

REPORT ON BOILERS.

No. 28716

Received at London Office

TUE. 15 JAN 1924

Report 102 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. Ltd. Yard No. 780 When built 1923
 at Middlesbrough By whom made Smiths Dock Co. Ltd. Engine No. 236 When made 1923
 at Sunderland By whom made N.E. Marine Engineering Co. Ltd. Boiler No. 2522 When made 1923
 Horse Power 263 Owners Port belonging to

TUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Boilers of Steel John Spencer & Sons Limited (Letter for Record (S))
 Heating 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
 Regulate in each Boiler 60.75 ft No. and Description of safety valves to each boiler 2 direct spring
 Each set of valves per boiler { per Rule 14.3 Pressure to which they are adjusted 185 Are they fitted with easing gear Yes
 as fitted 16.58
 Donkey boilers, state whether steam from main boilers can enter the donkey boiler ✓
 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 1/2" Shell plates: Material steel Tensile strength 28-32 tons
1 1/4" Are the shell plates welded or flanged no Description of riveting: circ. seams { end DR
 inter. ✓
 D.B.S.T.R. Diameter of rivet holes in { circ. seams 1 1/32" Pitch of rivets { 3 3/4"
 long. seams ✓
 of strength of circ. end seams { plate 65.8% Percentage of strength of circ. intermediate seam { plate ✓
 rivets 45.2%
 of strength of longitudinal joint { plate 85.77 Working pressure of shell by Rules 180
 rivets 87.5
 combined 88.9
 of butt straps { outer 1" No. and Description of Furnaces in each Boiler 3 Deighton
 inner 1 1/8" Tensile strength 26-30 tons Smallest outside diameter 3'-8 3/8"
 Steel Thickness of plates { crown 9/16" Description of longitudinal joint welded
 bottom ✓ bottom 1/16"
 of stiffening rings on furnace or c.c. bottom ✓ Working pressure of furnace by Rules 183
 in steam space: Material steel Tensile strength 26-30 tons Thickness 1 1/2" Pitch of stays 22 1/8" x 21 1/2"
 stays secured DN & Washer Working pressure by Rules 181
 Material { front steel Tensile strength { 26-30 Thickness { 7/8"
 back ✓
 of stay tubes in nests 11'-4" Pitch across wide water spaces 14 1/2" Working pressure { front 184
 back 182
 combustion chamber tops: Material steel Tensile strength 28-32 tons Depth and thickness of girder
2 @ 8 3/4" x 15 1/16" Length as per Rule 32 1/2" Distance apart 11 3/4" No. and pitch of stays
3 @ 8" Working pressure by Rules 180 Combustion chamber plates: Material steel
 Tensile strength 28-32 tons Thickness: Sides 23/32" Back 23/32" Top 23/32" Bottom 23/32"
 stays to ditto: Sides 10" x 10" Back 9 3/4" x 10 1/8" Top 11 3/4" x 8" Are stays fitted with nuts or riveted over nuts
 pressure by Rules 180 Front plate at bottom: Material steel Tensile strength 26-30 tons
7/8" Lower back plate: Material steel Tensile strength 26-30 tons Thickness 7/8"
 stays at wide water space 14 1/2" Are stays fitted with nuts or riveted over nuts
 Pressure 194 Main stays: Material steel Tensile strength 28-32 tons
 { At body of stay, 3 1/8" No. of threads per inch 6 Area supported by each stay 480 sq"
 Over threads
 pressure by Rules 180 Screw stays: Material steel Tensile strength 26-30 tons
 { At turned off part, No. of threads per inch 9 Area supported by each stay 1000 sq"
 Over threads 1 3/4"

Working pressure by Rules 181 Are the stays drilled at the outer ends no Margin stays: Diameter { At turned off part, or Over threads 1 7/8" ✓ Working pressure by Rules 180

No. of threads per inch 9 Area supported by each stay 118 1/4" Thickness { 8 W G 5/16 1/4 No. of threads per inch 9

Tubes: Material Iron External diameter { Plain 3 1/4" ✓ Stay 3 1/4" Working pressure by Rules 182 Manhole compensation: Size of opening 1 1/2" x 1 1/2" flanged

Pitch of tubes 4 7/8" x 4 7/8" ✓ Section of compensating ring 7 1/2" x 1 1/2" flanged No. of rivets and diameter of rivet holes 34 @ 1 1/2"

shell plate 20 1/16" x 16 1/16" ✓ 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 { 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 in dome connection to shell

Type of Superheater

Number of elements Material of tubes Manufacturers of { Tubes Steel castings Internal diameter and thickness of tubes

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

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

Rules Pressure to which the safety valves are adjusted Hydraulic test pressure

tubes, castings and after assembly in place Are drain cocks or valves

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

Dates of Survey { During progress of work in shops - - - 1925 Jan. 8, 18, 29, Feb. 7, 21, 26, Mar. 6, Apr. 9, Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.)

while building { During erection on board vessel - - - 6, Apr. 9, 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 (4-1-24)

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

Survey Fee ... £ 27 : 7 : When applied for. 14 JAN 1924

Travelling Expenses (if any) £ : : 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

FRI. APR. 4 1924

Assigned



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