

## REPORT ON BOILERS.

No. 97822

Received at London Office - 8 SEP 1939

Date of writing Report

19

When handed in at Local Office

4/9/1939 Port of

NEWCASTLE-ON-TYNE

No. in Survey held at Newcastle on Tyne

Date, First Survey 30/12/38

Last Survey 30/8/1939

No. in Reg. Book. 5751. on the M.V. "HAV"

(Number of Visits — ) Tons { Gross Net

Master Built at Newcastle By whom built Swan, Hunter &amp; Wigham Richardson Ltd Yard No 1567 When built 1939-

Engines made at Newcastle By whom made S. H + W R Engine No. 1606 When made 1939

Boilers made at do. By whom made S H + W R Boiler No. 1606 When made 1939

Nominal Horse Power Owners Port belonging to OSLO.

MULTITUBULAR BOILERS ~~MAIN, AUXILIARY, OR~~ DONKEY.

Manufacturers of Steel

The Steel Coy. of Scotland

(Letter for Record 5. ✓)

Total Heating Surface of Boilers

2010 sq. ft.

Is forced draught fitted

Yes ✓

Coal or Oil fired Oil fired ✓

No. and Description of Boilers

Two Single Ended.

Working Pressure 120 lb. ✓

Tested by hydraulic pressure to

230 lb.

Date of test 8/5/39

No. of Certificate 818

Can each boiler be worked separately Yes ✓

Area of Firegrate in each Boiler

Oil fired

No. and Description of safety valves to each boiler

Two Improved High Lift.

Area of each set of valves per boiler

per Rule 6.5 [ ]  
as fitted 7.94 [ ]

Pressure to which they are adjusted

120 lb.

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 ✓

Is oil fuel carried in the double bottom under boilers

No ✓

Smallest distance between shell of boiler and tank top plating

2'-6" ✓

Is the bottom of the boiler insulated

Yes ✓

Largest internal dia. of boilers

9'-7 1/16" ✓

Length

11'-0" ✓

Shell plates: Material

Steel ✓

Tensile strength

29-33 tons

Thickness

2 1/32" ✓

Are the shell plates welded or flanged

No. ✓

Description of riveting: circ. seams

end DR Lap.  
inter. none

Long. seams

T.R. overlap. ✓

Diameter of rivet holes in

circ. seams 3/4" ✓  
long. seams 1" ✓

Pitch of rivets

2.342 (Plate max. 3 7/8") ✓

Percentage of strength of circ. end seams

plate 67.97 ✓  
rivets 45.51 ✓

Percentage of strength of circ. intermediate seam

plate ✓  
rivets ✓

Percentage of strength of longitudinal joint

plate 73.33 ✓  
rivets 75.93 ✓  
combined

Working pressure of shell by Rules

123 lb. ✓

Thickness of butt straps

outer ✓  
inner ✓

No. and Description of Furnaces in each Boiler

Two Deighton Corrugated

Material

Steel ✓

Tensile strength

26-30 tons

Smallest outside diameter

31.5" ✓

Length of plain part

top ✓  
bottom ✓

Thickness of plates

crown 3/8" ✓  
bottom

Description of longitudinal joint

Fare weld. ✓

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

none ✓

Working pressure of furnace by Rules

167 lb. ✓

End plates in steam space: Material

Steel ✓

Tensile strength

26-30 tons

Thickness

7/8" ✓

Pitch of stays

19 1/2" &amp; 14" ✓

How are stays secured

Nuts inside &amp; outside ✓

Working pressure by Rules

123 lb. ✓

Tube plates: Material

front Steel ✓  
back

Tensile strength

26-30 tons

Thickness

7/8" ✓  
5/8"

Lean pitch of stay tubes in nests

9 3/8" ✓

Pitch across wide water spaces

13 1/2" ✓

Working pressure

front 122 lb. ✓  
back 156 lb. ✓

Girders to combustion chamber tops: Material

Steel ✓

Tensile strength

28-32 tons

Depth and thickness of girder

At centre

7 1/2" x 15" ✓

Length as per Rule

30 13/16" ✓

Distance apart

9 1/2" ✓

No. and pitch of stays

At each

2 @ 9 1/2" ✓

Working pressure by Rules

120 lb. ✓

Combustion chamber plates: Material

Steel ✓

Tensile strength

26-30 tons

Thickness: Sides

9/16" ✓

Back

9/16" ✓

Top

9/16" ✓

Bottom

9/16" ✓

Pitch of stays to ditto: Sides

9 1/2" x 9 1/2" ✓

Back

9 x 9 3/4" ✓

Top

9 1/2" x 9 1/2" ✓

Are stays fitted with nuts or riveted over

Nuts. ✓

Working pressure by Rules

120 lb. ✓

Front plate at bottom: Material

Steel ✓

Tensile strength

26-30 tons

Thickness

7/8" ✓

Lower back plate: Material

Steel ✓

Tensile strength

26-30 tons

Thickness

7/8" ✓

Pitch of stays at wide water space

13 1/2" x 9 3/4" (max. at top row) ✓  
16 1/2" x 8 1/4"

Are stays fitted with nuts or riveted over

Nuts. ✓

Working Pressure

139 lb. ✓

Main stays: Material

Steel ✓

Tensile strength

28-32 tons.

At body of stay,

2 1/2" at centre ✓  
2 1/4" at wings

No. of threads per inch

6. ✓

Area supported by each stay

(17 x 19 1/4") - A 9 2 1/2" dia  
= 318 sq. ins.

Working pressure by Rules

139 lb. ✓

Screw stays: Material

Steel ✓

Tensile strength

26-30 tons

At turned off part,

1 1/2" ✓

No. of threads per inch

9. ✓

Area supported by each stay

(9 1/2" x 9 1/2") - 1.45.  
= 88.7 sq. ins.

P.T.O.

W174-0064



Working pressure by Rules 141 lbs Are the stays drilled at the outer ends No Margin stays: Diameter { At turned off part or Over threads 1 1/2 + 1 5/8"  
No. of threads per inch 9 Area supported by each stay 10 3/4 x 9 = 1.45 Working pressure by Rules 131 + 133 lbs  
Tubes: Material IRON External diameter { Plain 2 1/2" Thickness { 1/4 + 5/16" No. of threads per inch 9  
Pitch of tubes 3 3/4 x 3 3/4" Working pressure by Rules 149 lbs Manhole compensation: Size of opening  
shell plate 20 x 16" Section of compensating ring 8 1/4 x 2 1/2 x 2 No. of rivets and diameter of rivet holes 30 of 1 1/2" dia  
Outer row rivet pitch at ends 5 5/8" Depth of flange if manhole flanged 2 1/2" Steam Dome: Material \_\_\_\_\_  
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 \_\_\_\_\_  
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 forgings \_\_\_\_\_ 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 \_\_\_\_\_  
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 \_\_\_\_\_  
Rules \_\_\_\_\_ Pressure to which the safety valves are adjusted \_\_\_\_\_ Hydraulic test pressure \_\_\_\_\_  
tubes \_\_\_\_\_ forgings and castings \_\_\_\_\_ and after assembly in place \_\_\_\_\_ Are drain cocks \_\_\_\_\_  
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,  
SWAN, HUNTER, & WIGMAN, RICHARDSON, LTD.

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

See Machinery Report

Are the approved plans of boiler and superheater forwarded herewith No. 16/11/39  
(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.).

These two Donkey Boilers have been built under special survey in accordance with the Rules and approved plans, and the materials and workmanship are good.

The Boilers have been fitted one port & one start in the Engine and fitted for burning oil fuel, flash point above 150°F, under forced draught.

These Boilers are also interconnected with a La Mont Waste Exhaust Gas Heater - see London Cert D 2070.

The Safety Valves have been adjusted under steam to 120 lbs per sq. inch.

Survey Fee ... £ See Machinery Report  
Travelling Expenses (if any) £ \_\_\_\_\_

When applied for, 19 \_\_\_\_\_  
When received, 19 \_\_\_\_\_

A. Watt

Engineer Surveyor to Lloyd's Register of Shipping

Committee's Minute \_\_\_\_\_

TUE 17 OCT 1939

Assigned \_\_\_\_\_

See NWC 76 97822



© 2019

Lloyd's Register Foundation