

REPORT ON BOILERS.

No. 29790

Received at London Office 12 JUL 1928

Date of writing Report

192

When handed in at Local Office

11 JULY 1928

Port of Sunderland

No. in
eg. Book.

Survey held at Sunderland

Date, First Survey

Last Survey

7 July 1928

(Number of Visits

Tons

Gross 5377

Net 3245

on the Single Screw Steamer "AMBERTON"

Master Built at Sunderland By whom built Short Bros Ltd Yard No. 431 When built 1928

Engines made at Sunderland By whom made Dickinson & Sons Ltd Engine No. 889 When made 1928

Boilers made at -do- By whom made -do- Boiler No. 889 When made 1928

Nominal Horse Power 380 Owners Kelchman & Son Port belonging to Newcastle

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

Manufacturers of Steel The Steel Company of Scotland, Ltd. (Letter for Record (S))

Total Heating Surface of Boilers 5460 Is forced draught fitted No Coal or Oil fired Coal

No. and Description of Boilers Two Single Ended Marine Type barugated Furnaces Working Pressure 220 lbs

Tested by hydraulic pressure to 380 Date of test 9-6-28 No. of Certificate 3995 Can each boiler be worked separately Yes

Area of Firegrate in each Boiler 44.5 No. and Description of safety valves to each boiler Two Direct Spring loaded

Area of each set of valves per boiler 15 Pressure to which they are adjusted 225 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 4'-9" Is oil fuel carried in the double bottom under boilers No

Smallest distance between shell of boiler and tank top plating 2'-3" Is the bottom of the boiler insulated Yes

Largest internal dia. of boilers 16'-8 7/8" Length 11'-6" (full) Shell plates: Material Steel Tensile strength 29 3/4 - 33 1/4 tons

Thickness 1 9/16" Are the shell plates welded or flanged No Description of riveting: circ. seams end D.R. lap

Long. seams T.R.D.B.S. Diameter of rivet holes in circ. seams 1 5/8" Pitch of rivets 11"

Percentage of strength of circ. end seams plate 59.38 rivets 31.3 Percentage of strength of circ. intermediate seam plate 85.23 rivets 84.46

Percentage of strength of longitudinal joint plate 85.23 rivets 84.46 combined 84.94 Working pressure of shell by Rules 220.4 lbs

Thickness of butt straps outer 1 3/16" inner 1 5/16" No. and Description of Furnaces in each Boiler Four barugated Deighton Type

Material Steel Tensile strength 26-30 tons Smallest outside diameter 3'-6 1/16"

Length of plain part top 2 1/2" bottom 2 1/2" Thickness of plates crown 2 1/2" bottom 3/32" Description of longitudinal joint welded

Dimensions of stiffening rings on furnace or c.c. bottom Working pressure of furnace by Rules 228 lbs

End plates in steam space: Material Steel Tensile strength 26-30 tons Thickness 1 1/4" Pitch of stays 21" x 1 1/2"

How are stays secured d.n.d.w. Working pressure by Rules 224 lbs

Tube plates: Material front Steel back Steel Tensile strength 26-30 tons Thickness 3/32" 1/8"

Mean pitch of stay tubes in nests 10" Pitch across wide water spaces 13 1/4" Working pressure front 224 lbs (W.W. Space) back 229 lbs

Girders to combustion chamber tops: Material Steel Tensile strength 28-32 tons Depth and thickness of girder

Centres 8 x 2 1/2" Length as per Rule 33 13/32" Distance apart wings 8 1/2" No. and pitch of stays

at centre wings 4 x 2 1/2" Centres 225 lbs Wings 229 lbs Working pressure by Rules

Centres 3 @ 8" in each wings 2 @ 11" Combustion chamber plates: Material Steel

Tensile strength 26-30 tons Thickness: Sides 25/32" Back 3/4" Top 25/32" Bottom 25/32"

Pitch of stays to ditto: Sides 8 1/2" x 11" Back wings 10 3/4" x 4 5/8" Top wings 8 1/2" x 11" Are stays fitted with nuts or riveted over Fitted with nuts

Working pressure by Rules 223 lbs Front plate at bottom: Material Steel Tensile strength 26-30 tons

Thickness 3/32" Lower back plate: Material Steel Tensile strength 26-30 tons Thickness 1/8"

Pitch of stays at wide water space 13" x 10 3/4" Are stays fitted with nuts or riveted over Fitted with nuts

Working Pressure 220.2 lbs Main stays: Material Steel Tensile strength 28-32 tons

Diameter At body of stay, 3 3/8" No. of threads per inch 6 Area supported by each stay 36.45

Working pressure by Rules 238 lbs Screw stays: Material Steel Tensile strength 26-30 tons

Diameter At turned off part, 1 3/4" x 1 1/8" No. of threads per inch 9 Area supported by each stay

At body of stay, 1 3/4" x 1 1/8" No. of threads per inch 9 Area supported by each stay

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Working pressure by Rules ^{Backs 221 lbs} ^{Sides 223 lbs} ^{Tops 223 lbs} Are the stays drilled at the outer ends *no* Margin stays: Diameter { At turned off part, *2"* or Over threads }
 No. of threads per inch *9* Area supported by each stay *111 sq"* Working pressure by Rules *222 lbs*
 Tubes: Material *Wrought Iron* External diameter { Plain *3 1/4"* Stay *3 1/4"* Thickness { *5/16"* *3/8"* No. of threads per inch *9*
 Pitch of tubes *4 1/2" x 4 1/2"* Working pressure by Rules *280 lbs* *231 & 223 lbs* Manhole compensation: Size of opening
 shell plate *16" x 12"* Section of compensating ring *19 1/16" x 9 1/4"* No. of rivets and diameter of rivet holes *26 @ 15/8"*
 Outer row rivet pitch at ends *11" (max)* Depth of flange if manhole flanged
 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
 of rivets in outer row in dome connection to shell

Type of Superheater *Smoke tube type made by The Superheater Co. Ltd.* Manufacturers of Tubes *The Superheater Co. Ltd.*
 Number of elements *116* Material of tubes *Solid Drawn Steel* Internal diameter and thickness of tubes *1 1/4" m & 3 m*
 Material of headers *Wrought Steel* Tensile strength *26-30 tons* Thickness *1" (minimum)* 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 *1.464 sq"* Are the safety valves fitted with easing gear *yes* Working pressure as
 Rules *220 lbs* Pressure to which the safety valves are adjusted *228 lbs* Hydraulic test pressure
 tubes *1,000 lbs (at maker's)* castings *660 lbs (at maker's)* and after assembly in place *440 lbs* Are drain cocks or valves fitted
 to free the superheater from water where necessary *yes*
 Have all the requirements of Sections 14 to 23 inclusive for boilers been complied with *yes*

For The foregoing is a correct description, *Director,*
 Dates of Survey { During progress of work in shops - - - *Please see Machinery Report.* Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.)
 while building { During erection on board vessel - - -
 Total No. of visits

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.)
The materials and workmanship are good.
The Boilers have been constructed under Special Survey, and satisfactory fitted in the vessel.
For notation see Machinery Report.

Survey Fee ... £ *Please see Machinery Report.* When applied for, 192
 Travelling Expenses (if any) £ *Machinery Report.* When received, 192

A. H. Griffith.
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute
 Assigned *See Ref. 1st attached*