

# REPORT ON BOILERS.

No. 87829

Received at London Office 7 DEC 1931

Date of writing Report

19

When handed in at Local Office

4/12/1931

Port of

NEWCASTLE-ON-TYNE

No. in Reg. Book

Survey held at **Walker.**

Date, First Survey

24 July

Last Survey

1<sup>st</sup> Dec.

1931

on the

Main Boilers for the S. S. "FLATHOUSE"

(Number of Visits)

Gross Tons  
Net

Master Built at **Southwick** By whom built **Swan Hunter, Wigham & Co. No. 1473** When built **1931**

Engines made at **Walker** By whom made **Swan Hunter, Wigham & Co. Engine No. 1416** When made **1931**

Boilers made at **Walker** By whom made **Swan Hunter, Wigham & Co. Boiler No. 1416** When made **1931**

Nominal Horse Power **149** Owners **Stephen Clarke & Co. Ltd.** Port belonging to **Larder.**

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

Manufacturers of Steel **Steel Co of Scotland.** (Letter for Record **S**)

Total Heating Surface of Boilers **2888 sq ft** Is forced draught fitted **Y** Coal or Oil fired **Coal**

No. and Description of Boilers **Two single ended main.** Working Pressure **180 lbs**

Tested by hydraulic pressure to **320 lbs** Date of test **20.10.31** No. of Certificate **561** Can each boiler be worked separately **Yes**

Area of Firegrate in each Boiler **50.5 sq ft** No. and Description of safety valves to each boiler **2 spring loaded I.H.L. type.**

Area of each set of valves per boiler { per Rule **4.64 sq ft** as fitted **4.8 sq ft** Pressure to which they are adjusted **180 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 **5'-0"** Is oil fuel carried in the double bottom under boilers **Y**

Smallest distance between shell of boiler and tank top plating **2'-9"** Is the bottom of the boiler insulated **Yes**

Largest internal dia. of boilers **12'-10"** Length **10'-6"** Shell plates: Material **S** Tensile strength **30/34 T.**

Thickness **1"** Are the shell plates welded or flanged **Y** Description of riveting: circ. seams { end **D. R. Lap** as fitted **3.58"** intermediate **4.345"**

long. seams **T. R. D. B. S.** Diameter of rivet holes in { circ. seams **1 1/8"** long. seams **1 1/16"** Pitch of rivets { plate **-** rivets **-**

Percentage of strength of circ. end seams { plate **68.54** rivets **42.54** Percentage of strength of circ. intermediate seam { plate **-** rivets **-**

Percentage of strength of longitudinal joint { plate **85.59** rivets **86.4** Working pressure of shell by Rules **181 lbs** combined **88.46**

Thickness of butt straps { outer **25/32"** inner **29/32"** No. and Description of Furnaces in each Boiler **3 Deighton section.**

Material **S** Tensile strength **26/30 T.** Smallest outside diameter **36 3/4"**

Length of plain part { top **-** bottom **-** Thickness of plates { crown **15/32"** bottom **-** Description of longitudinal joint **Weld**

Dimensions of stiffening rings on furnace or c.c. bottom Working pressure of furnace by Rules **182 lbs**

End plates in steam space: Material **S** Tensile strength **26/30 T** Thickness **1 3/32"** Pitch of stays **14 1/2 x 16 3/4**

How are stays secured **D. nuts** Working pressure by Rules **188 lbs**

Tube plates: Material { front **S** back **S** Tensile strength { **26/30 T.** Thickness { **13/16"** **1 1/32"**

Mean pitch of stay tubes in nests **11 1/16"** Pitch across wide water spaces **14 1/4"** Working pressure { front **189 lbs** back **196 lbs**

Girders to combustion chamber tops: Material **S** Tensile strength **28/32 T.** Depth and thickness of girder at centre **9" x 1 1/4"** Length as per Rule **30 9/16"** Distance apart **9 1/2"** No. and pitch of stays in each **2 @ 9 3/8"** Working pressure by Rules **183 lbs** Combustion chamber plates: Material **S**

Tensile strength **26/30 T** Thickness: Sides **1 1/16"** Back **2 1/32" x 5/8"** Top **1 1/16"** Bottom **1 1/16"**

Pitch of stays to ditto: Sides **9 3/8" x 9 1/2"** Back **9 1/4" x 9"** Top **9 1/2" x 9 3/8"** Are stays fitted with nuts or riveted over **Nuts.**

Working pressure by Rules **180 lbs** Front plate at bottom: Material **S** Tensile strength **26/30 T.**

Thickness **1 1/32"** Lower back plate: Material **S** Tensile strength **26/30 T** Thickness **1/8"**

Pitch of stays at wide water space **14 1/4" x 9"** Are stays fitted with nuts or riveted over **Nuts.**

Working Pressure **220 lbs** Main stays: Material **S** Tensile strength **28/32 T.**

Diameter { At body of stay, **2 3/4"** or Over threads **-** No. of threads per inch **6** Area supported by each stay **301 sq in**

Working pressure by Rules **183 lbs** Screw stays: Material **S** Tensile strength **26/30 T.**

Diameter { At turned off part, **1 5/8" x 1 3/4"** or Over threads **-** No. of threads per inch **9** Area supported by each stay **81.6 sq in**

Working pressure by Rules 186 lbs Are the stays drilled at the outer ends  Margin stays: Diameter  $\left\{ \begin{array}{l} \text{At turned off part, } 1\frac{1}{8}'' \\ \text{or} \\ \text{Over threads} \end{array} \right.$

No. of threads per inch 9 Area supported by each stay 103.4 sq. in Working pressure by Rules 205 lbs

Tubes: Material *Iron* External diameter  $\left\{ \begin{array}{l} \text{Plain } 3\frac{1}{4}'' \\ \text{Stay } \end{array} \right.$  Thickness  $\left\{ \begin{array}{l} 8 \text{ W.G. } \\ 5/16'' \end{array} \right.$  No. of threads per inch 9

Pitch of tubes  $4\frac{1}{2}'' \times 4\frac{3}{8}''$  Working pressure by Rules 201 lbs Manhole compensation: Size of opening in shell plate  $20 \times 16''$  Section of compensating ring  $10\frac{5}{8}'' \times 1''$  No. of rivets and diameter of rivet holes  $32 \times 1\frac{3}{8}''$

Outer row rivet pitch at ends  $9\frac{3}{8}''$  Depth of flange if manhole flanged - Steam Dome: Material *Iron*

Tensile strength Thickness of shell Description of longitudinal joint

Diameter of rivet holes Pitch of rivets Percentage of strength of joint  $\left\{ \begin{array}{l} \text{Plate} \\ \text{Rivets} \end{array} \right.$

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  $\left\{ \begin{array}{l} \text{Tubes} \\ \text{Steel castings} \end{array} \right.$

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

FOR THE FOREGOING IS A CORRECT DESCRIPTION,  
*E. J. Sweeney* Manufacturer.

Dates of Survey  $\left\{ \begin{array}{l} \text{During progress of work in shops - -} \\ \text{while building } \left\{ \begin{array}{l} \text{During erection on board vessel - - -} \end{array} \right. \end{array} \right.$  *See main 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  If so, state Vessel's name and Report No. -

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) *The Boilers have been built under special survey in accordance with the Rules of the Society & the approved plans & have been securely fitted on board the vessel & their safety valves adjusted under steam to working pressure. The materials & workmanship are of good quality.*

Survey Fee ... £ *in March* When applied for, 10  
 Travelling Expenses (if any) £ *Rpl.* When received, 10

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

Committee's Minute FRI. 11 DEC 1931

Assigned *See F.B. Rpt.*

