

## REPORT ON BOILERS.

No. 94039.

Received at London Office

-5 OCT 1929

Date of writing Report

192

When handed in at Local Office

- 3 OCT 1929

Port of

Liverpool

No. in Reg. Book

Survey held at

Birkenhead

Date First Survey

8/4/29

Last Survey

25/9/1929

1929

on the

S. 'Athelstan'

(Number of Visits

54)

Gross

1180

Tons

Net

568.

Master

Built at

Birkenhead

By whom built

Cammell Laird &amp; Co. Ltd

Yard No.

958

When built

1929

Engines made at

Birkenhead

By whom made

Cammell Laird &amp; Co. Ltd

Engine No.

958

When made

1929

Boilers made at

Birkenhead

By whom made

Cammell Laird &amp; Co. Ltd

Boiler No.

958

When made

1929

Nominal Horse Power

203

Owners

United Indurances Co. Ltd

Port belonging to

Liverpool

## MULTITUBULAR BOILERS MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel

David Colville &amp; Son Ltd. Edgely, Dudley

(Letter for Record S)

Total Heating Surface of Boilers

4200 sq ft

Is forced draught fitted

No

Coal or Oil fired

Coal

No. and Description of Boilers

Two Cylindrical multitubular 2SB

Working Pressure

180 lb sq in

Tested by hydraulic pressure to

320 lb sq in

Date of test

19.6.29

No. of Certificate

2335

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

Two spring loaded

Area of each set of valves per boiler

(per Rule) High lift valve

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

✓

Smallest distance between boilers or uptakes and bunkers or woodwork

5' 0"

Is oil fuel carried in the double bottom under boilers

No

Smallest distance between shell of boiler and tank top plating

✓

Is the bottom of the boiler insulated

Yes

Largest internal dia. of boilers

14' 6"

Length

11' 0"

Shell plates: Material

Steel

Tensile strength

28-32 tons sq in

Thickness

1 3/16"

Are the shell plates welded or flanged

No

Description of riveting: circ. seams

end

D.R. Lap

Long. seams

Reble R. D. Lutto

Diameter of rivet holes in

circ. seams

1 1/4"

long. seams

1 1/4"

Pitch of rivets

3 1/2"

Percentage of strength of circ. end seams

plate 60.9

rivets 52.5

Percentage of strength of circ. intermediate seam

plate 65.7

rivets 90.8

Percentage of strength of longitudinal joint

plate 85.7

rivets 90.8

Working pressure of shell by Rules

180.5 lb sq in

Thickness of butt straps

outer 1 5/16"

inner

1 1/16"

No. and Description of Furnaces in each Boiler

Three, Corrugated

Material

Steel

Tensile strength

26-30 tons sq in

Smallest outside diameter

3' 6 3/8"

Length of plain part

top 1 1/2"

bottom

9 1/16"

Description of longitudinal joint

Weld.

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

None

Working pressure of furnace by Rules

190 lb sq in

End plates in steam space: Material

Steel

Tensile strength

26-30 tons sq in

Thickness

1 7/32"

Pitch of stays

20 3/4" x 1 1/4"

How are stays secured

Double nuts &amp; plain washers

Working pressure by Rules

191 lb sq in

End plates: Material

front Steel

back

Steel

Tensile strength

26-30 tons sq in

Thickness

29/32"

Can pitch of stay tubes in nests

11 7/8"

Pitch across wide water spaces

14 1/2"

Working pressure

front 191 lb sq in

back 189 lb sq in

Orders to combustion chamber tops: Material

Steel

Tensile strength

28-32 tons sq in

Depth and thickness of girder

centr

Two plates 8" x 27/32"

Length as per Rule

2' 6"

Distance apart

9 1/2"

No. and pitch of stays

each

Three 7"

Working pressure by Rules

200 lb sq in

Combustion chamber plates: Material

Steel

Tensile strength

26-30 tons sq in

Thickness: Sides

7/8"

Back

7/8"

Top

7/8"

Bottom

7/8"

Pitch of stays to ditto: Sides

7 1/2" x 9 1/4"

Back

7 1/2" x 9 3/8"

Top

7" x 9 1/2"

Are stays fitted with nuts or riveted over

nuts

Working pressure by Rules

187 lb sq in

Front plate at bottom: Material

Steel

Tensile strength

26-30 tons sq in

Thickness

29/32"

Lower back plate: Material

Steel

Tensile strength

26-30 tons sq in

Thickness

27/32"

Pitch of stays at wide water space

14 1/2" x 7 1/2"

Are stays fitted with nuts or riveted over

nuts

Working Pressure

191 lb sq in

Main stays: Material

Steel

Tensile strength

28-32 tons sq in

At body of stay, or

3 1/4"

No. of threads per inch

6

Area supported by each stay

406 sq in

Working pressure by Rules

196 lb sq in

Screw stays: Material

Steel

Tensile strength

26-30 tons sq in

At turned off part, or

1 5/8"

No. of threads per inch

9

Area supported by each stay

70 sq in



Working pressure by Rules *216 lb* Are the stays drilled at the outer ends *no* Margin stays: Diameter { At turned off part, *1 3/4"* or Over threads *1 3/4"*  
No. of threads per inch *9* Area supported by each stay *900* Working pressure by Rules *203 lb*  
Tubes: Material *B.B. Iron* External diameter { Plain *3 1/2"* Thickness *1/8"* No. of threads per inch *9*  
Pitch of tubes *4 1/16" x 4 7/8"* Working pressure by Rules *240 lb* Manhole compensation: Size of opening in shell plate *17 1/4" x 21 1/4"* Section of compensating ring *2' 6 3/4" x 1 7/32" ring* No. of rivets and diameter of rivet holes *44 @ 1 1/4"*  
Outer row rivet pitch at ends *9"* Depth of flange if manhole flanged *3 3/4"* Steam Dome: Material *✓*  
Tensile strength *✓* Thickness of shell *✓* Description of longitudinal joint *✓*  
Diameter of rivet holes *✓* Pitch of rivets *✓* Percentage of strength of joint *✓*  
Internal diameter *✓* Working pressure by Rules *✓* Thickness of crown *✓* No. and diameter of stays *✓*  
How connected to shell *✓* Inner radius of crown *✓* Working pressure by Rules *✓*  
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 { 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 *✓*  
Area of each safety valve *✓* Is a safety valve fitted to every part of the superheater which can be shut off from the boiler *✓*  
Rules *✓* Are the safety valves fitted with easing gear *✓* Working pressure as per Hydraulic test pressure: *✓*  
tubes *✓* Pressure to which the safety valves are adjusted *✓* 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*

*W. L. Land* Manufacturer.  
SECRETARY.

Dates of Survey { During progress of work in shops - - *See Machy report.* Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval) *✓*  
while building { During erection on board vessel - - *✓* Total No. of visits *1*

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.)

*These boilers have been constructed under special Survey, and are in accordance with the approved plan. The workmanship is good and the boilers have been satisfactorily fitted on board and examined under steam.*

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

*J. P. Milton*  
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute **LIVERPOOL - 4 OCT. 1929**

Assigned *See Machy report.*



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