

# REPORT ON BOILERS.

No. 96297

MAY 26 1938

Received at London Office

Date of writing Report

10

When handed in at Local Office

24/5/1938

Port of

NEWCASTLE-ON-TYNE

No. in Survey held at

Newcastle on Tyne

Date, First Survey

9<sup>th</sup> March 1937

Last Survey

23/5/1938

Reg. Book.

on the

Steel Furn Ships.

UMGENI

(Number of Visits)

Gross 8180

Net 5082

Master

Built at

Newcastle

By whom built

Swan, Hunter

Yard No.

1556

When built

1938-5

Engines made at

Newcastle

By whom made

Swigham Richardson & Co

Engine No.

1556

When made

1938

Boilers made at

do

By whom made

ditto

Boiler No.

1556

When made

1938

Nominal Horse Power

✓

Owners

Port belonging to

LONDON

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

Manufacturers of Steel

Steel Company of Scotland

(Letter for Record 5)

Total Heating Surface of Boilers

14184 sq ft

Is forced draught fitted

Yes

Coal or Oil fired

Coal

No. and Description of Boilers

Four Single ended

Working Pressure 225 lb

Tested by hydraulic pressure to

388

Date of test

1-2-38  
11-2-38  
18-2-38

No. of Certificate

758.  
760.  
761.

Can each boiler be worked separately

Yes

Area of Firegrate in each Boiler

86.8 sq ft

No. and Description of safety valves to each boiler

Two - 2 3/4 dia Cockburne Improved High Lift

Area of each set of valves per boiler

per Rule 9.2  
as fitted 11.88

Pressure to which they are adjusted

225 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

12"

Is oil fuel carried in the double bottom under boilers

No

Smallest distance between shell of boiler and tank top plating

30"

Is the bottom of the boiler insulated

Yes

Largest internal dia. of boilers

17'-2 7/8"

Length

12'-6"

Shell plates: Material

Steel

Tensile strength 32 to 36 tons

Thickness

1 9/16"

Are the shell plates welded or flanged

No

Description of riveting: circ. seams

limit of proportionality 1315 tons  
D.R. LAP.

Long. seams

TR. Dble butt straps

Diameter of rivet holes in

circ. seams 1 7/8"  
long. seams 1 7/16"

Pitch of rivets

4.485"  
9 3/4"

Percentage of strength of circ. end seams

plate 63.76  
rivets 42.54

Percentage of strength of circ. intermediate seam

plate  
rivets

Percentage of strength of longitudinal joint

plate 83.97  
rivets 84.81  
combined 84.9

Working pressure of shell by Rules

226.7 lb

Thickness of butt straps

outer 1 7/32"  
inner 1 1/32"

No. and Description of Furnaces in each Boiler

Four Dighton Type

Material

Steel

Tensile strength

26 to 30 tons

Smallest outside diameter

45 3/4"

Length of plain part

top 3"  
bottom 2'-7" (c.c. bottom)

Thickness of plates

crowns 27/32"  
bottom 27/32" c.c. bottom

Description of longitudinal joint

Free weld

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

none

Working pressure of furnace by Rules

230 lb

End plates in steam space: Material

Steel

Tensile strength

26 to 30 tons

Thickness

1 7/16"

Pitch of stays 20" x 15 3/8"

How are stays secured

Screwed thro plates & nuts outside

Working pressure by Rules

227 lb

Tube plates: Material

front Steel  
back

Tensile strength

26 to 30 tons

Thickness

15/16"  
27/32"

Mean pitch of stay tubes in nests

Center 9.53"  
wings 10 5/16"

Pitch across wide water spaces

14" x 8 1/4"

Working pressure

front 229 lb  
back 240 lb

Girders to combustion chamber tops: Material

Steel

Tensile strength

28 to 32 tons

Depth and thickness of girder

at centre

10 7/8" x 12"

Length as per Rule

36 15/32"

Distance apart

9 5/8"

No. and pitch of stays

in each

3 @ 8 1/2"

Working pressure by Rules

226 lb

Combustion chamber plates: Material

Steel

Tensile strength

26 to 30 tons

Thickness: Sides

27/32"

Back

27/32"

Top

27/32"

Bottom

27/32"

Pitch of stays to ditto:

Sides 8 1/2" x 9 5/8"

Back 8 5/8" x 9 5/8"

Top 8 1/2" x 9 5/8"

Are stays fitted with nuts or riveted over

with nuts

Working pressure by Rules

228 lb

(min at back c.c.)

Front plate at bottom: Material

Steel

Tensile strength

26 to 30 tons

Thickness

15/16"

Lower back plate: Material

Steel

Tensile strength

26 to 30 tons

Thickness

1"

Pitch of stays at wide water space

15 1/8" x 9 5/8"

Are stays fitted with nuts or riveted over

with nuts

Working Pressure

256 lb

Main stays: Material

Steel

Tensile strength

28 to 32 tons

Diameter

At body of stay, or over threads

3 5/8" dia

No. of threads per inch

9

Area supported by each stay (20" x 15 3/8") - 6.6 sq in

Working pressure by Rules

242 lb

Screw stays: Material

Steel

Tensile strength

26 to 30 tons

Diameter

At turned off part, or over threads

1 6"

No. of threads per inch

9

Area supported by each stay (9 5/8" x 8 1/2") - 2 sq in max at sides

Working pressure by Rules 227 lb Are the stays drilled at the outer ends No Margin stays: Diameter { At turned off part, 1.85" or 1.60" Over threads 2" & 1 3/4"

No. of threads per inch 9 Area supported by each stay (1 1/2 x 9 7/8) - 2.7 sq ins Working pressure by Rules for 2 dia 228 lb

Tubes: Material IRON External diameter { Plain 3" Stay 3" Thickness { 7/16" & 5/16" No. of threads per inch 9

Pitch of tubes 8 1/4" x 8 1/4" Working pressure by Rules 226 lb Manhole compensation: Size of opening

shell plate None Section of compensating ring  No. of rivets and diameter of rivet holes

Outer row rivet pitch at ends  Depth of flange if manhole flanged  Steam Dome: None

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 "North Eastern" Smoke tube Manufacturers of { Tubes Stewart + Lloyd Steel forgings Frodingham Steel Co Steel castings

Number of elements 320 Material of tubes Solid drawn steel Internal diameter and thickness of tubes 1 5/8" & 2 5/8"

Material of headers Fryer Steel Tensile strength 26 to 30 tons Thickness 1 1/2" Can the superheater be shut off

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 3.97 sq ins Are the safety valves fitted with easing gear Yes Working pressure as

Rules 225 lb Pressure to which the safety valves are adjusted 225 lb Hydraulic test pressure

tubes 1500 lb Header forgings and castings 675 lb and after assembly in place 450 lb Are drain cocks

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

FOR The foregoing is a correct description,  
SWAN, HUNTER, & WIGHAM RICHARDSON, LTD. Manufacturer

Dates of Survey { During progress of work in shops - - } Are the approved plans of boiler and superheater forwarded herewith 27/12  
{ During erection on board vessel - - - } (If not state date of approval.)  
Total No. of visits

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

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.)  
The Boilers have been built under special survey in accordance with the Rules and approved plans and the have been satisfactorily fitted on board. The materials & workmanship are good.

Survey Fee ... .. £  : : } When applied for, 10  
Travelling Expenses (if any) £ : : } When received, 10

Awatt  
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRI. 3 JUN 1938  
Assigned See Nwc 7E 96297

