

# REPORT ON BOILERS.

No. 80503.

Received at London Office

9 JUL 1926

Date of writing Report

192

When handed in at Local Office July 5<sup>th</sup> 1926 Port of NEWCASTLE-ON-TYNE

No. in Reg. Book.

Survey held at Newcastle-on-Tyne

Date, First Survey February 11<sup>th</sup> Last Survey June 15<sup>th</sup> 1926

(Number of Visits 22)

Gross Tons 1360

Net Tons 1062

38923 on the

STEEL SC. EWELL

Master

Built at Burntisland

By whom built Burntisland S.S. Co.

Yard No. 138

When built 1926

Engines made at Newcastle

By whom made North Eastern Marine Eng. Co. Ltd.

Engine No. 2624

When made 1926

Boilers made at Newcastle

By whom made North Eastern Marine Eng. Co. Ltd.

Boiler No. 2624

When made 1926

Nominal Horse Power 156

Owners The Wandsworth, Wimbledon & Epsom District Gas Co. Port belonging to London

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

Manufacturers of Steel David Colville & Son Ltd.

(Letter for Record 5)

Total Heating Surface of Boilers 2758 sq ft

Is forced draught fitted no

Coal or Oil fired Coal

No. and Description of Boilers One single-ended cylindrical

Working Pressure 180 lbs

Tested by hydraulic pressure to 320 lbs

Date of test 20.4.26

No. of Certificate 9993

Can each boiler be worked separately yes

Area of Firegrate in each Boiler 73 sq ft

No. and Description of safety valves to each boiler Two spring-loaded

Area of each set of valves per boiler 17.50" per Rule

19.20" as fitted

Pressure to which they are adjusted 180 lbs

Are they fitted with easing gear yes

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

Smallest distance between boilers 30" and bunkers 30"

Is oil fuel carried in the double bottom under boilers no

Smallest distance between shell of boiler and Keelson 22"

Is the bottom of the boiler insulated no

Largest internal dia. of boilers 16'0 3/8"

Length 11'0"

Shell plates: Material Steel

Tensile strength 28,500 tons

Thickness 1 5/16"

Are the shell plates welded or flanged no

Description of riveting: circ. seams Double

long. seams Double butt straps

Diameter of rivet holes in 1 3/8"

1 3/8"

Pitch of rivets 9 1/2"

Percentage of strength of circ. end seams 65.6

46.3

Percentage of strength of circ. intermediate seam 85.5

Percentage of strength of longitudinal joint 91.7

89.3

Working pressure of shell by Rules 180 lbs

Thickness of butt straps 1"

No. and Description of Furnaces in each Boiler Four Deighton

Material Steel

Tensile strength 26-30 tons

Smallest outside diameter 38 1/2"

Length of plain part 18"

Thickness of plates 1 1/2"

Description of longitudinal joint welded

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

Working pressure of furnace by Rules 188 lbs

End plates in steam space: Material Steel

Tensile strength 26-30 tons

Thickness 1 7/8"

Pitch of stays 2 1/2" x 2 1/2"

How are stays secured Double nuts

Working pressure by Rules 181 lbs

Tube plates: Material Steel

Tensile strength 26-30 tons

Thickness 3/4"

Mean pitch of stay tubes in nests 8 7/8"

Pitch across wide water spaces 14 1/2"

Working pressure 184 lbs

Girders to combustion chamber tops: Material Steel

Tensile strength 28-32 tons

Depth and thickness of girder 15" x 16"

at centre 9" x 1 1/2"

Length as per Rule 32"

Distance apart 10 1/2"

No. and pitch of stays 15" x 16"

in each Two 9 1/2"

Working pressure by Rules 191 lbs

Combustion chamber plates: Material Steel

Tensile strength 26-30 tons

Thickness: Sides 23/32"

Back 23/32"

Top 23/32"

Bottom 15"

Pitch of stays to ditto: Sides 10 1/2" x 9 1/2"

Back 10 1/2" x 9 1/2"

Top 10 1/2" x 9 1/2"

Are stays fitted with nuts or riveted over nuts

Working pressure by Rules 181 lbs

Front plate at bottom: Material Steel

Tensile strength 26-30 tons

Thickness 15/16"

Lower back plate: Material Steel

Tensile strength 26-30 tons

Thickness 7/8"

Pitch of stays at wide water space 14 1/2"

Are stays fitted with nuts or riveted over nuts

Working Pressure 183 lbs

Main stays: Material Steel

Tensile strength 28-32 tons

Diameter 3 1/2"

No. of threads per inch Six

Area supported by each stay 24 1/2" x 22"

Working pressure by Rules 202 lbs

Screw stays: Material Steel

Tensile strength 26-30 tons

Diameter 1 3/4"

No. of threads per inch Nine

Area supported by each stay 99.75 sq in

Working pressure by Rules 182 lbs Are the stays drilled at the outer ends No ✓ Margin stays: Diameter { At turned off part, or Over threads 2" ✓  
 No. of threads per inch nine ✓ Area supported by each stay 12 1/2" x 9 1/2" Working pressure by Rules 208 lbs  
 Tubes: Material Iron ✓ External diameter { Plain 3 1/2" ✓ Stay 3 1/4" ✓ Thickness { No. 8 S.W.G. ✓ 7/8" ✓ 5/16" ✓ No. of threads per inch nine ✓  
 Pitch of tubes 4 1/2" x 4 3/8" ✓ Working pressure by Rules plain 230 lbs Stay 209 lbs Manhole compensation: Size of opening in End 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 4 1/4" ✓ 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  
 How connected to shell Inner radius of crown Working pressure by Rules  
 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 { 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,  
 THE NORTH EASTERN MARINE ENGINEERING CO. LTD. Manufacturer.  
*W. Campbell Allan*

Dates of Survey { During progress of work in shops -- (See machinery report) Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.) Yes  
 while building { During erection on board vessel --- Total No. of visits ✓

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.)  
 This boiler has been constructed under special survey. The materials and workmanship are sound and good. It has been tested by hydraulic pressure in accordance with the rules, efficiently installed and fastened on board the vessel and the safety valves have been adjusted under steam. It is eligible, in my opinion, for notation in the Society's Register Book 180 lbs pressure

Survey Fee ... .. £ See Machinery Report : : When applied for. 192  
 Travelling Expenses (if any) £ See Machinery Report : : When received. 192

*R. Lee Amess*  
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute TUES. 13 JUL 1926  
 Assigned See Report attached

