

## REPORT ON BOILERS.

No. 78003

Received at London Office

WED. JUL 2 1924

Date of writing Report

192

When handed in at Local Office

11/7/1924

Port of

NEWCASTLE-ON-TYNE

No. in  
Reg. Book.Survey held at *Walker-on-Tyne*Date, First Survey *June 22-1923*Last Survey *3<sup>rd</sup> June 1924*(Number of Visits *24.*)Gross *2345*Tons { Net *1322*on the *STEEL SCREW STEAMER CORDENE*

Master

Built at *Wallsend*

By whom built

*Swan Hunter &**Wigham Richardson & Co. Ltd.* Yard No. *1229* When built *1924*

Engines made at

*S. Shields*

By whom made

*G. L. Grey & Co*Engine No. *614* When made *1924*

Boilers made at

*Walker-on-Tyne*

By whom made

*Swan Hunter & Wigham Richardson & Co. Ltd.*Boiler No. *1168* When made *1924*Nominal Horse Power *247.*Owners *Cory Colliers Coy Ltd*

Port belonging to

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

Manufacturers of Steel *John Spencer Steel Co of Scotland, Leeds Forge* (Letter for Record *S.*)

Total Heating Surface of Boilers

*4215  $\text{ft}^2$* Is forced draught fitted *no*Coal or Oil fired *coal*

No. and Description of Boilers

*2 Single Ended Horizontal Multitubular*Working Pressure *180 lbs*

Tested by hydraulic pressure to

*3200 lbs*Date of test *15 April 24*No. of Certificate *9817*Can each boiler be worked separately *yes*

Area of Firegrate in each Boiler

*49  $\text{ft}^2$* 

No. and Description of safety valves to each boiler

*2 Spring loaded*

Area of each set of valves per boiler

{ per Rule  
as fitted*7.06  $\text{ft}^2$* 

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 D. BOILER*

Smallest distance between boilers or uptakes and bunkers or woodwork

*2'-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

*15'-3 3/8"*

Length

*10'-6"*

Shell plates: Material

*steel*

Tensile strength

*30-34 tons*

Thickness

*1 3/8"*

Are the shell plates welded or flanged

*no*

Description of riveting: circ. seams

{ end  
inter.*Lap & Riveted*

long. seams

*Double butt straps*

Diameter of rivet holes in

{ circ. seams  
long. seams*1 3/8"*

Pitch of rivets

{

*4 3/8"*

Percentage of strength of circ. end seams

{ plate  
rivets*68.72*

Percentage of strength of circ. intermediate seam

{ plate  
rivets*-*

Percentage of strength of longitudinal joint

{ plate  
rivets*84.92*

Working pressure of shell by Rules

*181 lbs*

Thickness of butt straps

{ outer  
inner*3/8"*

No. and Description of Furnaces in each Boiler

*3 Leighton Goulay Stephens*

Material

*Steel*

Tensile strength

*26-30 tons*

Smallest outside diameter

*44"*

Length of plain part

{ top  
bottom*-*

Thickness of plates

{ crown  
bottom*9/16"*

Description of longitudinal joint

*Welded*

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

Working pressure of furnace by Rules

*185 lbs*

End plates in steam space: Material

*Steel*

Tensile strength

*26-30 tons*

Thickness

*1 3/8"*

Pitch of stays

*21 x 14"*

How are stays secured

*Double nuts*

Working pressure by Rules

*190 lbs*

Tube plates: Material

{ front  
back*Steel*

Tensile strength

*26-30 tons*

Thickness

{

*1 3/8"*

Mean pitch of stay tubes in nests

*11 3/8"*

Pitch across wide water spaces

*14 1/2" x 8 3/4"*

Working pressure

{ front  
back*189 lbs*

Girders to combustion chamber tops: Material

*Steel*

Tensile strength

*28-32 tons*

Depth and thickness of girder

at centre

*9' x 14"*

Length as per Rule

*31 1/2"*

Distance apart

*9 1/2"*

No. and pitch of stays

in each

*2-9 3/4"*

Working pressure by Rules

*184 lbs*

Combustion chamber plates: Material

*Steel*

Tensile strength

*26-30 tons*

Thickness: Sides

*23/32"*

Back

*21/32"*

Top

*23/32"*

Bottom

*23/32"*

Pitch of stays to ditto: Sides

*10 x 8"*

Back

*9 1/8" x 8 1/2"*

Top

*9 3/4" x 9 1/2"*

Are stays fitted with nuts or riveted over

*Nuts*

Working pressure by Rules

*182 lbs*

Front plate at bottom: Material

*Steel*

Tensile strength

*26-30 tons*

Thickness

*1 3/8"*

Lower back plate: Material

*Steel*

Tensile strength

*26-30 tons*

Thickness

*3/8"*

Pitch of stays at wide water space

*14 1/2" x 8 1/2"*

Are stays fitted with nuts or riveted over

*Nuts*

Working Pressure

*227 lbs*

Main stays: Material

*Steel*

Tensile strength

*28-32 tons*

Diameter

{ At body of stay,  
or  
Over threads*3"*

No. of threads per inch

*6*

Area supported by each stay

*3570"*

Working pressure by Rules

*188 lbs*

Screw stays: Material

*Steel*

Tensile strength

*26-30 tons*

Diameter

{ At turned off part,  
or  
Over threads*1 7/8"*

No. of threads per inch

*9*

Area supported by each stay

*8108"*



Working pressure by Rules 185 Are the stays drilled at the outer ends 40 Margin stays: Diameter { At turned off part, or Over threads 1 3/4  
No. of threads per inch 9 Area supported by each stay 1000 Working pressure by Rules 181  
Tubes: Material Iron External diameter { Plain 3 1/2 Stay 3 1/2 Thickness { 9-wg. 7/16 No. of threads per inch 9  
Pitch of tubes 4 1/2 x 4 5/8 Working pressure by Rules 211 Manhole compensation: Size of opening in  
shell plate 20 x 16 Section of compensating ring 12 1/2 x 1 3/16 No. of rivets and diameter of rivet holes 32-1 1/2  
Outer row rivet pitch at ends 10 Depth of flange if manhole flanged 2 3/4 Steam Dome: Material 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 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 None 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 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 23 inclusive for boilers been complied with Yes  
The foregoing is a correct description,  
Manufacturer.

Dates of Survey { During progress of work in shops - - 1923 June 22, July 9, 24, 31, Aug 3, 11, 23, Sept 14  
while building { During erection on board vessel - - - 1924 March 11, 24, April 2, 4, 15  
Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.) -> 18/6/20  
Total No. of visits 24.

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.)  
The Boilers built under Special Survey. The material and workmanship found good and efficient.  
The boilers were tested under hydraulic pressure 320 lbs at the makers works, and found Satisfactory. The mountings fitted to the boilers by Messrs G. T. Gray & Co Ltd, The Engine Builders. The boilers were subsequently fitted up on board the Vessel, tested under steam and found Satisfactory. Their Safety Valves adjusted under steam 185 lbs.  
In my opinion this boiler is now eligible for the notification as recommended on the Machinery Report (+LMC. 6.24 IN RED)

Please see Machinery Report  
Survey Fee Boilers ... £ 24: 14: 0 When applied for, 29. JUL 1924  
S.H.-W.R. Travelling Expenses (if any) £ : : When received, 1924  
Maurice Dixon - L. G. Challers  
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRI 4 JUL 1924  
Assigned See other rpt  
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