

REPORT ON BOILERS.

No. 96791.

19 MAR 1930

Received at London Office

Date of writing Report 18/8/30 When handed in at Local Office 13/8/30

Port of

Liverpool

No. in Reg. Book.

Survey held at

Birkenhead

Date First Survey

14/5/29

Last Survey

4/3/30

1930

9333

on the

S.S. 'Athelcraig'

(Number of Visits 74)

Tons

Gross 8999

Net

Master

Built at

Birkenhead

By whom built

Messrs Cammell Laird & Co

Yard No.

959

When built

1930

Engines made at

Greenock

By whom made

John Kincaid

Engine No.

1149

When made

1930

Boilers made at

Birkenhead

By whom made

Cammell Laird & Co Ltd

Boiler No.

959

When made

1930

Nominal Horse Power

709

Owners

United Molasses Co Ltd

Port belonging to

Liverpool

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel

David Colville & Sons.

(Letter for Record S.)

Total Heating Surface of Boilers

1823 sq ft

Is forced draught fitted

Yes

Coal or Oil fired

Oil

No. and Description of Boilers

One cylindrical multitubular

Working Pressure

180 lb sq in

Tested by hydraulic pressure to

320 lb sq in

Date of test

10/9/29

No. of Certificate

2346

Can each boiler be worked separately

Yes

Area of Firegrate in each Boiler

No. and Description of safety valves to each boiler

Two spring loaded high lift

Area of each set of valves per boiler

per Rule approved 7.95 sq in

as fitted

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

21"

Is oil fuel carried in the double bottom

Yes

Smallest distance between shell of boiler and tank top plating

On 2nd deck

Is the bottom of the boiler insulated

Yes

Largest internal dia. of boilers

13' 4 7/8"

Length

11' 1"

Shell plates: Material

Steel

Tensile strength

26-32 tons sq in

Thickness

1 1/8"

Are the shell plates welded or flanged

No

Description of riveting: circ. seams

end OR lap

long. seams

Jab. Riv. Double butts

Diameter of rivet holes in

circ. seams 1 1/4"

long. seams 1 3/16"

Pitch of rivets

3-5 1/2"

Percentage of strength of circ. end seams

plate 67.5

rivets 48

Percentage of strength of circ. intermediate seam

plate 85.8

rivets 90.4

Percentage of strength of longitudinal joint

plate 85.8

rivets 90.4

combined 89.7

Working pressure of shell by Rules

185 lb sq in

Thickness of butt straps

outer 7/8"

inner 1"

No. and Description of Furnaces in each Boiler

Three—Corrugated

Material

Steel

Tensile strength

26-30 tons sq in

Smallest outside diameter

37"

Length of plain part

top 1' 6"

bottom 1' 6"

Thickness of plates

crown 1 1/2"

bottom 1 1/2"

Description of longitudinal joint

Weld

Dimensions of stiffening rings on furnace or u.s. bottom

None

Working pressure of furnace by Rules

182 lb sq in

End plates in steam space: Material

Steel

Tensile strength

26-30 tons sq in

Thickness

1 3/32"

Pitch of stays

18 1/2" x 18 1/2"

How are stays secured

Double nuts & plain washers

Working pressure by Rules

182 lb sq in

Tube plates: Material

front steel

back steel

Tensile strength

26-30 tons sq in

Thickness

3/32"

Mean pitch of stay tubes in nests

9 3/4"

Pitch across wide water spaces

14"

Working pressure

front 243 lb sq in

back 215 lb sq in

Girders to combustion chamber tops: Material

Steel

Tensile strength

28-32 tons sq in

Depth and thickness of girder

at centre

2 x 9 1/2" x 7/8"

Length as per Rule

3'-1 9/16"

Distance apart

9"

No. and pitch of stays

in each

Three x 9"

Working pressure by Rules

194 lb sq in

Combustion chamber plates: Material

Steel

Tensile strength

26-30 tons sq in

Thickness: Sides

2 1/32"

Back

2 1/32"

Top

2 1/32"

Bottom

1 3/16"

Pitch of stays to ditto: Sides

9' x 9 1/4"

Back

9' x 8 1/2"

Top

9' x 9"

Are stays fitted with nuts or riveted over

Nuts

Working pressure by Rules

180 lb sq in

Front plate at bottom: Material

Steel

Tensile strength

26-30 tons sq in

Thickness

3/32"

Lower back plate: Material

Steel

Tensile strength

26-30 tons sq in

Thickness

1 3/16"

Pitch of stays at wide water space

14 3/8" x 9"

Are stays fitted with nuts or riveted over

Nuts

Working Pressure

187 lb sq in

Main stays: Material

Steel

Tensile strength

28-32 tons sq in

Diameter

At body of stay, or Over threads

3"

No. of threads per inch

6

Area supported by each stay

342 sq in

Working pressure by Rules

196 lb sq in

Screw stays: Material

Steel

Tensile strength

26-30 tons sq in

Diameter

At turned off part, or Over threads

1 7/8"

No. of threads per inch

9

Area supported by each stay

83 sq in

182
Working pressure by Rules $180\frac{1}{2}$ Are the stays drilled at the outer ends *no* Margin stays: Diameter { At turned off part $1\frac{3}{4}$ "
Over threads
No. of threads per inch *9* Area supported by each stay $103\frac{1}{2}$ " Working pressure by Rules $207\frac{1}{2}$ "
Tubes: Material *B.B. Iron* External diameter { Plain $3\frac{1}{2}$ " Thickness $4\frac{1}{4}$ " No. of threads per inch *9*
Stay $3\frac{1}{2}$ "
Pitch of tubes $4\frac{5}{16} \times 4\frac{3}{16}$ " Working pressure by Rules $205\frac{1}{2}$ " Manhole compensation: Size of opening in
shell plate 21×17 " Section of compensating ring $9\frac{1}{4} \times 1\frac{3}{16}$ " No. of rivets and diameter of rivet holes $36 \times 1\frac{1}{16}$ "
Outer row rivet pitch at ends $8\frac{3}{4}$ " Depth of flange if manhole flanged $3\frac{1}{2}$ " 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 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 { Tubes
Steel castings
Number of elements Material of tubes Internal diameter and thickness of tubes
Material of headers Tensile strength Thickness
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,

CAMMELL, LAIRD AND COMPANY LIMITED.

Manufacturer.

Dates { During progress of
of Survey work in shops - - - See Machy report.
while { During erection on
building board vessel - - -

Are the approved plans of boiler and superheater forwarded herewith
(If not state date of approval.)

Total No. of visits

SECRETARY.

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

This boiler has been constructed under Special Survey, and is in accordance with the Rules and the approved plan. It has been satisfactorily fitted on board and examined under steam and is eligible for notation of D.B. 180% in Registered book.

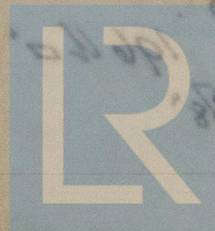
Survey Fee ... £ 12. 3. 0 When applied for, 18 MAR. 1930
Travelling Expenses (if any) £ : : When received, 12/4/30

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

Committee's Minute

LIVERPOOL 18 MAR. 1930

Assigned

See accompanying
machy rpt.
EJR

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Foundation