

REPORT ON BOILERS.

No. 28716

Received at London Office

TUE. 15 JAN 1924

Report 192 When handed in at Local Office 14 JAN 1924 Port of Sunderland

Survey held at Sunderland Date, First Survey Jan 8 1923 Last Survey Apr 8 1923

the machinery of the steel screw steamer 'CRACKSHOT' (Number of Visits 8) Tons { Gross Net

Built at Middlesbrough By whom built Smiths Dock Co. Ld. Yard No. 780 When built 1923

at Middlesbrough By whom made Smiths Dock Co. Ld. Engine No. 236 When made 1923

at Sunderland By whom made N.E. Marine Engineering Co. Ld. Boiler No. 2522 When made 1923

Power 263 Owners Port belonging to

TUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Makers of Steel John Spence & Sons Limited (Letter for Record (S))

Working Surface of Boilers 4462 sq ft Is forced draught fitted no Coal or Oil fired coal

Description of Boilers Two single ended marine Working Pressure 180 lbs

Hydraulic pressure to 320 Date of test 6-3-23 No. of Certificate 3824 Can each boiler be worked separately Yes

Weight in each Boiler 6075 lb No. and Description of safety valves to each boiler 2 direct spring

Each set of valves per boiler { per Rule 14.3 as fitted 16.58 Pressure to which they are adjusted 185 Are they fitted with easing gear Yes

Donkey boilers, state whether steam from main boilers can enter the donkey boiler Yes

Distance between boilers or uptakes and bunkers or woodwork 2'-0" Is oil fuel carried in the double bottom under boilers No

Distance between shell of boiler and tank top plating Is the bottom of the boiler insulated No

External dia. of boilers 15'-6" Length 11'-0" Shell plates: Material steel Tensile strength 28-32 tons

Are the shell plates welded or flanged no Description of riveting: circ. seams { end DR inter. 3 3/4" 9" Pitch of rivets {

Percentage of strength of circ. end seams { plate 65.8% rivets 45.2% Percentage of strength of circ. intermediate seam { plate 85.77% rivets 87.5% combined 88.9% Working pressure of shell by Rules 180

No. and Description of Furnaces in each Boiler 3 Deighton

Tensile strength 26-30 tons Smallest outside diameter 3'-8 3/8"

Thickness of plates { crown 9/16" bottom 7/16" Description of longitudinal joint welded

Working pressure of furnace by Rules 183

Material steel Tensile strength 26-30 tons Thickness 1 9/32" Pitch of stays 22 1/8" x 21 1/2"

Working pressure by Rules 181

Material { front steel back steel Tensile strength { 26-30 Thickness { 7/8" 3/4" Working pressure { front 184 back 182

Material steel Tensile strength 28-32 tons Depth and thickness of girder

Length as per Rule 32 1/2" Distance apart 11 3/4" No. and pitch of stays

Working pressure by Rules 180 Combustion chamber plates: Material steel

Thickness: Sides 23/32" Back 23/32" Top 23/32" Bottom 23/32"

Are stays fitted with nuts or riveted over nuts

Working pressure by Rules 180 Front plate at bottom: Material steel Tensile strength 26-30 tons

Thickness 7/8"

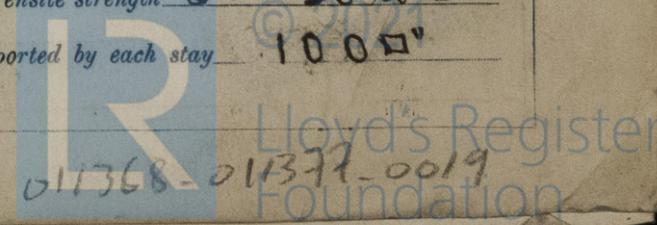
Are stays fitted with nuts or riveted over nuts

Working pressure 194 Main stays: Material steel Tensile strength 28-32 tons

No. of threads per inch 6 Area supported by each stay 480 sq"

Working pressure by Rules 180 Screw stays: Material steel Tensile strength 26-30 tons

No. of threads per inch 9 Area supported by each stay 1000 sq"



REPORT ON BOILERS

Working pressure by Rules 181 Are the stays drilled at the outer ends no Margin stays: Diameter $\left\{ \begin{array}{l} \text{At turned off part} \\ \text{or} \\ \text{Over threads} \end{array} \right. 17\frac{1}{8}$

No. of threads per inch 9 Area supported by each stay 118 sq" Working pressure by Rules 180

Tubes: Material Iron External diameter $\left\{ \begin{array}{l} \text{Plain} \\ \text{Stay} \end{array} \right. \begin{array}{l} 3\frac{1}{4} \\ 3\frac{1}{4} \end{array}$ Thickness $\left\{ \begin{array}{l} 8 \text{ W.C.} \\ 5/16 \text{ \& } 1/4 \end{array} \right.$ No. of threads per inch 9

Pitch of tubes 578 x 498" Working pressure by Rules 182 Manhole compensation: Size of opening 19"

shell plate 20 9/16" x 16 9/16" Section of compensating ring 7 1/32" x 1 9/16" flanged No. of rivets and diameter of rivet holes 34 @ 1 9/16"

Outer row rivet pitch at ends 9" Depth of flange if manhole flanged 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 $\left\{ \begin{array}{l} \text{Plate} \\ \text{Rivets} \end{array} \right.$ _____

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 in connection to shell _____

Type of Superheater

Number of elements _____ Material of tubes _____ Manufacturers of $\left\{ \begin{array}{l} \text{Tubes} \\ \text{Steel castings} \end{array} \right.$ _____ Internal diameter and thickness of tubes _____

Material of headers _____ Tensile strength _____ Thickness _____ Can the superheater be shut off from the boiler? Yes

the boiler be worked separately _____ Is a safety valve fitted to every part of the superheater which can be shut off from the boiler? Yes

Area of each safety valve _____ Are the safety valves fitted with easing gear? Yes Working pressure _____

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? Yes

Have all the requirements of Sections 14 to 23 inclusive for boilers been complied with? Yes

The foregoing is a correct description of the boiler and superheater forwarded herewith (If not state date of approval.)

W. H. H. H.

Dates of Survey $\left\{ \begin{array}{l} \text{During progress of work in shops} \\ \text{while building} \end{array} \right. \begin{array}{l} \text{1. 1925. Jan. 8, 12, 29. Feb. 7, 21, 26. Mar. 6. Apr. 9.} \\ \text{board vessel} \end{array}$

Are the approved plans of boiler and superheater forwarded herewith? Yes

Total No. of visits 8

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

The materials and workmanship are good.

The boilers have been constructed under special survey.

12-1-24. The boilers have been sent to Middlesbrough to be fitted in the vessel (A-1-24).

The boilers have been satisfactory secured on board, examined under steam, safety valves adjusted and all found satisfactory.

Survey Fee £ 27 : 7 :

Travelling Expenses (if any) £ : :

When applied for. 14 JAN 1924

When received. 19. 2. 1924

L. C. Davis & A. D. Morrison

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRIMAR 7 1924

Assigned

