

## REPORT ON BOILERS.

No. 32,487.

Received at London Office SEP 23 1938

Date of writing Report 28 SEP 1938 When handed in at Local Office 28 SEP 1938 Port of SUNDERLAND.

No. in Survey held at SUNDERLAND. Date, First Survey Last Survey 23 Sep. 1938

Reg. Book. on the LOBESTONE (Number of Visits) Gross 4877 Tons Net 2887

Master Built at Sunderland By whom built Portman & Son, Ltd. Yard No. 280 When built 1938

Engines made at Sunderland By whom made H.E. Marine Eng. Co. (1938) Ltd. Engine No. 2906 When made 1938

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

Nominal Horse Power 400 Owners The Navigation & Coal Trade Co. Port belonging to London

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

Manufacturers of Steel Steel Company of Scotland (Letter for Record)

Total Heating Surface of Boilers 1235 sq. Is forced draught fitted no Coal or Oil fired either

No. and Description of Boilers One cylindrical multitubular Working Pressure 220 lbs.

Tested by hydraulic pressure to 380 lbs. Date of test 2/6/38 No. of Certificate 4277 Can each boiler be worked separately yes

Area of Firegrate in each Boiler 34.37 sq. ft. No. and Description of safety valves to each boiler 2 Direct Spring.

Area of each set of valves per boiler { per Rule 6.68 sq. ft. as fitted 7.8 sq. ft. Pressure to which they are adjusted 220 lbs. 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 — Is oil fuel carried in the double bottom under boilers no

Smallest distance between shell of boiler and tank top plating 2'-4" Is the bottom of the boiler insulated yes

Largest internal dia. of boilers 11'-9 1/2" Length 10'-6" Shell plates: Material Steel Tensile strength 29/33 tons/sq. in

Thickness 1 9/16" 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 3/16" long. seams 1 3/16" Pitch of rivets 3 1/2" 8 3/8"

Percentage of strength of circ. end seams { plate 66 rivets 44 Percentage of strength of circ. intermediate seam { plate — rivets —

Percentage of strength of longitudinal joint { plate 85.82 rivets 86.21 combined 88.76 Working pressure of shell by Rules 220.3 lbs.

Thickness of butt straps { outer 7/8" inner 1" No. and Description of Furnaces in each Boiler 2 Brighton. Stephen garley necks.

Material Steel Tensile strength 26/30 tons/sq. in Smallest outside diameter 3'-5 1/2"

Length of plain part { top — bottom — Thickness of plates { crown 4 1/4" bottom 4 1/4" Description of longitudinal joint weld

Dimensions of stiffening rings on furnace or a.c. bottom Working pressure of furnace by Rules 226 lbs.

End plates in steam space: Material steel Tensile strength 26/30 tons/sq. in Thickness 1 1/16" Pitch of stays 15 9/8" x 15"

How are stays secured double nuts Working pressure by Rules 223 lbs.

Tube plates: Material { front steel back steel Tensile strength { 26/30 tons/sq. in Thickness { 1 1/16" 13/16"

Mean pitch of stay tubes in nests 10.38" Pitch across wide water spaces 14 1/4" x 9" Working pressure { front 240 lbs. back 229 lbs.

Girders to combustion chamber tops: Material steel Tensile strength 28/32 tons/sq. in Depth and thickness of girder at centre 9 1/8" x 2 1/16" Length as per Rule 2'-7 29/32" Distance apart 11 3/4" No. and pitch of stays in each 3 7 1/2" Working pressure by Rules 224 lbs.

Combustion chamber plates: Material Steel

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

Pitch of stays to ditto: Sides 10 x 9 9/8" Back 9 3/4" x 9 9/8" Top 7 1/2" x 11 3/4" Are stays fitted with nuts or riveted over nuts fitted

Working pressure by Rules 222 lbs. Front plate at bottom: Material Steel Tensile strength 26/30 tons/sq. in

Thickness 10.38" Lower back plate: Material Steel Tensile strength 26/30 tons/sq. in Thickness 1 1/16"

Pitch of stays at wide water space 14 1/2" x 9 9/8" Are stays fitted with nuts or riveted over nuts fitted

Working Pressure 235 lbs. Main stays: Material Steel Tensile strength 28/32 tons/sq. in

Diameter { At body of stay, 2 3/8" or Over threads 2 3/4" No. of threads per inch 6 Area supported by each stay 14.55" x 15"

Working pressure by Rules 220 lbs. Screw stays: Material Steel Tensile strength 26/30 tons/sq. in

Diameter { At turned off part, 1 7/8" or Over threads 1 7/8" No. of threads per inch 9 Area supported by each stay 9 3/4" x 9 9/8"



Working pressure by Rules 223 lbs Are the stays drilled at the outer ends no Margin stays: Diameter <sup>At turned off part,</sup> 2"  
 No. of threads per inch 9 Area supported by each stay 9 7/8" x 11 1/2" Working pressure by Rules 222 lbs.  
 Tubes: Material 4 1/2" x 4 1/2" External diameter <sup>Plain</sup> 3 3/4" Thickness <sup>Stay</sup> 3/8", 5/16", 1/4" No. of threads per inch 9  
 Pitch of tubes 4 1/2" x 4 1/2" Working pressure by Rules 223 lbs Manhole compensation: Size of opening in end —  
 shell plate — Section of compensating ring — No. of rivets and diameter of rivet holes —  
 Outer row rivet pitch at ends — Depth of flange if manhole flanged 3 9/16" Steam Dome: Material —  
 Tensile strength — Thickness of shell — Description of longitudinal joint —  
 Diameter of rivet holes — Pitch of rivets — Percentage of strength of joint <sup>Plate</sup> —  
 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 <sup>Tubes</sup> —  
<sup>Steel castings</sup> —  
 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. (1888) LTD.  
 Manufacturer.

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

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.)  
This boiler has been constructed under special supervision in accordance with the approved plans, surveyor's letters and the requirements of the Rules. Workmanship and materials are good. See recommendation plan on Apt. 4.

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

Engineer Surveyor to Lloyd's Register of Shipping.  
 Committee's Minute TUE 4 OCT 1938  
 Assigned See F.E. machy rpt.

