

## REPORT ON BOILERS.

No. 45342

12 DEC 1934

Received at London Office

Date of writing Report

19

When handed in at Local Office

11 DEC 1934

Port of

HULL

No. in Survey held at  
Reg. Book.

Hull

Date, First Survey

24th Aug 1934

Last Survey

3rd Dec, 1934

on the

Steel h. k. "St. Achilleus"

(Number of Visits)

Gross

484.37

Tons

Net 188.82

Master

Built at

Beverley

By whom built

Cook, Welton &amp; Gemmell Ltd.

Yard No.

595

When built

1934, 12

Engines made at

Hull

By whom made

Charles D. Holmes &amp; Co. Ltd.

Engine No.

1470

When made

1934

Boilers made at

Hull

By whom made

Charles D. Holmes &amp; Co. Ltd.

Boiler No.

1470

When made

1934

Nominal Horse Power

154

Owners

Thomas Hamlyn &amp; Co. Ltd.

Port belonging to

Hull.

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

Manufacturers of Steel

Appleby Iron Co. Ltd.

(Letter for Record

"S")

Total Heating Surface of Boilers

2402 sq ft.

Is forced draught fitted

Yes

Coal or Oil fired

Coal

No. and Description of Boilers

One single ended return tube

Working Pressure

215 #0

Tested by hydraulic pressure to

373 #0

Date of test

26-10-34

No. of Certificate

3901

Can each boiler be worked separately

Yes

Area of Firegrate in each Boiler

60.5 sq ft.

No. and Description of safety valves to each boiler

2 Spring loaded.

Area of each set of valves per boiler

per Rule

15.25 sq inches

as fitted

16.58 "

Pressure to which they are adjusted

215 #0

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

11 1/2"

Is oil fuel carried in the double bottom under boilers

Yes

Smallest distance between shell of boiler and tank top plating

Is the bottom of the boiler insulated

Yes

Largest internal dia. of boilers

186"

Length

11' 6"

Shell plates: Material

Steel

Tensile strength

31/35 tons 0"

Thickness

1 3/8"

Are the shell plates welded or flanged

Yes

Description of riveting: circ. seams

end

3 3/4"

inter.

9 1/8"

long. seams

L.R. 8455

Diameter of rivet holes in

circ. seams

long. seams

1 1/32"

Pitch of rivets

9 1/8"

Percentage of strength of circ. end seams

plate

62.50

rivets

88.50

Percentage of strength of circ. intermediate seam

plate

84.58

rivets

86.10

Percentage of strength of longitudinal joint

plate

84.58

rivets

86.10

combined

86.50

Working pressure of shell by Rules

215 #0

Thickness of butt straps

outer 1 1/16"

inner 1 3/16"

No. and Description of Furnaces in each Boiler

3 corrugated (Seighton)

Material

Steel

Tensile strength

26/30 tons 0"

Smallest outside diameter

45.125"

Length of plain part

top

bottom

Yes

Thickness of plates

crown 1 1/16"

bottom 1 1/16"

Description of longitudinal joint

Welded.

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

Working pressure of furnace by Rules

223 #0

End plates in steam space: Material

Steel

Tensile strength

26/30 tons 0"

Thickness

1 3/16"

Pitch of stays

18 1/4" x 18 3/4"

How are stays secured

Double nuts and washers

Working pressure by Rules

215 #0

Tube plates: Material

front

back

Steel

Tensile strength

26/30 tons 0"

Thickness

7/8"

Mean pitch of stay tubes in nests

10.62"

Pitch across wide water spaces

14 1/2"

Working pressure

front 228 #0"

back 249 #0"

Girders to combustion chamber tops: Material

Steel

Tensile strength

29/33 tons 0"

Depth and thickness of girder

at centre

9 1/2" x 1 3/4"

Length as per Rule

2' 11 15/16"

Distance apart

centre 8" Wings 9" x 8 1/4"

No. and pitch of stays

in each

3 @ 8 1/2"

Working pressure by Rules

219 #0"

Combustion chamber plates: Material

Steel

Tensile strength

26/30 tons 0"

Thickness: Sides

23/32"

Back

1 1/16"

Top

1 1/16"

Bottom

1 3/16"

Pitch of stays to ditto: Sides

9 1/2" x 8 1/2"

Back

8 3/4" x 8 1/8"

Top

9 x 8 1/2"

Are stays fitted with nuts or riveted over

nuts

Working pressure by Rules

215 #0"

Front plate at bottom: Material

Steel

Tensile strength

26/30 tons 0"

Thickness

15/16"

Lower back plate: Material

Steel

Tensile strength

26/30 tons 0"

Thickness

7/8"

Pitch of stays at wide water space

14 1/2" x 8 3/8"

Are stays fitted with nuts or riveted over

nuts

Working Pressure

226 #0"

Main stays: Material

Steel

Tensile strength

28 tons 0" (min)

Diameter

At body of stay,

or

Over threads

3 1/4"

No. of threads per inch

8

Area supported by each stay

351 sq inches

Working pressure by Rules

228 #0"

Screw stays: Material

Steel

Tensile strength

26 (min) tons 0"

Diameter

At turned off part,

or

Over threads

1 3/4"

No. of threads per inch

10

Area supported by each stay

46 sq inches

W79-0143

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Foundation



Working pressure by Rules 239 #0 Are the stays drilled at the outer ends no Margin stays: Diameter 1 7/8" 2" & 2 1/8"  
No. of threads per inch 10 Area supported by each stay 99 sq inches Working pressure by Rules 215 #0  
Tubes: Material L.W. Iron External diameter 3 1/4" Thickness 5/16" 3/8" 7/16" No. of threads per inch 9  
Pitch of tubes 4 5/8" x 4 1/2" Working pressure by Rules 230 #0 Manhole compensation: Size of opening in  
shell plate 16" x 12" Section of compensating ring 4' 10" dia x 1 3/8" No. of rivets and diameter of rivet holes 106 @ 1 13/32"  
Outer row rivet pitch at ends 4 5/8" p.c. Depth of flange if manhole flanged 3 1/4" Steam Dome: Material Steel  
Tensile strength 26/30 tons Thickness of shell 3/4" Description of longitudinal joint S.R. lap.  
Diameter of rivet holes 1 1/32" Pitch of rivets 2 1/4" Percentage of strength of joint 54.00  
Internal diameter 33" Working pressure by Rules 230 #0 Thickness of crown 1/8" No. and diameter of  
stays 2 @ 2 1/4" Inner radius of crown 4' 10" dia x 1 3/8" Working pressure by Rules  
How connected to shell Riveted Size of doubling plate under dome 4' 10" dia x 1 3/8" Diameter of rivet holes and pitch  
of rivets in outer row in dome connection to shell 1 13/32" 3' 9 1/4" p.c. (36 rivets)  
Type of Superheater Smoke tube type by Superheater Co. Ltd. Manufacturers of Tubes Please see m/c certificates C3503.  
Number of elements 57 Material of tubes S.D. Steel Internal diameter and thickness of tubes 17 mm. 2.5 mm.  
Material of headers Steel forging Tensile strength 5/8" Can the superheater be shut off and  
the boiler be worked separately yes Is a safety valve fitted to every part of the superheater which can be shut off from the boiler yes  
Area of each safety valve 1.767 sq inches Are the safety valves fitted with easing gear yes Working pressure as per  
Rules Approved for 215 #0 Pressure to which the safety valves are adjusted 217 #0 Hydraulic test pressure:  
tubes 1000 #0 castings 645 #0 and after assembly in place 645 #0 Are drain cocks or valves fitted  
to free the superheater from water where necessary yes  
Have all the requirements of Sections 14 to 22 inclusive for boilers been complied with yes

The foregoing is a correct description,  
FOR CHARLES D. HOLMES & CO., LTD.  
J. R. Croft Manufacturer.

Dates of Survey During progress of work in shops - - Are the approved plans of boiler and superheater forwarded herewith  
while building During erection on board vessel - - (If not state date of approval.)  
See mch'y rpt. Total No. of visits ✓

Is this Boiler a duplicate of a previous case yes If so, state Vessel's name and Report No. "Pentland Firth"

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

This boiler has been built under special survey and in accordance with the approved plan. It has been satisfactorily fitted on board, tried under steam and its safety valves adjusted as above.

The boiler plan was forwarded previously, with report No 45298 on sister vessel "Pentland Firth."

Charged on engine report herewith

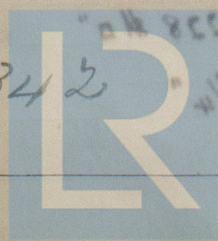
Survey Fee ... £ : : When applied for, 19  
Travelling Expenses (if any) £ : : When received, 19

B. Croft  
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRI. 21 DEC 1934

Assigned

See other H.L. Rpt. J.E. 45342



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