

# REPORT ON BOILERS.

No. 29727

Received at London Office

9 MAY 1928

Date of writing Report

192

When handed in at Local Office

7 MAY 1928

Port of *Sunderland*

No. in Survey held at

*Sunderland.*

Date, First Survey

Last Survey *1st May 1928*

(Number of Visits

Gross *1557*

Tons

Net *824*

on the

*S.S. "CEDARTREE"*

aster

Built at

*Sunderland*

By whom built

*J. Brown*

Yard No. *180*

When built *1928.*

engines made at

*Sunderland*

By whom made

*George Rank Ltd.*

Engine No. *1152.*

When made *1928.*

oilers made at

*do*

By whom made

*do*

Boiler No. *1152*

When made *1928.*

ominal Horse Power

*193*

Owners

*The Tree Steamship Co. Ltd.*

Port belonging to

*London*

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

Manufacturers of Steel

*David White & Sons Ltd.*

(Letter for Record *5* ✓)

Total Heating Surface of Boilers

*3268 sq. ft.*

Is forced draught fitted

*No* ✓

Coal or Oil fired *Coal* ✓

No. and Description of Boilers

*Two cyl. mult. single ended.*

Working Pressure *180 lbs. sq. in.*

Tested by hydraulic pressure to

*320 lbs. sq. in.*

Date of test *14/10/27*

No. of Certificate *3961*

Can each boiler be worked separately

*Yes* ✓

Area of Firegrate in each Boiler

*46.5 sq. ft.*

No. and Description of safety valves to each boiler

*Two spring loaded.*

Area of each set of valves per boiler

*per Rule 5.32 x 2  
as fitted 25 1/2" dia (5.47 x 5)*

Pressure to which they are adjusted

*185*

Are they fitted with easing gear

*Yes* ✓

In case of donkey boilers, state whether steam from main boilers can enter the donkey boiler

*No*

Smallest distance between boilers or uptakes and bunkers or woodwork

*8'-0"*

Is oil fuel carried in the double bottom under boilers

*No* ✓

Smallest distance between shell of boiler and tank top plating

*2'-0"*

Is the bottom of the boiler insulated

*No* ✓

Largest internal dia. of boilers

*13'-3 1/2"*

Length *10'-6"*

Shell plates: Material

*STEEL*

Tensile strength *28 to 32 tons*

Thickness

*1 1/4"*

Are the shell plates welded or flanged

*No* ✓

Description of riveting: circ. seams

*end J.R.L.*

Long. seams

*TRUBS.*

Diameter of rivet holes in

*circ. seams 1 1/8"*

*long. seams 1 1/8"*

Pitch of rivets

*3 5/8"*

Percentage of strength of circ. end seams

*plate 65%*

*rivets 44.1%*

Percentage of strength of circ. intermediate seam

*plate*

*rivets*

Percentage of strength of longitudinal joint

*plate 85.48%*

*rivets 89%*

*combined 84.7%*

Working pressure of shell by Rules *182 lbs. sq. in.*

Thickness of butt straps

*outer 3 1/2"*

*inner 3 1/2"*

No. and Description of Furnaces in each Boiler

*3 TIGHTONS.*

Material

*STEEL*

Tensile strength

*26 to 30 tons.*

Smallest outside diameter

*3'-2 1/4"*

Length of plain part

*top*

*bottom*

Thickness of plates

*crown 3 1/2"*

*bottom 3 1/2"*

Description of longitudinal joint

*WELDED.*

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

Working pressure of furnace by Rules *187 lbs. sq. in.*

End plates in steam space: Material

*STEEL*

Tensile strength

*26 to 30 tons.*

Thickness

*1 1/2"*

Pitch of stays *20 3/8" x 1 1/8"*

How are stays secured

*IN & W.*

Working pressure by Rules *186 lbs. sq. in.*

Tube plates: Material

*front*

*back*

*STEEL*

Tensile strength

*26 to 30 tons.*

Thickness

*1 1/2"*

Working pressure

*front 226 lbs. sq. in.*

*back 191 lbs. sq. in.*

Mean pitch of stay tubes in nests

*10 1/4"*

Pitch across wide water spaces

*14 1/4" x 8 3/4"*

Working pressure

*front 226 lbs. sq. in.*

*back 191 lbs. sq. in.*

Girders to combustion chamber tops: Material

*STEEL*

Tensile strength

*28 to 32 tons.*

Depth and thickness of girder

at centre

*7 1/2" x 1 3/4"*

Length as per Rule

*2'-6"*

Distance apart

*9" x 10"*

No. and pitch of stays

in each

*2 @ 9 x 10*

Working pressure by Rules

*184 lbs. sq. in.*

Combustion chamber plates: Material

*STEEL*

Tensile strength

*26 to 30 tons.*

Thickness: Sides

*3 1/2"*

Back

*1 1/2"*

Top

*1 1/2"*

Bottom

*2 3/4"*

Pitch of stays to ditto: Sides

*9 x 10*

Back

*9 x 10*

Top

*9 x 9 1/2*

Are stays fitted with nuts or riveted over

*NUTS*

Working pressure by Rules

*182 lbs. sq. in.*

Front plate at bottom: Material

*STEEL*

Tensile strength

*26 to 30 tons.*

Thickness

*1 1/2" & 1 3/4"*

Lower back plate: Material

*STEEL*

Tensile strength

*26 to 30 tons.*

Thickness

*1 1/2"*

Pitch of stays at wide water space

*16 x 9*

Are stays fitted with nuts or riveted over

*NUTS*

Working Pressure

*184 lbs. sq. in.*

Main stays: Material

*STEEL*

Tensile strength

*28 to 32 tons.*

Diameter

*At body of stay, 2 3/4" & 2 7/8"*

*Over threads 3 1/2" & 3 3/4"*

No. of threads per inch

*6*

Area supported by each stay

*342 sq. in.*

Working pressure by Rules

*190 lbs. sq. in.*

Screw stays: Material

*STEEL*

Tensile strength

*26 to 30 tons.*

Diameter

*At turned off part, 1 3/4"*

*Over threads 1 3/4"*

No. of threads per inch

*9*

Area supported by each stay

*90 sq. in.*

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Working pressure by Rules *208 lbs.* Are the stays drilled at the outer ends *No* ✓ Margin stays: Diameter { At turned off part, or Over threads *1 7/8"* ✓

No. of threads per inch *9* ✓ Area supported by each stay *1175"* Working pressure by Rules *182 lbs.* ✓

Tubes: Material *STEEL* External diameter { Plain *3 1/2"* ✓ Stay *3 1/4"* ✓ Thickness { *8 W.G.* ✓ No. of threads per inch *9* ✓

Pitch of tubes *4 1/2" x 4 3/8"* ✓ Working pressure by Rules *230 lbs.* ✓ Manhole compensation: Size of opening in shell plate *16" x 12"* ✓ Section of compensating ring *-* No. of rivets and diameter of rivet holes *-*

Outer row rivet pitch at ends *-* Depth of flange if manhole flanged *3 1/8"* ✓ 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 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 *Am* Manufacturers of { Tubes *-* 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 and the boiler be worked separately *-*

Area of each safety valve *-* Is a safety valve fitted to every part of the superheater which can be shut off from the boiler *-*

Rules *-* Are the safety valves fitted with easing gear *-* Working pressure as per Rules *-*

tubes *-* Pressure to which the safety valves are adjusted *-* Hydraulic test pressure: 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 23 inclusive for boilers been complied with *Yes* ✓

The foregoing is a correct description,  
**FOR GEORGE CLARK LIMITED.** *London* Manufacturer.

Dates of Survey { During progress of work in shops *-* *Please see Machinery Rpt* 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.) *These boilers have been built under Special Survey & the materials & workmanship are good. In completion they were satisfactorily fitted in the vessel & the safety valves adjusted under steam for notation see machinery report.*

Survey Fee ... £ : : When applied for, 192

Travelling Expenses (if any) £ : : When received, 192

*Charlotte*  
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute *FRI. 11 MAY 1928*

Assigned *See P.B. rpt. attached*