

## REPORT ON BOILERS.

No. 30141

Received at London Office

27 SEP 1929

Date of writing Report 28 Sept 1929 When handed in at Local Office 26 Sept 1929 Port of Sunderland

No. in  
Reg. Book.

Surrey held at Sunderland

Date First Survey

Last Survey Sep. 26 1929

on the

S.S. "WILLIAM CASH"

(Number of Visits

Gross  
Tons  
Net

Master Built at Newcastle-on-Tyne By whom built R+W, Hawthorn Leslie & Co. Ltd. No. 567 When built 1929

Engines made at Sunderland By whom made The North Eastern Marine Eng. Co. Ltd. Engine No. 2730 When made 1929

Boilers made at Sunderland By whom made The North Eastern Marine Eng. Co. Ltd. Boiler No. 2730 When made 1929.

Nominal Horse Power 137 Owners Stephenson Clarke & Associated Cos. Ltd. Port belonging to London.

## MULTITUBULAR BOILERS MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel The Appleby Iron Company Ltd., & The Steel Company of Scotland Ltd. (Letter for Record (S))

Total Heating Surface of Boilers 2260 sq ft Is forced draught fitted No. Coal or Oil fired Coal

No. and Description of Boilers One Single Ended Marine Type 15B Working Pressure 180 lbs sq in

Tested by hydraulic pressure to 320 lbs sq in Date of test 6.9.29 No. of Certificate 4056 Can each boiler be worked separately

Area of Firegrate in each Boiler 55 sq ft No. and Description of safety valves to each boiler Two Direct Spring Loaded

Area of each set of valves per boiler per Rule 14.5 as fitted 16.58 Pressure to which they are adjusted 185 lbs sq in 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 tank under boiler.

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

Largest internal dia. of boilers 15'-0 5/8" Length 10'-9" Full Shell plates: Material Steel Tensile strength 29-33 tons sq in

Thickness 1 3/16" Are the shell plates welded or flanged No. Description of riveting: circ. seams D.R. LAP. inter. 3 3/4" Pitch of rivets 8 3/4"

Long. seams T.R. D.B.S. Diameter of rivet holes in circ. seams 1 1/4" long. seams 1 1/4"

Percentage of strength of circ. end seams plate 66.6 rivets 43.7 Percentage of strength of circ. intermediate seam plate rivets

Percentage of strength of longitudinal joint plate 85.7 rivets 87.8 Working pressure of shell by Rules 180 lbs sq in combined 88.9

Thickness of butt straps outer 1 5/16" inner 1 1/8" No. and Description of Furnaces in each Boiler Three Corrugated Deighton Section C.F.

Material Steel Tensile strength 26-30 tons sq in Smallest outside diameter 3'-4 9/32"

Length of plain part top bottom Thickness of plates crown 3/32" bottom 6/64" Description of longitudinal joint Weld.

Dimensions of stiffening rings on furnace or c.c. bottom Working pressure of furnace by Rules 184 lbs sq in

End plates in steam space: Material Steel Tensile strength 26-30 tons sq in Thickness 1 1/32" Pitch of stays 21 1/2" x 21 1/4"

How are stays secured Double Nuts Working pressure by Rules 181 lbs sq in

Tube plates: Material front Steel back Steel Tensile strength 26-30 tons sq in Thickness 7/8" 3/4"

Mean pitch of stay tubes in nests 10.5" Pitch across wide water spaces 14 1/2" x 9" Working pressure front 192 lbs sq in (H.W. SPACE) back 182 lbs sq in

Girders to combustion chamber tops: Material Steel Tensile strength 28-32 tons sq in Depth and thickness of girder

At centre 8 1/2" x 2" Length as per Rule 32 15/32" Distance apart WINGS: 11 1/4" CENTRE: 11" No. and pitch of stays

In each 3 @ 7 3/4" Working pressure by Rules 190 lbs sq in Combustion chamber plates: Material Steel

Tensile strength 26-30 tons sq in Thickness: Sides 3/4" Back 25/32" Top 3/4" Bottom 3/4"

Pitch of stays to ditto: Sides 10 3/4" x 10 3/8" Back 11 1/4" x 10" Tops CENTRE: 7 1/2" x 11 1/4" Are stays fitted with nuts or riveted over Fitted with nuts.

Working pressure by Rules 182 lbs sq in. Gross LEAST. Front plate at bottom: Material Steel Tensile strength 26-30 tons sq in

Thickness 7/8" Lower back plate: Material Steel Tensile strength 26-30 tons sq in Thickness 29/32"

Pitch of stays at wide water space 14 1/2" x 11 1/4" Are stays fitted with nuts or riveted over Fitted with nuts.

Working Pressure 200 lbs sq in Main stays: Material Steel Tensile strength 28-32 tons sq in

Diameter At body of stay, 3 3/8" No. of threads per inch 6 Area supported by each stay 467.625 sq in

Over threads Working pressure by Rules 182.8 lbs sq in Screw stays: Material Steel Tensile strength 26-30 tons sq in

Diameter At turned off part, 1 7/8" & 1 3/4" No. of threads per inch 9 Area supported by each stay 112.5 & 87 sq in



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Date of  
No. in  
Reg. Bo  
Built  
Engines  
Boiler  
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Is each  
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Working pressure by Rules 189 lbs. 0 Are the stays drilled at the outer ends no. Margin stays: Diameter { At turned off part, 2" or Over threads 2"

No. of threads per inch 9 Area supported by each stay 136.4 0 Working pressure by Rules 181.4 lbs. 0

Tubes: Material Steel External diameter { Plain 3 1/4" Thickness 5/16" + 1/4" No. of threads per inch 9

Pitch of tubes 4 1/2" x 4 1/2" Working pressure by Rules PLAIN: 230 lbs. 0 Manhole compensation: Size of opening in

END shell plate 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 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.

The foregoing is a correct description,  
THE NORTH EASTERN MARINE ENGINEERING CO. LTD.  
John Nell Manufacturer.

Dates { During progress of work in shops -- } Please see Machinery Report. Are the approved plans of boiler and superheater forwarded herewith Yes.  
of Survey { while building { During erection on board vessel --- }  
(If not state date of approval.)

Total No. of visits —

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) The Boiler has been built under Special Survey & satisfactorily fitted in the Vessel. The Materials & Workmanship are good. For notation please see Machinery Report.

Survey Fee — £ — When applied for, 192  
Travelling Expenses (if any) £ — When received, 192

Alfred Be.  
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute 4 OCT 1921  
Assigned See F.E. Rpt.