

## REPORT ON BOILERS.

No. 112620.

Received at London Office JUN 1 1939

Date of writing Report

19

When handed in at Local Office

30 MAY 1939

Port of

LIVERPOOL

No. in Reg. Book.

Survey held at

Birkenhead S.S.D.

Date, First Survey

29/6/38

Last Survey

12/5/39

(Number of Visits 92)

Gross 876p  
Net 4767

on the

S. S. 'Diloma'

Master

Built at

Birkenhead

By whom built

Cammell Laird &amp; Co

Yard No

1037

When built

1934

Engines made at

Hawthorn Leslie &amp; Co

By whom made

Hawthorn Leslie &amp; Co

Engine No

3955

When made

1939

Boilers made at

Birkenhead

By whom made

Cammell Laird &amp; Co

Boiler No

1037

When made

1939

Nominal Horse Power

582

Owners

Anglo Saxon Petroleum Co

Port belonging to

London

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

Manufacturers of Steel

Colvill &amp; Co. Glasgow Dorman Long &amp; Co Ltd

(Letter for Record

5

Total Heating Surface of Boilers

2500 sq ft

Is forced draught fitted

Yes

Coal or Oil fired

oil, or Exhaust Gas.

No. and Description of Boilers

one multitubular cylindrical

Working Pressure

180 lb sq in

Tested by hydraulic pressure to

320 lb sq in

Date of test

9/12/38

No. of Certificate

2509

Can each boiler be worked separately

Yes

Area of Firegrate in each Boiler

Yes

No. and Description of safety valves to each boiler

Two - spring loaded

Area of each set of valves per boiler

per Rule

16 sq in

as fitted

16.6 sq in

Pressure to which they are adjusted

180 lb

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

2'-9"

Is oil fuel carried in the double bottom under boilers

No

Smallest distance between shell of boiler and tank top plating

3'-5"

Is the bottom of the boiler insulated

Yes

Largest internal dia. of boilers

14'-3 7/8"

Length

11'-6"

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

DR lap

Long. seam

Double R. double butt

Diameter of rivet holes in

circ. seams

1 1/4"

Pitch of rivets

3.48"

Percentage of strength of circ. end seams

plate

64

rivets

49

Percentage of strength of circ. intermediate seam

plate

Yes

Percentage of strength of longitudinal joint

plate

85.7

rivets

91

combined

89.8

Working pressure of shell by Rules

183 lb sq in

Thickness of butt straps

outer

1 7/16"

inner

1 1/32"

No. and Description of Furnaces in each Boiler

Three Corrugated.

Material

Steel

Tensile strength

26-30 tons sq in

Smallest outside diameter

3'-7 7/8"

Length of plain part

top

Yes

bottom

Thickness of plates

crown

9/16"

bottom

Description of longitudinal joint

Weld.

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

None

Working pressure of furnace by Rules

189 lb sq in

End plates in steam space: Material

Steel

Tensile strength

26-30 tons sq in

Thickness

1 7/32"

Pitch of stays

21 x 17 1/4"

How are stays secured

Double nuts &amp; then washers

Working pressure by Rules

181 lb sq in

Tube plates: Material

front

Steel

back

Steel

Tensile strength

26-30 tons sq in

Thickness

1 5/16"

Lean pitch of stay tubes in nests

8'-8"

Pitch across wide water spaces

13 3/4"

Working pressure

front

243 lb sq in

back

302 lb sq in

Girders to combustion chamber tops: Material

Steel

Tensile strength

28-32 tons sq in

Depth and thickness of girder

Centre

2 plates 10 x 3 1/4"

Length as per Rule

3 x 4"

Distance apart

10"

No. and pitch of stays

each

3 x 8"

Working pressure by Rules

194 lb sq in

Combustion chamber plates: Material

Steel

Tensile strength

26-30 tons sq in

Thickness: Sides

23 1/32"

Back

23 1/32"

Top

23 1/32"

Bottom

7/8"

Pitch of stays to ditto: Sides

8 x 8"

Back

8 x 8"

Top

10 x 8"

Are stays fitted with nuts or riveted over

riveted marginal

Working pressure by Rules

189 lb sq in

Front plate at bottom: Material

Steel

Tensile strength

26-30 tons sq in

Thickness

1 5/16"

Lower back plate: Material

Steel

Tensile strength

26-30 tons sq in

Thickness

2 7/32"

Pitch of stays at wide water space

15 x 8"

Are stays fitted with nuts or riveted over

nuts

Working Pressure

201 lb sq in

Main stays: Material

Steel

Tensile strength

28-32 tons sq in

Shipping meter

At body of stay

3"

No. of threads per inch

6

Area supported by each stay

373 sq in

Working pressure by Rules

188 lb sq in

Screw stays: Material

Steel

Tensile strength

26-30 tons sq in

Shipping meter

At turned off part

1 1/2"

No. of threads per inch

9

Area supported by each stay

64 sq in



Working pressure by Rules 196 1/2 Are the stays drilled at the outer ends no Margin stays: Diameter 1 3/4 At turned off part or over threads  
No. of threads per inch 9 Area supported by each stay 92 Working pressure by Rules 192 1/2  
Tubes: Material L.W.W. Iron External diameter 2 3/4 Plain 2 3/4 Stay 2 3/4 Thickness 1 7/16 No. of threads per inch 9  
Pitch of tubes 4 x 3 7/8 Working pressure by Rules 210 1/2 Manhole compensation: Size of opening in 40  
shell plate 21 x 17 Section of compensating ring 10 1/2 x 1 3/16 No. of rivets and diameter of rivet holes 40  
Outer row rivet pitch at ends 8 3/4 Depth of flange if manhole flanged 3 1/2 Steam Dome: none  
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 rivets ✓  
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

Number of elements ✓ Material of tubes ✓ Manufacturers of ✓ Tubes ✓ Steel castings ✓  
Material of headers ✓ Tensile strength ✓ Thickness ✓ Internal diameter and thickness of tubes ✓  
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, W.H. Hume

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

See Machy report.

Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.)  
Total No. of visits ✓

Is this Boiler a duplicate of a previous case no If so, state Vessel's name and Report No. ✓

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. The workmanship is good throughout. It has been satisfactorily fitted on board, and examined under steam, and is eligible in my opinion for classification in Register book with record of 20 180 1/2

Survey Fee ... £ : : When applied for, 19  
Travelling Expenses (if any) £ : : When received, 19

J. H. Milton

Engineer Surveyor to Lloyd's Register of Shipping

Committee's Minute LIVERPOOL 31 MAY 1939

Assigned See Minute on I.E. Machinery



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