

# REPORT ON BOILERS.

No. 13262

Received at London Office

-5 APR 1928

Date of writing Report 4.4.1928 When handed in at Local Office 4.4.1928 Port of Middlesbrough

No. in Survey held at STOCKTON. Date, First Survey 21.2.1928 Last Survey 4.4.1928.

7488 on the Boiler for steamer "NORTHWARD" (Clasud) (Number of Visits 6) Tons { Gross Net

Master Built at Selby By whom built Cochrane & Sons Yard No. When built 1906-20  
Engines made at Hull By whom made C. W. Holmes & Co. Ltd Engine No. When made 1906  
Boilers made at Stockton By whom made Riley Bros (Boilermakers) Ltd Boiler No. 5800 When made 1928.  
Nominal Horse Power 60 Owners Forward Steamer Fishing Co Ltd Port belonging to Grimsby

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

Manufacturers of Boilers David Colville & Sons Ltd. (Letter for Record S.)

Total Heating Surface of Boilers 1120 sq ft. Is forced draught fitted no Coal or Oil fired Coal

No. and Description of Boilers One S.B. Working Pressure 198 lbs.

Tested by hydraulic pressure to 347 lbs. Date of test 4.4.28 No. of Certificate 6627. Can each boiler be worked separately ✓

Area of Firegrate in each Boiler 35 sq ft. No. and Description of safety valves to each boiler

Area of each set of valves per boiler { per Rule as fitted Pressure to which they are adjusted Are they fitted with easing gear

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 Is oil fuel carried in the double bottom under boilers

Smallest distance between shell of boiler and tank top plating Is the bottom of the boiler insulated

Largest internal dia. of boilers 11'-9 7/8" Length 10'-0" Shell plates: Material Steel Tensile strength 28/32 ✓

Thickness 1 1/16" Are the shell plates welded or flanged no. Description of riveting: circ. seams { end D.R. ✓ inter. ✓

Long. seams T.R.D.B.S ✓ Diameter of rivet holes in { circ. seams 1 1/4" ✓ long. seams 1 1/16" ✓ Pitch of rivets { 3/8" ✓ 7/32" ✓

Percentage of strength of circ. end seams { plate 65.5. rivets 52.3. Percentage of strength of circ. intermediate seam { plate rivets ✓

Percentage of strength of longitudinal joint { plate 85.77. rivets 86.0. combined 88.8. Working pressure of shell by Rules 199 lbs.

Thickness of butt straps { outer 13/16" ✓ inner 15/16" ✓ No. and Description of Furnaces in each Boiler 2 Plain ✓

Material Steel Tensile strength 26/30 ✓ Smallest outside diameter 3'-8" ✓

Length of plain part { top 5'-9 7/8" ✓ bottom 6'-4" ✓ Thickness of plates { crown 13/16" ✓ bottom 1/16" ✓ Description of longitudinal joint weld.

Dimensions of stiffening rings on furnace or c.e. bottom ✓ Working pressure of furnace by Rules 198 lbs.

End plates in steam space: Material Steel Tensile strength 26/30 Thickness 3/32" ✓ Pitch of stays 17" x 15 1/2"

How are stays secured D.N.W ✓ Working pressure by Rules 198 lbs.

Tube plates: Material { front Steel back Steel Tensile strength { 26/30. Thickness { 3/32" ✓ 7/8" ✓

Lean pitch of stay tubes in nests 9 7/8" Pitch across wide water spaces 14 1/2" ✓ Working pressure { front 222 lbs. back 284 lbs.

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

Centre 8 1/2" x 5 1/8" (double) Length as per Rule 2'-6" ✓ Distance apart 8 1/2" ✓ No. and pitch of stays

Each 2 - 9 1/2" ✓ Working pressure by Rules 205 lbs. Combustion chamber plates: Material Steel ✓

Tensile strength 24/30 ✓ Thickness: Sides 11/16" ✓ Back 11/16" ✓ Top 11/16" ✓ Bottom 1 3/32" ✓

Pitch of stays to ditto: Sides 8" x 9 1/2" ✓ Back 7 3/4" x 10 1/4" ✓ Top 8 1/2" x 9 1/2" ✓ Are stays fitted with nuts or riveted over nuts ✓

Working pressure by Rules 200 lbs. Front plate at bottom: Material Steel Tensile strength 26/30

Thickness 3/32" Lower back plate: Material Steel Tensile strength 26/30 Thickness 3/32"

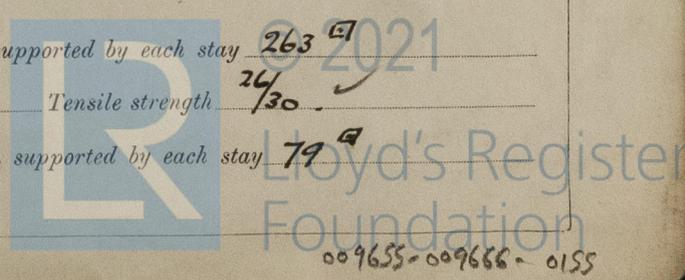
Pitch of stays at wide water space 14 1/2" x 7 3/4" ✓ Are stays fitted with nuts or riveted over nuts ✓

Working Pressure 286 lbs. Main stays: Material Steel Tensile strength 28/32 ✓

Diameter { At body of stay, or Over threads 2 3/4" ✓ No. of threads per inch 6. ✓ Area supported by each stay 263 sq in ✓

Working pressure by Rules 209 lbs. Screw stays: Material Steel Tensile strength 26/30 ✓

Diameter { At turned off part, or Over threads 1 3/4" ✓ No. of threads per inch 9. ✓ Area supported by each stay 79 sq in ✓



Working pressure by Rules 229 lbs. Are the stays drilled at the outer ends no Margin stays: Diameter  $\left\{ \begin{array}{l} \text{At turned off part,} \\ \text{or} \\ \text{Over threads} \end{array} \right. \left. \begin{array}{l} 1 \frac{7}{8} \checkmark \\ 1 \frac{7}{8} \checkmark \end{array} \right.$

No. of threads per inch 9. Area supported by each stay 91 Working pressure by Rules 234 lbs.

Tubes: Material iron External diameter  $\left\{ \begin{array}{l} \text{Plain} \\ \text{Stay} \end{array} \right. \left. \begin{array}{l} 3 \frac{1}{2} \times 3 \frac{3}{4} \checkmark \\ 3 \frac{1}{2} \times 3 \frac{3}{4} \checkmark \end{array} \right.$  Thickness  $\left\{ \begin{array}{l} 8 \text{ w.g.} \\ 9/16 \end{array} \right.$  No. of threads per inch 9.

Pitch of tubes 4 1/2 x 4 3/4 Working pressure by Rules p. 215 s. 252 lbs. Manhole compensation: Size of opening in shell plate 20" x 16" Section of compensating ring 8 1/2" x 1 1/2" No. of rivets and diameter of rivet holes 52 - 1 1/2"

Outer row rivet pitch at ends 7 15/32 Depth of flange if manhole flanged 3" Steam Dome: Material iron

Tensile strength \_\_\_\_\_ Thickness of shell \_\_\_\_\_ Description of longitudinal joint \_\_\_\_\_

Diameter of rivet holes \_\_\_\_\_ Pitch of rivets \_\_\_\_\_ Percentage of strength of joint  $\left\{ \begin{array}{l} \text{Plate} \\ \text{Rivets} \end{array} \right.$

Internal diameter \_\_\_\_\_ Working pressure by Rules \_\_\_\_\_ Thickness of crown \_\_\_\_\_ No. and diam. 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 \_\_\_\_\_ of rivets in outer row in dome connection to shell \_\_\_\_\_

Type of Superheater \_\_\_\_\_ Manufacturers of  $\left\{ \begin{array}{l} \text{Tubes} \\ \text{Steel castings} \end{array} \right.$

Number of elements \_\_\_\_\_ Material of tubes \_\_\_\_\_ Internal diameter and thickness of tubes R

Material of headers \_\_\_\_\_ Tensile strength \_\_\_\_\_ Thickness \_\_\_\_\_ Can the superheater be shut off from the boiler \_\_\_\_\_

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 \_\_\_\_\_

Rules \_\_\_\_\_ Pressure to which the safety valves are adjusted \_\_\_\_\_ Hydraulic \_\_\_\_\_

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.

**RILEY BROS. (BOILERMAKERS) LIMITED,**  
*J. H. Shields* SECRETARY

Dates of Survey  $\left\{ \begin{array}{l} \text{During progress of work in shops - -} \\ \text{while building} \end{array} \right. \left. \begin{array}{l} \text{During erection on board vessel - - -} \end{array} \right.$  1928. Feb 21-29. Mar 6-16-21. Apr 4. Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.)

Total No. of visits 6

**GENERAL REMARKS** (State quality of workmanship, opinions as to class, &c.)

The materials and workmanship are good. This boiler has been built under special survey in accordance with the Rules and approved Plan. It is being sent to Grimsby

Survey Fee ... .. £ 7: 10: 0 When applied for, 192

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

*M. Man*  
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRI. 11 MAY 1928

Assigned

