

# REPORT ON BOILERS.

No. 17352

Received at London Office 20 APR 1928

Date of writing Report 2-4-1928 When handed in at Local Office 192 Port of Rotterdam

No. in Reg. Book. Survey held at Krimpen Id. Lek. Date, First Survey 27-3-28 Last Survey 29-3-1928

on the Steel single screw steam seagoing hopper suction dredge "Kabeljouw" (Number of Visits 2) Tons Gross 290 Net 129

Master Built at Kinderdijk By whom built J. & K. Smit. Yard No. 701. When built 1923. Engines made at Kinderdijk By whom made J. & K. Smit. Engine No. 612. When made 1923. Boilers made at So By whom made So. Boiler No. 616. When made 1923. Nominal Horse Power 54 Owners South African Railways Harbour Port belonging to Port Elisabeth Administration.

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

Manufacturers of Steel Clydesdale iron & steel works, Mossend. (Letter for Record S.)

Total Heating Surface of Boilers 100 sq. m. 1077 sq. ft. Is forced draught fitted Yes. Coal or Oil fired Coal.

No. and Description of Boilers one multitubular marine boiler. Working Pressure 8.4 kg/cm<sup>2</sup>

Tested by hydraulic pressure to Date of test No. of Certificate Can each boiler be worked separately

Area of Firegrate in each Boiler 2.4 sq. m. No. and Description of safety valves to each boiler 2 spring loaded.

diam of each set of valves per boiler per Rule 6.49 as fitted 62 mm. Pressure to which they are adjusted 8.4 kg/cm<sup>2</sup>. 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 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 3000 mm. Length 3000 mm. Shell plates: Material S.M. steel Tensile strength 41-50 kg/cm<sup>2</sup>

Thickness 17 mm. Are the shell plates welded or flanged no. Description of riveting: circ. seams end 2 x riv. inter.

long. seams double butt. 2 x riv. Diameter of rivet holes in circ. seams 22 mm. Pitch of rivets 42 mm. long. seams 22 mm. 117 mm.

Percentage of strength of circ. end seams plate 69.4% rivets 107% Percentage of strength of circ. intermediate seam plate rivets

Percentage of strength of longitudinal joint plate 81.1% rivets 93% combined 93% Working pressure of shell by Rules 8.4 kg/cm<sup>2</sup>

Thickness of butt straps outer 17 inner 17 No. and Description of Furnaces in each Boiler 2 Morrison's furnaces

Material S.M. steel Tensile strength 38-46 kg/cm<sup>2</sup> Smallest outside diameter 820 mm

Length of plain part top bottom Thickness of plates crown 3 bottom 10 Description of longitudinal joint welded

Dimensions of stiffening rings on furnace or c.c. bottom Working pressure of furnace by Rules 11.9 kg/cm<sup>2</sup>

End plates in steam space: Material S.M. steel Tensile strength 40-48 kg/cm<sup>2</sup> Thickness 19 mm Pitch of stays 360 x 340 mm

How are stays secured screwed in plate with nuts & washers outside Working pressure by Rules 13 kg/cm<sup>2</sup>

Tube plates: Material front S.M. steel back So Tensile strength 340-48 kg/cm<sup>2</sup> Thickness 19 mm

Mean pitch of stay tubes in nests 276 x 194 mm Pitch across wide water spaces 360 x 276 Working pressure front 12.4 kg/cm<sup>2</sup> back 16.4 kg/cm<sup>2</sup>

Girders to combustion chamber tops: Material S.M. steel Tensile strength 40-48 kg/cm<sup>2</sup> Depth and thickness of girder

at centre 160 x 276 mm Length as per Rule 670 mm Distance apart 210 mm No. and pitch of stays

in each 2 @ 210 mm Working pressure by Rules 8.4 kg/cm<sup>2</sup> Combustion chamber plates: Material S.M. steel

Tensile strength 38-46 kg/cm<sup>2</sup> Thickness: Sides 16 mm Back 16 mm Top 16 mm Bottom 16 mm

Pitch of stays to ditto: Sides 276 x 195 mm Back 276 x 190 mm Top 276 x 210 mm Are stays fitted with nuts or riveted over riveted over in margin mitered

Working pressure by Rules 9.4 kg/cm<sup>2</sup> Front plate at bottom: Material S.M. steel Tensile strength 40-48 kg/cm<sup>2</sup>

Thickness 19 mm Lower back plate: Material S.M. steel Tensile strength 40-48 kg/cm<sup>2</sup> Thickness 19 mm

Pitch of stays at wide water space 360 x 190 mm Are stays fitted with nuts or riveted over fitted with nuts

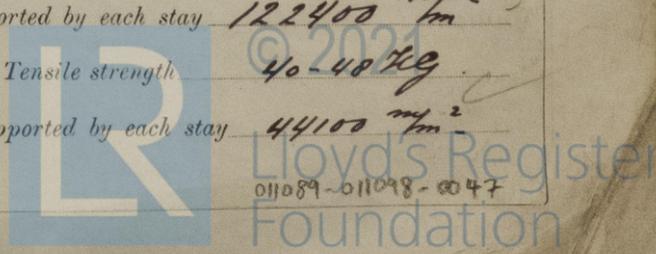
Working Pressure as appr. Main stays: Material S.M. steel Tensile strength 40-48 kg/cm<sup>2</sup>

Diameter At body of stay 52 mm No. of threads per inch 4 Area supported by each stay 122400 mm<sup>2</sup>

Over threads 57 mm Working pressure by Rules 12.8 kg/cm<sup>2</sup> Screw stays: Material S.M. steel Tensile strength 40-48 kg/cm<sup>2</sup>

Diameter At turned off part No. of threads per inch 9 Area supported by each stay 44100 mm<sup>2</sup>

Over threads 38 mm



Working pressure by Rules 12.0 kg Are the stays drilled at the outer ends no Margin stays: Diameter <sup>(At turned off part)</sup> 38 mm  
 No. of threads per inch 9 Area supported by each stay 50900 mm<sup>2</sup> Working pressure by Rules 9.58 kg  
 Tubes: Material S.M. steel External diameter <sup>Plain</sup> 64 Thickness <sup>Stay</sup> 64 <sup>3 mm</sup> 0.28 mm. 46 = 6 mm. No. of threads per inch 9  
 Pitch of tubes 92 mm Working pressure by Rules Manhole compensation: Size of opening in  
 shell plate 300 x 400 mm Section of compensating ring 400 x 600 x 17 mm No. of rivets and diameter of rivet holes 28 riv. @ 22 mm  
 Outer row rivet pitch at ends 130 mm Depth of flange if manhole flanged Steam Dome: Material S.M. steel  
 Tensile strength 41-50 kg Thickness of shell 14 mm Description of longitudinal joint Lap. 2 x riv.  
 Diameter of rivet holes 22 mm Pitch of rivets 42 mm Percentage of strength of joint <sup>Plate</sup> 69.4 %  
 Internal diameter 460 mm Working pressure by Rules 21.8 kg Thickness of crown 14 mm No. and diameter of  
 stays Inner radius of crown 1000 mm Working pressure by Rules 11.5 kg  
 How connected to shell 2 x riv. Size of doubling plate under dome Diameter of rivet holes and pitch  
 of rivets in outer row in dome connection to shell 22 mm x 42 mm

**Type of Superheater** Manufacturers of <sup>Tubes</sup> 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

The foregoing is a correct description,

Manufacturer.

Dates of Survey <sup>(During progress of work in shops - -)</sup> Are the approved plans of boiler and superheater forwarded herewith 1-2-28  
 while building <sup>(During erection on board vessel - -)</sup> (If not state date of approval.)  
 Total No. of visits 2

**GENERAL REMARKS** (State quality of workmanship, opinions as to class, &c.) This boiler has been examined internally and externally, its mountings and fittings and safety valves, scantlings verified with the approved plans and all found in order

Survey Fee ... .. £ 192 When applied for, 192  
 Travelling Expenses (if any) £ 192 When received, 192

J.H. Bourne  
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute WED 11 APR 1928

Assigned

