

## REPORT ON BOILERS.

No. 40707.

Received at London Office

31 MAR 1930

Date of writing Report

29.3.30

When handed in at Local Office

29 March 1930

Port of

HULL.

No. in Survey held at

Hull

Date, First Survey

17<sup>th</sup> Dec/24

Last Survey

20 March 1930

Reg. No.

16577 on the Steam Trawler "AVANTURINE"

(Number of Visits 18)

Gross 246.35  
Net 129.69

Master

Built at

Beverley

By whom built

Cook, Kellon &amp; Gemmell

Hull No. 542

When built 1930

Engines made at

Hull

By whom made

Charles D. Holmes &amp; Co. Ltd

Engine No. 1392

When made 1930

Boilers made at

Hull

By whom made

do

Boiler No. 1392

When made 1930

Nominal Horse Power

89

Owners

Lupton Steam Trawling Co. Ltd

Port belonging to

Hull

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

Manufacturers of Steel

Appley &amp; Son Co. Ltd

(Letter for Record

(S)

Total Heating Surface of Boilers

1606 Sq. feet

Is forced draught fitted

No

Coal or Oil fired

Coal

No. and Description of Boilers

One single ended return tube

Working Pressure 200 lbs

Tested by hydraulic pressure to

350 lbs

Date of test

21.2.30

No. of Certificate

3762

Can each boiler be worked separately

✓

Area of Firegrate in each Boiler

48.6 sq. ft.

No. and Description of safety valves to each boiler

2 Spring loaded

Area of each set of valves per boiler

per Rule 9.35 sq. ft.  
as fitted 9.8 "

Pressure to which they are adjusted

200 lbs

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

Y

Is oil fuel carried in the double bottom under boilers

✓

Smallest distance between shell of boiler and tank top plating

✓

Is the bottom of the boiler insulated

✓

Largest internal dia. of boilers

13'-6"

Length

10'-6"

Shell plates: Material

Steel

Tensile strength

29/33 Tons

Thickness

1 13/64"

Are the shell plates welded or flanged

✓

Description of riveting: circ. seams

end D.R.

Long. seams

T.R. D.B.S.

Diameter of rivet holes in

circ. seams 1 1/2"

long. seams 1 1/4"

Pitch of rivets

3 3/8"

Percentage of strength of circ. end seams

plate 62.0

rivets 51.0

Percentage of strength of circ. intermediate seam

plate 85.4

rivets 88.3

Percentage of strength of longitudinal joint

plate 88.4

rivets 88.3

combined 88.46

Working pressure of shell by Rules

203 lbs.

Thickness of butt straps

outer 1 5/16"

inner 1 3/16"

No. and Description of Furnaces in each Boiler

Three plain

Material

Steel

Tensile strength

26/30 Tons.

Smallest outside diameter

40 1/2"

Length of plain part

top 82"

bottom

Thickness of plates

crown 1 3/16"

bottom

Description of longitudinal joint

Welded

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

✓

Working pressure of furnace by Rules

210 lbs.

End plates in steam space: Material

Steel

Tensile strength

26/30 Tons

Thickness

1 3/32"

Pitch of stays

18" x 14"

How are stays secured

Double nuts and washers

Working pressure by Rules

216 lbs.

Tube plates: Material

front Steel

back

Tensile strength

26/30 Tons.

Thickness

1 5/16"

7/8"

Mean pitch of stay tubes in nests

10.9"

Pitch across wide water spaces

1 3/2"

Working pressure

front 220 lbs.  
back 214

Girders to combustion chamber tops: Material

Steel

Tensile strength

26/32 Tons

Depth and thickness of girder

At centre

8 1/2" x 1 3/4"

Length as per Rule

32 3/4"

Distance apart

9"

No. and pitch of stays

In each

3 @ 8 1/4"

Working pressure by Rules

209 lbs.

Combustion chamber plates: Material

Steel

Tensile strength

26/30 Tons.

Thickness: Sides

1 1/16"

Back

1 1/16"

Top

2 1/32"

Bottom

1 1/16"

Pitch of stays to ditto: Sides

9 1/2" x 8 1/4"

Back

9 1/4" x 8 3/4"

Top

9" x 8 1/4"

Are stays fitted with nuts or riveted over

nuts

Working pressure by Rules

204 lbs.

Front plate at bottom: Material

Steel

Tensile strength

26/30 Tons.

Thickness

1 5/16"

Lower back plate: Material

Steel

Tensile strength

26/30 Tons.

Thickness

2 7/32"

Pitch of stays at wide water space

13 1/4" x 9 1/4"

Are stays fitted with nuts or riveted over

nuts

Working Pressure

222 lbs.

Main stays: Material

Steel

Tensile strength

26/32 Tons.

Diameter

At body of stay, 3"

Over threads

No. of threads per inch

8

Area supported by each stay

306 sq. in.

Working pressure by Rules

219 lbs.

Screw stays: Material

Steel

Tensile strength

26/30 Tons.

Diameter

At turned off part, 1 7/8"

Over threads

1 3/4"

No. of threads per inch

10

Area supported by each stay

80.8 sq. in.



Working pressure by Rules 222 Lb. Are the stays drilled at the outer ends 20 Margin stays: Diameter { At turned off part, 17/8"  
 No. of threads per inch 10 Area supported by each stay 101 sq Working pressure by Rules 210 Lb.  
 Tubes: Material Iron External diameter { Plain } 3 1/2" Thickness { 5/16" No. of threads per inch 9  
 Pitch of tubes 4 3/4" Working pressure by Rules 215 Lb. Manhole compensation: Size of opening in  
 shell plate 16" x 12" Section of compensating ring 1 3/4" x 54" diam. No. of rivets and diameter of rivet holes 16 @ 1 1/4"  
 Outer row rivet pitch at ends 10.3" Depth of flange if manhole flanged - Steam Dome: Material Steel  
 Tensile strength 16 Tons Thickness of shell 3/4" Description of longitudinal joint S.R. Lap.  
 Diameter of rivet holes 1 3/32" Pitch of rivets 2 1/4" Percentage of strength of joint { Plate 54.0  
 Internal diameter 33" Working pressure by Rules 229 Lb. Thickness of crown 7/8" Rivets 43.8  
 stays 2 @ 2 1/4" Inner radius of crown - Working pressure by Rules -  
 How connected to shell Riveted Size of doubling plate under dome 1 3/4" x 54" diam. Diameter of rivet holes and pitch  
 of rivets in outer row in dome connection to shell 1 1/4" @ 10.3"

Type of Superheater \_\_\_\_\_ 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 \_\_\_\_\_ 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 \_\_\_\_\_

The foregoing is a correct description,

*John Cooper*

Manufacturer

Dates of Survey { During progress of work in shops - - - } See attached report Are the approved plans of boiler and superheater forwarded herewith  
 while building { During erection on board vessel - - - } on Mackay. (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 built in accordance with the approved plan, and the materials & workmanship are sound & good. It has been satisfactorily fitted on board, tried under steam and safety valves adjusted as above.

The shut invoices enclosed refer also to boiler 1393 to be reported shortly.

Charge on Engineer's report

Survey Fee £ 100 When applied for, ✓ 192  
 Travelling Expenses (if any) £ 100 When received, ✓ 192

*John Mackay*

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

TUE. 1 APR 1930

Assigned

See other report



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Foundation