

## REPORT ON BOILERS.

No. 40468.

Received at London Office

31 DEC 1929

Date of writing Report 28.12.1929 When handed in at Local Office 28 Dec 1929 Port of

HULL.

No. in Reg. Book. Survey held at

Hull.

Date, First Survey

27 June 1929

Last Survey

23 Dec 1929.

+1325 on the T.S.S. "MARKLAND"

(Number of Visits 47.)

Gross 4453.54  
Net 3894.94

Master

Built at

Hull

By whom built

Charles S.B. &amp; Co. Ltd

Yard No. 644

When built 1929

Engines made at

Hull

By whom made

do

Engine No. 644

When made 1929

Boilers made at

Hull

By whom made

do

Boiler No. 644

When made 1929

Nominal Horse Power

334

Owners

Honey Shipping Co. Ltd.

Port belonging to

Liverpool N.S.

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

Manufacturers of Steel Plates: Apperly &amp; Co. Ltd. Barrow, Frothingham &amp; Co. (Letter for Record (5))

Total Heating Surface of Boilers

5205 sq. ft.

Is forced draught fitted

Yes

Coal or Oil fired Coal &amp; Oil

No. and Description of Boilers

Three single ended return tubes

358

Working Pressure 180 lbs.

Tested by hydraulic pressure to

320 lbs.

Date of test

27.9.29

No. of Certificate

3436

Can each boiler be worked separately

Yes

Area of Firegrate in each Boiler

42 sq. ft.

No. and Description of safety valves to each boiler

2 Spring loaded high lift.

Area of each set of valves per boiler

per Rule

as fitted

8" 8"

Pressure to which they are adjusted

180 lbs.

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

16"

Is oil fuel carried in the double bottom under boilers

Yes

Smallest distance between shell of boiler and tank top plating

16"

Is the bottom of the boiler insulated

Yes

Largest internal dia. of boilers

153"

Length

138"

Shell plates: Material

Steel

Tensile strength

19/33 Tons.

Thickness

1 1/2"

Are the shell plates welded or flanged

Yes

Description of riveting: circ. seams

end

inter.

Long. seams

T.R. S.B.S.

Diameter of rivet holes in

circ. seams

1 1/16"

Pitch of rivets

3 1/2"

Percentage of strength of circ. end seams

plate

64.0

rivets

43.0

Percentage of strength of circ. intermediate seam

plate

85.4

rivets

Percentage of strength of longitudinal joint

plate

85.4

rivets

85.9

Working pressure of shell by Rules

183 lbs.

Thickness of butt straps

outer

7/8"

inner

1 1/16"

No. and Description of Furnaces in each Boiler

Two Bightons. 2 cf.

Material

Steel

Tensile strength

26/30 Tons

Smallest outside diameter

47 3/4"

Length of plain part

top

10 1/2"

bottom

-

Thickness of plates

crown

19/32"

bottom

1/32"

Description of longitudinal joint

welded.

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

Yes

Working pressure of furnace by Rules

183 lbs.

End plates in steam space: Material

Steel

Tensile strength

26/30 Tons

Thickness

1 3/32"

Pitch of stays 18" x 16 1/2"

How are stays secured

Double nuts.

Working pressure by Rules

185 lbs.

Tube plates: Material

front

Steel

back

-

Tensile strength

26/30 Tons.

Thickness

13/16"

7/8"

Lean pitch of stay tubes in nests

10.4"

Pitch across wide water spaces

13"

Working pressure

front

193 lbs.

back

291

Girders to combustion chamber tops: Material

Steel

Tensile strength

26/32 Tons.

Depth and thickness of girder

At centre

9 1/2" x 1 1/2"

Length as per Rule

34 3/4"

Distance apart

9 1/2"

No. and pitch of stays

At each

3 @ 8 1/4"

Working pressure by Rules

212 lbs.

Combustion chamber plates: Material

Steel

Tensile strength

26/30 Tons

Thickness: Sides

23/32"

Back

21/32"

Top

21/32"

Bottom

23/32"

Pitch of stays to ditto: Sides

9 1/2" x 8 1/4"

Back

9 1/4" x 8 1/4"

Top

9 1/2" x 8 1/4"

Are stays fitted with nuts or riveted over

nuts.

Working pressure by Rules

190 lbs.

Front plate at bottom: Material

Steel

Tensile strength

26/30 Tons.

Thickness

13/16"

Lower back plate: Material

Steel

Tensile strength

26/30 Tons.

Thickness

13/16"

Pitch of stays at wide water space

14" x 8 1/4"

Are stays fitted with nuts or riveted over

nuts

Working Pressure

203 lbs.

Main stays: Material

Steel

Tensile strength

26/32 Tons.

Diameter

At body of stay,

or

over threads

2 3/4"

No. of threads per inch

6

Area supported by each stay

294 sq. in.

Working pressure by Rules

185 lbs.

Screw stays: Material

Steel

Tensile strength

26/30 Tons

Diameter

At turned off part,

or

over threads

1 5/8"

No. of threads per inch

9

Area supported by each stay

76.3 sq. in.

004153-004159-0084



Working pressure by Rules 200 Lb Are the stays drilled at the outer ends ☒ Margin stays: Diameter <sup>At turned off part.</sup> 1 3/4" - 1 7/8" or Over threads

No. of threads per inch 9 Area supported by each stay 96 0 Working pressure by Rules 220 Lb.

Tubes: Material Iron External diameter <sup>Plain</sup> 2 1/2" Thickness <sup>Stay</sup> 9 Lb. No. of threads per inch 9

Pitch of tubes 4" x 3 3/4" Working pressure by Rules 230 Lb Manhole compensation: Size of opening in

END shell plate 16" x 12" Section of compensating ring ☒ No. of rivets and diameter of rivet holes ☒

Outer row rivet pitch at ends ☒ Depth of flange if manhole flanged 3 5/8" Steam Dome: Material

Tensile strength Thickness of shell Description of longitudinal joint

Diameter of rivet holes Pitch of rivets Percentage of strength of joint <sup>Plate</sup> Rivets

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

Number of elements Material of tubes Manufacturers of Tubes Steel castings

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 23 inclusive for boilers been complied with

FOR EARLE'S SHIPBUILDING & ENGINEERING CO. LIMITED

The foregoing is a correct description,

Manufacturer.

Dates of Survey { During progress of work in shops - - } while building { During erection on board vessel - - }

See attached report on Machinery - Total No. of visits

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

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

These boilers have been built under special survey & in accordance with the approved plan & the materials & workmanship are sound & good. They have been satisfactorily fitted on board, tried under steam & their safety valves adjusted under steam as above.

Charge on engine report

Survey Fee £ : : Travelling Expenses (if any) £ : :

When applied for, ☒ 192 When received, ☒ 192

John Mackenzie

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

FRI. 10 JAN 1930

Assigned

See P. 8 of attached



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