

## REPORT ON BOILERS.

No. 98861.

Received at London Office 24 JUN 1931

Date of writing Report

1931

When handed in at Local Office

22/6/31

1931

Port of

Liverpool

No. in Survey held at

Birkenhead

Date First Survey

19<sup>th</sup> Mar/30

Last Survey

19<sup>th</sup> June 1931

leg. Book.

on the

S. S. 'Athelfram'

(Number of Visits

99

Gross 6554

Tons Net 3789

Master

Built at

Birkenhead

By whom built

Messrs. Cammell Laird &amp; Co.

Yard No.

972

When built

1930

Engines made at

Wallsend

By whom made

North Eastern Marine E. C. Ltd.

Engine No.

2754

When made

1930

Boilers made at

Birkenhead

By whom made

Cammell Laird &amp; Co. Ltd.

Boiler No.

972

When made

1930

Nominal Horse Power

476

Owners

United Molasses Co. Ltd.

Port belonging to

Liverpool

## MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel

David Colville &amp; Sons. (Earl of Dudley Stamp)

(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

23/6/30

No. of Certificate

2363

Can each boiler be worked separately

Area of Firegrate in each Boiler

No. and Description of safety valves to each boiler

Two spring loaded

Area of each set of valves per boiler

(per Rule as fitted)

7.95 sq. ft.

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 under boilers

Yes

Smallest distance between shell of boiler and tank top plating

on 2<sup>nd</sup> 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

28-32 tons sq. in.

Thickness

1 1/8"

Are the shell plates welded or flanged

No

Description of riveting: circ. seams

end

DR lap

long. seams

Double R. Double butts

Diameter of rivet holes in

circ. seams

1 1/4"

Pitch of rivets

3 5/8"

Percentage of strength of circ. end seams

(plate rivets)

67.5

Percentage of strength of circ. intermediate seam

(plate rivets)

89.7

Percentage of strength of longitudinal joint

(plate rivets)

85.8

Working pressure of shell by Rules

185 lb. sq. in.

Thickness of butt straps

(outer)

1 1/8"

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)

15 1/2"

Thickness of plates

(crown)

15 1/2"

Description of longitudinal joint

Weld

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

31/32"

Mean pitch of stay tubes in nests

9 3/4"

Pitch across wide water spaces

14"

Working pressure

(front) 24 3/4 lb. sq. in.

(back) 21 5/8 lb. sq. in.

Girders to combustion chamber tops: Material

Steel

Tensile strength

28-32 tons sq. in.

Depth and thickness of girder

at centre

22 9 1/2" x 7 1/8"

Length as per Rule

3'-1 9/16"

Distance apart

9"

No. and pitch of stays

in each

Three 2 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

31/32"

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 top 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 5/8"

No. of threads per inch

9

Area supported by each stay

83 sq. in.

W336-0056

Lloyd's Register  
Foundation



Working pressure by Rules **180 lb** Are the stays drilled at the outer ends **no** ✓ Margin stays: Diameter **1 3/4"** ✓  
 No. of threads per inch **9** Area supported by each stay **103 sq"** Working pressure by Rules **207 lb** ✓  
 Tubes: Material **B.B. Iron** External diameter **3"** ✓ Thickness **1/4"** ✓ No. of threads per inch **9** ✓  
 Pitch of tubes **4 7/16" x 4 3/16"** Working pressure by Rules **205 lb** ✓ Manhole compensation: Size of opening **1 7/16"** ✓  
 shell plate **21" x 17"** ✓ Section of compensating ring **9 3/4" x 1 3/16"** ✓ No. of rivets and diameter of rivet holes **36 @ 1 7/16"** ✓  
 Outer row rivet pitch at ends **8 3/4"** ✓ Depth of flange if manhole flanged **3 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 **✓**  
 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 **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 **✓**  
 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 **✓** 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,  
**GAMMELL LAIRD AND COMPANY LIMITED.**  
 Dates of Survey **During progress of work in shops - -** **SECRETARY,**  
 while building **During erection on board vessel - -** **See machinery Report** Are the approved plans of boiler and superheater forwarded herewith **✓**  
 (If not state date of approval.)  
 Total No. of visits **✓**

**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 examined under steam and found satisfactory and is eligible in my opinion for notation of 180 lb in Register book.**

Survey Fee **12-3-0** When applied for **22/6/31**  
 Travelling Expenses (if any) **8-7-** When received **8-7-**

**J. D. Mutton.**  
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute **LIVERPOOL 23 JUNE 1931**  
 Assigned **See Mch's rpt**