

REPORT ON BOILERS.

No. 87052

Received at London Office 21 APR 1931

Date of writing Report

192

When handed in at Local Office

20/4/31

Port of Newcastle-on-Tyne

No. in
Reg. Book.

Survey held at

St. Peter's, Hebburn

Date, First Survey

3rd Feb/30

Last Survey

16 April 1931

(Number of Visits)

Gross

3007

Tons

Net 1630

on the

Single ended boiler for the M/Y. "HELIOS."

Master

Built at

Hebburn

By whom built Hawthorn Leslie & Co. Ltd

No. 546 When built 1931

Engines made at

St. Peter's

By whom made

Hawthorn Leslie & Co. Ltd

Engine No. 3446 When made 1931

Boilers made at

St. Peter's

By whom made

Hawthorn Leslie & Co. Ltd

Boiler No. 3776 When made 1931

Nominal Horse Power

380

Owners Anglo Saxon Pet Co. Port belonging to London.

MULTITUBULAR BOILERS MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel

Steel Co. of Scotland

(Letter for Record S)

Total Heating Surface of Boilers

837 7 925 6

Is forced draught fitted

yes

Coal or Oil fired

oil

No. and Description of Boilers

1 single ended Marine.

Working Pressure 150 lbs

Tested by hydraulic pressure to

300 lb

Date of test

20.3.30

No. of Certificate

440

Can each boiler be worked separately

-

Area of Firegrate in each Boiler

oil

No. and Description of safety valves to each boiler

1 pair spring loaded I.H.L. type.

Area of each set of valves per boiler

per Rule 4.25
as fitted 6.28

Pressure to which they are adjusted

150 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

8 in between

Is oil fuel carried in the double bottom under boilers

no

Smallest distance between shell of boiler and tank top plating

7

Is the bottom of the boiler insulated

no.

Largest internal dia. of boilers

9'-10"

Length

9'-8"

Shell plates: Material

S

Tensile strength

30,015/33 T.

Thickness

25/32

Are the shell plates welded or flanged

no

Description of riveting: circ. seams

inter.

long. seams

J. R. D. B. S.

Diameter of rivet holes in

circ. seams 1"

Pitch of rivets

5 1/8"

Percentage of strength of circ. end seams

plate 66.6
rivets 51.8

Percentage of strength of circ. intermediate seam

plate 80.5
rivets 84.6

Percentage of strength of longitudinal joint

plate 80.5
rivets 84.6
combined 89.2

Working pressure of shell by Rules

141 lbs

Thickness of butt straps

outer 11/16"
inner 13/16"

No. and Description of Furnaces in each Boiler

Two Morrison.

Material

S

Tensile strength

26/30 T.

Smallest outside diameter

2'-8 3/8"

Length of plain part

top 7"
bottom 7"

Thickness of plates

crown 7/16"
bottom 7/16"

Description of longitudinal joint

weld.

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

none

Working pressure of furnace by Rules

193 lbs

End plates in steam space: Material

S.

Tensile strength

26/30 T.

Thickness

29/32"

Pitch of stays

15" x 14 3/4"

How are stays secured

Double nuts

Working pressure by Rules

140 lbs

Tube plates: Material

front steel
back steel

Tensile strength

26/30 T.

Thickness

23/32"

Mean pitch of stay tubes in nests

4 7/8"

Pitch across wide water spaces

14 1/4"

Working pressure

front 227 lbs
back 224 lbs

Girders to combustion chamber tops: Material

S.

Tensile strength

28/32 T.

Depth and thickness of girder

at centre

6 1/2" x 1 1/16"

Length as per Rule

23 5/8"

Distance apart

4 1/2"

No. and pitch of stays

in each

2 @ 4 1/2"

Working pressure by Rules

192 lbs

Combustion chamber plates: Material

S.

Tensile strength

26/30 T.

Thickness: Sides

21/32"

Back

21/32"

Top

21/32"

Bottom

21/32"

Pitch of stays to ditto: Sides

4 1/2" x 4 1/2"

Back

4 1/2" x 4 1/2"

Top

4 1/2" x 4 1/2"

Are stays fitted with nuts or riveted over riveted.

Working pressure by Rules

144 lbs

Front plate at bottom: Material

steel

Tensile strength

26/30 T.

Thickness

29/32"

Lower back plate: Material

S.

Tensile strength

26/30 T

Thickness

29/32"

Pitch of stays at wide water space

15 3/8" x 4 1/2"

Are stays fitted with nuts or riveted over

nuts.

Working Pressure

144 lbs

Main stays: Material

S.

Tensile strength

28/32 T.

Diameter

At body of stay, 2 1/4"
Over threads

No. of threads per inch

9

Area supported by each stay

221.25 sq

Working pressure by Rules

15 lbs

Screw stays: Material

S.

Tensile strength

26/30 T.

Diameter

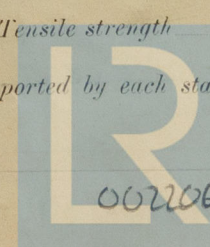
At turned off part, 1 3/8"
Over threads

No. of threads per inch

9

Area supported by each stay

56 1/4



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Working pressure by Rules 180 lbs. Are the stays drilled at the outer ends yes Margin stays: Diameter { At turned off part, 1 5/8" or Over threads 1 5/8" No. of threads per inch 9 Area supported by each stay 84 5/8" Working pressure by Rules 162 lbs.

Tubes: Material Steel External diameter { Plain 2 3/4" Stay 2 3/4" Thickness { 9 W. & 1/4" 1/4" 8 1/8" No. of threads per inch 9

Pitch of tubes 3 15/16" x 3 15/16" Working pressure by Rules 156 lbs. Manhole compensation: Size of opening in shell plate 21" x 14" Section of compensating ring 20" x 29 1/32" No. of rivets and diameter of rivet holes 36 @ 1" Outer row rivet pitch at ends 6 3/4" Depth of flange if manhole flanged 3 1/2" Steam Dome: Material Steel

Tensile strength Thickness of shell Description of longitudinal joint Diameter of rivet holes Pitch of rivets Percentage of strength of joint { Plate Rivets Internal diameter Working pressure by Rules Thickness of crown No. and diameter of 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 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 22 inclusive for boilers been complied with yes.

The foregoing is a correct description, For R. & W. HAWTHORN, LESLIE & CO. LIMITED Manufacturer.

Dates of Survey { During progress of work in shops - - - See Mr. Behat Are the approved plans of boiler and superheater forwarded (If not state date of approval.) Yes. while building { During erection on board vessel - - - Total No. of visits

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

The boiler has been built under special survey in accordance with the approved plans & the Rules of the Society & has been securely fitted on board the vessel & its safety valves pumped under steam to working pressure. The workmanship & materials are of good quality throughout

Note

This boiler is an exact duplicate of the one fitted in the M/S. "Harpa."

Survey Fee	...	£ 6 10 0	When applied for.	192
Travelling Expenses (if any)	£	Repat.	When received,	192

Engd. A. Ferguson. Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRI. 24 APR 1934 Assigned See F.E. Rep.