

# REPORT ON BOILERS.

No. 86364

25 OCT 1930

Received at London Office

Date of writing Report

19

When handed in at Local Office

23/10/1930

Port of Newcastle - a - Tyne.

No. in Survey held at

Walker

Date, First Survey

24 Oct 129

Last Survey

1930

on the

Donkey boiler for the M. V. "MORGENEN."

Number of Visits

Gross 7093

Tons Net 4288

Master

Built at Walker

By whom built Swan Hunter & Wigham & Sons

Yard No. 1384

When built 1930

Engines made at

Walker

By whom made

Swan Hunter & Wigham & Sons

Engine No.

When made

Boilers made at

- do -

By whom made

- do -

Boiler No.

When made

Nominal Horse Power

425

Owners

A. K. Sankhianapara

Port belonging to

Larsburg

## MULTITUBULAR BOILERS MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel

Davis Colville & Sons

(Letter for Record

S

Total Heating Surface of Boilers

1543 sq ft

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

245

Date of test

28.5.30

No. of Certificate

464

Can each boiler be worked separately

Yes

Area of Firegrate in each Boiler

6.8

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

4.15

as fitted

4.94

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

15"

Is oil-fuel carried in the tank under boilers

Yes

Smallest distance between shell of boiler and top plating

15"

Is the bottom of the boiler insulated

Yes

Largest internal dia. of boilers

12.4

Length

11.0

Shell plates: Material

Steel

Tensile strength

30/34 Tons

Thickness

13/16"

Are the shell plates welded or flanged

Yes

Description of riveting: circ. seams

end

inter.

3.44"

Long. seams

T. R. D. B. S.

Diameter of rivet holes in

circ. seams

1"

long. seams

1 1/8"

Pitch of rivets

6.125"

Percentage of strength of circ. end seams

plate

41.18%

rivets

42.41%

Percentage of strength of circ. intermediate seam

plate

85.41%

rivets

-

Percentage of strength of longitudinal joint

plate

85.41%

rivets

86.65%

combined

88.45%

Working pressure of shell by Rules

151 lbs

Thickness of butt straps

outer

5/8"

inner

3/4"

No. and Description of Furnaces in each Boiler

2 Deighlan

Material

Steel

Tensile strength

26/30 Tons

Smallest outside diameter

42 1/8"

Length of plain part

top

bottom

Thickness of plates

crown

bottom

15/32"

Description of longitudinal joint

Welded

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

None

Working pressure of furnace by Rules

156 lbs

End plates in steam space: Material

Steel

Tensile strength

26/30 Tons

Thickness

15/16"

Pitch of stays

14 1/2" x 15"

How are stays secured

D. nuts

Working pressure by Rules

151 lbs

Tube plates: Material

front

back

Steel

Tensile strength

26/30 Tons

Thickness

11/16"

Mean pitch of stay tubes in nests

10 1/2"

Pitch across wide water spaces

14"

Working pressure

front

back

153 lbs

Girders to combustion chamber tops: Material

Steel

Tensile strength

28/32 Tons

Depth and thickness of girder

at centre

4 3/4" x 1 1/4"

Length as per Rule

30 5/8"

Distance apart

9"

No. and pitch of stays

in each

2 @ 9 3/8"

Working pressure by Rules

152 lbs

Combustion chamber plates: Material

Steel

Tensile strength

26/30 Tons

Thickness: Sides

5/8"

Back

1 1/16"

Top

5/8"

Bottom

5/8"

Pitch of stays to ditto: Sides

9 3/8" x 9"

Back

9 3/8" x 9"

Top

9 3/8" x 9"

Are stays fitted with nuts or riveted over

Yes

Working pressure by Rules

160 lbs

Front plate at bottom: Material

Steel

Tensile strength

26/30 Tons

Thickness

29/32"

Lower back plate: Material

Steel

Tensile strength

26/30 Tons

Thickness

24/32"

Pitch of stays at wide water space

16" x 4 1/2"

14" x 9"

Are stays fitted with nuts or riveted over

Yes

Working Pressure

186 lbs

Main stays: Material

Steel

Tensile strength

28/32 Tons

Diameter

At body of stay,

or

Over threads

2 1/2"

No. of threads per inch

6

Area supported by each stay

268 sq in

Working pressure by Rules

165 lbs

Screw stays: Material

Steel

Tensile strength

26/30 Tons

Diameter

At turned off part,

or

Over threads

1 1/2"

No. of threads per inch

9

Area supported by each stay

88 sq in



Working pressure by Rules  $151 \text{ lbs}$  Are the stays drilled at the outer ends  $90$  Margin stays: Diameter  $\left\{ \begin{array}{l} \text{At turned off part,} \\ \text{Over threads} \end{array} \right. 1 \frac{5}{8}"$   
 No. of threads per inch  $9$  Area supported by each stay  $95 \text{ sq. in.}$  Working pressure by Rules  $160 \text{ lbs}$   
 Tubes: Material  $9 \text{ mm}$  External diameter  $\left\{ \begin{array}{l} \text{Plain} \\ \text{Stay} \end{array} \right. 3"$  Thickness  $9 \text{ w. a.}$  No. of threads per inch  $9$   
 Pitch of tubes  $4 \frac{1}{4}" \times 4 \frac{1}{8}"$  Working pressure by Rules  $184 \text{ lbs}$  Manhole compensation: Size of opening in  
 shell plate  $30 \times 16"$  Section of compensating ring  $9 \frac{1}{2} \times 4 \frac{1}{8}"$  No. of rivets and diameter of rivet holes  $32 @ 1 \frac{1}{4}"$   
 Outer row rivet pitch at ends  $8 \frac{3}{8}"$  Depth of flange if whole flanged — Steam Dome: Material  
 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

The foregoing is a correct description,

SWAN, HUNTER & WILKINSON, LTD. Manufacturer.

Dates of Survey  $\left\{ \begin{array}{l} \text{During progress of} \\ \text{work in shops} \end{array} \right. - -$   
 while building  $\left\{ \begin{array}{l} \text{During erection on} \\ \text{board vessel} \end{array} \right. - - -$

See Mr. P. Rehat

Are the approved plans of boiler and superheater forwarded herewith? Yes

Total No. of visits

Is this Boiler a duplicate of a previous case  $90$  If so, state Vessel's name and Report No.

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 adjusted under steam to working pressure. The Materials & workmanship are of good quality throughout.

Survey Fee £  $10$  When applied for, 19  
 Travelling Expenses (if any) £  $10$  When received, 19

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

Committee's Minute FRI. 31 OCT 1930

Assigned See F. E. Rpt.