

REPORT ON BOILERS.

No. 109742.

Received at London Office

OCT 27 1937.

Date of writing Report

19

When handed in at Local Office

19/10/37 Port of

No. in Survey held at

Birkenhead

Date, First Survey

17/7/36

Last Survey

15/10/1937

Reg. Book.

on the Twin S.S. City of Cape Town

(Number of Visits 189)

Gross 8046

Net 3935

Master

Built at Birkenhead

By whom built Cammell Laird & Co. Ltd

Yard No. 1023

When built 1937

Engines made at

Birkenhead

By whom made

Cammell Laird & Co. Ltd

Engine No. 1023

When made 1937

Boilers made at

Birkenhead

By whom made

Cammell Laird & Co. Ltd

Boiler No. 1023

When made 1937

Nominal Horse Power.

Owners

Port belonging to

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel Steel Co. of Scotland Scottish Iron & Steel Co. (Letter for Record S.)

Total Heating Surface of Boilers 19800 sq. ft. Is forced draught fitted Yes Coal or Oil fired Either

No. and Description of Boilers 6 Multitubular cylindrical single ended Working Pressure 268 lb. sq. in.

Tested by hydraulic pressure to 448 lb. sq. in. Date of test 12.3.37 No. of Certificate 2468 Can each boiler be worked separately Yes

Area of Firegrate in each Boiler 690 sq. ft. No. and Description of safety valves to each boiler Two spring loaded high lift

Area of each set of valves per boiler 6.94 sq. in. Pressure to which they are adjusted 268 lb. sq. in. 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 or uptakes and bunkers or woodwork 14" Is oil fuel carried in the double bottom under boilers Yes

Smallest distance between shell of boiler and tank top plating 2'-0" Is the bottom of the boiler insulated Yes

Largest internal dia. of boilers 17'-0" Length 12'-6" Shell plates: Material Steel Tensile strength 34-38 tons sq. in.

Thickness 1 23/32" Are the shell plates welded or flanged No Description of riveting: circ. seams end D.R. lap

long. seams Double R. double butt Diameter of rivet holes in circ. seams 1 13/16" Pitch of rivets 4 25/32" 11 1/4"

Percentage of strength of circ. end seams plate 57 rivets 47 Percentage of strength of circ. intermediate seam plate rivets

Percentage of strength of longitudinal joint plate 83.8 rivets 84.6 combined 84.5 Working pressure of shell by Rules 269 lb. sq. in.

Thickness of butt straps outer 1 1/32" inner 1 15/32" No. and Description of Furnaces in each Boiler 4 Corrugated

Material Steel Tensile strength 26-30 tons sq. in. Smallest outside diameter 3'-7"

Length of plain part top bottom Thickness of plates crown 2 3/32" bottom Description of longitudinal joint weld.

Dimensions of stiffening rings on furnace or c.c. bottom none Working pressure of furnace by Rules 268 lb. sq. in.

End plates in steam space: Material Steel Tensile strength 26-30 tons sq. in. Thickness 1 1/32" Pitch of stays 20 3/4" x 16 1/8"

How are stays secured Double nuts & small washers Working pressure by Rules 268 lb. sq. in.

Tube plates: Material front Steel Tensile strength 26-30 tons sq. in. Thickness 1 1/8" Working pressure front 302 lb. sq. in. back 293 lb. sq. in.

Mean pitch of stay tubes in nests 10' 6 1/2" Pitch across wide water spaces 13 3/4"

Girders to combustion chamber tops: Material Steel Tensile strength 28-32 tons sq. in. Depth and thickness of girder

at centre 10 3/4" x 2 plates 27 1/2" Length as per Rule 3'-0 1/2" Distance apart 8 1/2" No. and pitch of stays

in each 3 08 1/2" Working pressure by Rules 273 lb. sq. in. Combustion chamber plates: Material Steel

Tensile strength 26-30 tons sq. in. Thickness: Sides 3/4" Back 13/16" Top 3/4" Bottom 1"

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

Working pressure by Rules 274 lb. sq. in. Front plate at bottom: Material Steel Tensile strength 26-30 tons sq. in.

Thickness 1 1/8" Lower back plate: Material Steel Tensile strength 26-30 tons sq. in. Thickness 1 1/32"

Pitch of stays at wide water space 14 1/2" x 9 1/4" Are stays fitted with nuts or riveted over riveted.

Working Pressure 298 lb. sq. in. Main stays: Material Steel Tensile strength 28-32 tons sq. in.

Diameter At body of stay, 3 1/2" No. of threads per inch 6 Area supported by each stay 334.5 sq. in.

Working pressure by Rules 278 lb. sq. in. Screw stays: Material Steel Tensile strength 26-30 tons sq. in.

Diameter At turned off part, 1 5/8" No. of threads per inch 9 Area supported by each stay 54 sq. in.

Working pressure by Rules 280 lb Are the stays drilled at the outer ends no Margin stays: Diameter { At turned off part, 1 7/8" or Over threads. 1 7/8"
No. of threads per inch 9 Area supported by each stay 79 sq" Working pressure by Rules 270 lb
Tubes: Material B.B. Iron External diameter { Plain 3" Stay 3" Thickness { 7/16" 3/8" No. of threads per inch 9
Pitch of tubes 4 1/4" x 4 1/4" Working pressure by Rules 276 lb Manhole compensation: Size of opening in
shell plate 22 1/2" x 18 1/2" Section of compensating ring 12 3/4" x 1 3/4" No. of rivets and diameter of rivet holes 36 @ 1 3/16"
Outer row rivet pitch at ends 1 3/4" Depth of flange if manhole flanged 3 1/2" 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 and pitch
of rivets in outer row in dome connection to shell ☒

Type of Superheater Smoke tube type Manufacturers of { Tubes Supplied by H.E. Mannie Eng. Co.
Steel forgings ☒
Steel castings ☒
Number of elements 72 each body Material of tubes solid drawn steel Internal diameter and thickness of tubes 15 1/4" x 2 1/2"
Material of headers mild steel Tensile strength ☒ Thickness 7/8" Can the superheater be shut off and
the boiler be worked separately yes 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 3.14 sq" Are the safety valves fitted with easing gear yes Working pressure as per
Rules 265 lb Pressure to which the safety valves are adjusted 268 lb Hydraulic test pressure:
tubes ☒ forgings and castings ☒ and after assembly in place 530 lb Are drain cocks or
valves fitted to free the superheater from water where necessary yes
Have all the requirements of Sections 14 to 22 inclusive for boilers been complied with yes

The foregoing is a correct description,
H. E. Mannie & Co. Limited Manufacturer.

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

Is this Boiler a duplicate of a previous case no If so, state Vessel's name and Report No. ☒

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) These boilers have been constructed under special survey, and are in accordance with the Rules and the approved plan. They have been satisfactorily fitted on board and examined under steam

Survey Fee ... £ ☒ : : When applied for, 19
Travelling Expenses (if any) £ : : When received, 19

J. O. Millon.
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute LIVERPOOL 26 OCT 1937

Assigned See Mach^y rpt. W.R.B.