

REPORT ON BOILERS.

No. 32349

Received at London Office

APR 19 1938

Date of writing Report

192 When handed in at Local Office

16 APR. 1938

Port of **SUNDERLAND.**

No. in Survey held at Reg. Book.

SUNDERLAND.

Date, First Survey

Last Survey **Apr 8 1938**

(Number of Visits)

Grass **4986**

on the

s.s. "A E L Y B R Y N"

Tons Net **2947**

Master

Built at **Sunderland** By whom built **W. J. Lewis & Co., Ltd.** No. **719** When built **1938**

Engines made at

Sunderland By whom made **N.S. Marine Eng. Co. Ltd.** Engine No. **2886** When made **1938**

Boilers made at

Sunderland By whom made **N.S. Marine Eng. Co. Ltd.** Boiler No. **2886** When made **1938**

Nominal Horse Power

353

Owners **Trinoster S.S. Co. Ltd**

Port belonging to **London**

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

Manufacturers of Steel **The Steel Company of Scotland**

(Letter for Record **S**)

Total Heating Surface of Boilers

3852 sq ft

Is forced draught fitted **yes**

Coal or Oil fired **coal**

No. and Description of Boilers

two multitubular cylindrical

Working Pressure **220 lbs.**

Tested by hydraulic pressure to

380 lbs.

Date of test **9/21/2/38**

No. of Certificate **4260**

Can each boiler be worked separately **yes**

Area of Firegrate in each Boiler

43.64 sq ft

No. and Description of safety valves to each boiler **Two direct spring**

Area of each set of valves per boiler

(per Rule) **10.37 sq ft**

Pressure to which they are adjusted **220 lbs.**

Are they fitted with casing gear **yes**

In case of donkey boilers, state whether steam from main boilers can enter the donkey boiler

no

Smallest distance between boilers or uptakes and bunkers or woodwork

18"

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

13'-6 3/8"

Length **11'-6"**

Shell plates: Material **Steel**

Tensile strength **29/33 tons/sq in**

Thickness

1 5/16"

Are the shell plates welded or flanged **no.**

Description of riveting: circ. seams

inter. D.R.L.

Long. seams

T.R.D.B.S.

Diameter of rivet holes in

(circ. seams) **1 3/8"**

(long. seams)

Pitch of rivets

4"

9 1/2"

Percentage of strength of circ. end seams

plate **65.6**

rivets **44.5**

Percentage of strength of circ. intermediate seam

plate **85.5%**

rivets **88.5%**

Percentage of strength of longitudinal joint

plate **85.5%**

rivets **88.5%**

combined **88.76**

Working pressure of shell by Rules **222 lbs.**

Thickness of butt straps

outer **1"**

inner **1 1/8"**

No. and Description of Furnaces in each Boiler **Two Doughton. Stephen Gunter type.**

Material

Steel

Tensile strength **26/30 tons/sq in**

Smallest outside diameter **36 7/8"**

Length of plain part

top **—**

bottom **—**

Thickness of plates

crannon **9/16"**

bottom

Description of longitudinal joint **weld**

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

Working pressure of furnace by Rules **221**

End plates in steam space: Material

Steel

Tensile strength **26/30 tons/sq in**

Thickness **1 5/16"**

Pitch of stays **19 1/4" x 19"**

How are stays secured

double nuts

Working pressure by Rules **220.5 lbs.**

Tube plates: Material

front **Steel**

back **Steel**

Tensile strength **26/30 tons/sq in**

Thickness **15/16"**

25/32"

Mean pitch of stay tubes in nests

9.94"

Pitch across wide water spaces **14" x 8 1/2"**

Working pressure

front **225 lbs.**

back **221 lbs.**

Girders to combustion chamber tops: Material

Steel

Tensile strength **28/32 tons/sq in**

Depth and thickness of girder

8" x 1 7/8"

at centre

8" x 1 7/8"

Length as per Rule **32.69"**

Distance apart **8 1/2"**

No. and pitch of stays

2.

10 1/4"

Working pressure by Rules **229 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 1/4" x 9 1/16"

Back **10" x 9 1/16"**

Top **10 1/4" x 8 1/2"**

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 **15/16"**

Pitch of stays at wide water space

14 1/2" x 9 1/16"

Are stays fitted with nuts or riveted over **nuts fitted**

Working Pressure **220 lbs.**

Main stays: Material **Steel**

Tensile strength **28/32 tons/sq in**

Diameter

At body of stay, **3/8"**

Over threads **3/2"**

No. of threads per inch **6**

Area supported by each stay **19 1/4" x 19"**

Working pressure by Rules

233 lbs

Screw stays: Material **Steel**

Tensile strength **26/30 tons/sq in**

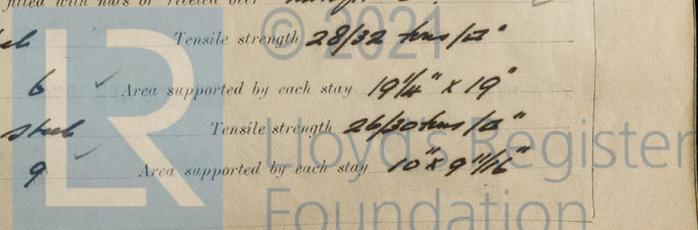
Diameter

At turned off part, **1 7/8"**

Over threads

No. of threads per inch **9**

Area supported by each stay **10" x 9 1/16"**



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Working pressure by Rules 220 lbs Are the stays drilled at the outer ends no Margin stays: Diameter ^{At turned off part.} 2"
 No. of threads per inch 9 Area supported by each stay 11 9/16" x 9 1/16" Working pressure by Rules 220 lbs
 Tubes: Material Steel External diameter ^{Plain} 3" ^{Stay} 3" Thickness 8 N.C. No. of threads per inch 9
 Pitch of tubes 4 3/8" x 4 1/4" Working pressure by Rules 222 lbs. Manhole compensation: Size of opening
 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 — 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
 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 Smoke-tube Manufacturers of Tubes Stewart & Lloyd
 Number of elements 96 Material of tubes S.D. Steel Steel castings Hooking Lane Steel Co.
 Material of headers Forged steel Tensile strength 26/30 tons/sq in Thickness 1 1/8" Internal diameter and thickness of tubes 1 5/16", 2 1/2"
 the boiler be worked separately yes Is a safety valve fitted to every part of the superheater which can be shut off from the boiler yes
 Area of each safety valve 2.14 sq in Are the safety valves fitted with casing gear yes Working pressure as
 Rules 220 lbs Pressure to which the safety valves are adjusted — Hydraulic test pressure —
 tubes 1500 lbs. castings 660 lbs and after assembly in place 450 lbs 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 NORTH EASTERN MARINE ENGINEERING CO. (1935) LTD.
 A. J. Berry, GENERAL MANAGER

Dates of Survey ^{During progress of work in shops - -} Please see trchly. Rpt. Are the approved plans of boiler and superheater forwarded herewith yes
^{while building} ^{During erection on board vessel - - -} — Total No. of visits —

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. For recommendations please see Rpt. A.

Survey Fee ... £ : ✓ : When applied for. 192
 Travelling Expenses (if any) £ : ✓ : When received. 192
 L. R. Home

Committee's Minute FRI. 22 APR 1938
 Assigned See Old. F.E. 323409
 Lloyd's Register Foundation