

REPORT ON BOILERS.

No. 30300

Received at London Office

Date of writing Report

192

When handed in at Local Office 3 MAR. 1930

Port of Sunderland

No. in Reg. Book. Survey held at

Sunderland

Date, First Survey

Last Survey 1st March 1930

on the

S.S. "ESSEX MANOR"

(Number of Visits

Gross

5001

Tons

Net 3100

Master

Built at

Sunderland

By whom built

Messrs W. Orford & Sons

Yard No.

601

When built

1930

Engines made at

Sunderland

By whom made

Messrs The N.E.M. Engineering Co. Ltd

Engine No.

2710

When made

1930

Boilers made at

Sunderland

By whom made

Messrs The N.E.M. Engineering Co. Ltd

Boiler No.

2710

When made

1930

Nominal Horse Power

441

Owners

Meldrum & Son

Port belonging to

London

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel

Messrs The Steel Co. of Scotland Ltd. & Witkowitz & Co. - Witkowitz

Letter for Record

(3)

Total Heating Surface of Boilers

7665 sq ft

Is forced draught fitted

No.

Coal or Oil fired

Coal

No. and Description of Boilers

3 S.E. Marine Type

Working Pressure

180 lb/sq in

Tested by hydraulic pressure to

320 lb/sq in

Date of test

19.12.29

No. of Certificate

4078

Can each boiler be worked separately

Yes

Area of Firegrate in each Boiler

60 sq ft

No. and Description of safety valves to each boiler

2. Spring loaded

Area of each set of valves per boiler

per Rule 16.37 sq in

as fitted 16.58 sq in

Pressure to which they are adjusted

185 lb/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

Yes

Smallest distance between boilers or uptakes and bunkers or woodwork

1'-3"

Is oil fuel carried in the double bottom under boilers

No.

Smallest distance between shell of boiler and tank top plating

3'-0"

Is the bottom of the boiler insulated

Yes

Largest internal dia. of boilers

15'-9 1/2"

Length

11'-0"

Shell plates: Material

Steel

Tensile strength

29.33 ton/sq in

Thickness

1 1/4"

Are the shell plates welded or flanged

No.

Description of riveting: circ. seams

end

D.R. Lap.

Long. seams

T.R. D.B. Straps

Diameter of rivet holes in

circ. seams 1 5/16"

long. seams 1 5/16"

Pitch of rivets

4" 9/8"

Percentage of strength of circ. end seams

plate 67%

rivets 43.8%

Percentage of strength of circ. intermediate seam

plate

rivets

Percentage of strength of longitudinal joint

plate 85.6%

rivets 88.1%

combined 88.8%

Working pressure of shell by Rules

181 lb/sq in

Thickness of butt straps

outer 1 1/8"

inner 1 1/8"

No. and Description of Furnaces in each Boiler

3 Corrugated Reighton section

Material

Steel

Tensile strength

26.30 ton/sq in

Smallest outside diameter

3'-8 3/8"

Length of plain part

top 1'-0"

bottom 1'-0"

Thickness of plates

crown 9/16"

bottom 9/16"

Description of longitudinal joint

Weld.

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

Working pressure of furnace by Rules

183.8 lb/sq in

End plates in steam space: Material

Steel

Tensile strength

26.30 ton/sq in

Thickness

1 1/2"

Pitch of stays

2'-3" x 1'-8 5/8"

How are stays secured

D. Nuts

Working pressure by Rules

184 lb/sq in

Tube plates: Material

front Steel

back Steel

Tensile strength

26.30 ton/sq in

Thickness

7/8"

Mean pitch of stay tubes in nests

11"

Pitch across wide water spaces

14 1/2" x 9 1/8"

Working pressure

front 190 lb/sq in

back 180.8 lb/sq in

Girders to combustion chamber tops: Material

Steel

Tensile strength

28.32 ton/sq in

Depth and thickness of girder

at centre

8" x 1" x 2"

Length as per Rule

2'-7 15/16"

Distance apart

11 3/4"

No. and pitch of stays

in each

2-10"

Working pressure by Rules

185 lb/sq in

Combustion chamber plates: Material

Steel

Tensile strength

26.30 ton/sq in

Thickness: Sides

25/32"

Back

25/32"

Top

25/32"

Bottom

25/32"

Pitch of stays to ditto: Sides

11 3/4" x 10"

Back

11 1/2" x 10 1/4"

Top

11 3/4" x 10"

Are stays fitted with nuts or riveted over

Nuts

Working pressure by Rules

180 lb/sq in

Back. Wing Back

Front plate at bottom: Material

Steel

Tensile strength

26.30 ton/sq in

Thickness

7/8"

Lower back plate: Material

Steel

Tensile strength

26.30 ton/sq in

Thickness

15/16"

Pitch of stays at wide water space

1'-5" x 9"

Are stays fitted with nuts or riveted over

Nuts

Working Pressure

196 lb/sq in

Main stays: Material

Steel

Tensile strength

28.32 ton/sq in

Diameter

At body of stay, 3 3/8"

Over threads

No. of threads per inch

6

Area supported by each stay

556.8 sq in

Working pressure by Rules

180.1 lb/sq in

Screw stays: Material

Steel

Tensile strength

26.30 ton/sq in

Diameter

At turned off part, 1 7/8"

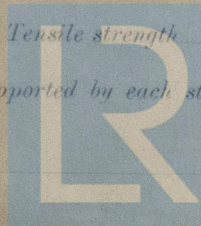
Over threads

No. of threads per inch

9

Area supported by each stay

119.1 sq in

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Working pressure by Rules $180\frac{1}{2}$ Are the stays drilled at the outer ends *No.* Margin stays: Diameter *2" and 2 1/8"*
 No. of threads per inch *9* Area supported by each stay *134.5 and 150.0* Working pressure by Rules *192 and 190 1/2*
Tubes: Material *Seamless Steel* External diameter *3 1/4"* Thickness *5/16" and 1/4"* No. of threads per inch *4"*
 Pitch of tubes *4 5/8" x 4 9/16"* Working pressure by Rules *230 1/2* Manhole compensation: Size of opening in
 shell plate *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:** Material
 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 *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*
 Number of elements Material of tubes *Steel castings* 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,
 FOR THE NORTH EASTERN MARINE ENGINEERING CO. LTD. *John Nall* Manufacturer.

Dates of Survey *During progress of work in shops - - -* Please see Machy. Rpt. Are the approved plans of boiler and superheater forwarded with *Yes.*
 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.) *These Boilers have been built under Special Survey, and the materials and workmanship are good. On completion they were satisfactorily fitted in the vessel, and the Safety Valves adjusted under steam. See Notation see Machinery Report.*

Survey Fee ... *Charged on Machy. Report* When applied for. 192
 Travelling Expenses (if any) ... When received. 192

Matthew Caldwell.
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute **FRI. 14 MAR 1930**

Assigned

*See other report
 Sld. 30300*



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