is a correct description, J. Cameron Manufacturer.

Dates of Survey { During progress of work in shops - - - Feb. 8. Mar. 5. Apr. 12. 22. 30. May 23. June 7. 21. July 8. 16. 25. 30. Aug. 2. 7. Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.)  
 while building { During erection on board vessel - - - Aug. 16. 21. Oct. 9. 26. 29. Nov. 12. Total No. of visits 14 Installing 6.

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) These boilers have been built under Special Survey, the materials and workmanship are good.

The boilers have been properly secured in the vessel, safety valves adjusted under steam as above, & tried for accumulation; and the boilers examined under working conditions and found satisfactory.

P. Fitzgerald.  
 Aberdeen.

Survey Fee ... £ 26 : 13 : 6 When applied for, 192  
 Travelling Expenses (if any) £ : : When received, See Secretary's letter 27-9-29.

Thomas Napier

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute Fri. 22 NOV 1929

Assigned. See Mr. J. B. Smith No 15850 attached.



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