

REPORT ON BOILERS.

No. 93942

Received at London Office - 8 JUL 1936

Date of writing Report 19 When handed in at Local Office 27/10/36 Port of NEWCASTLE-ON-TYNE

No. in Reg. Book. Survey held at Newcastle on Tyne Date, First Survey 31st Aug 135 Last Survey 1st July 1936

on the Steel Lion's UMTALI. (Number of Visits) Gross 8158 Tons Net 5084

Master Built at Newcastle on Tyne By whom built S. H. & W. R. L. S. Yard No. 1492 When built 1936

Engines made at Newcastle on Tyne By whom made Swan Hunter & Wigham Richardson Ld. Engine No. 1492 When made 1936

Boilers made at do By whom made do Boiler No. 1492 When made 1936

Nominal Horse Power Owners Bullard King & Co Ld Port belonging to LONDON

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel Steel Coy of Scotland (Letter for Record 15)

Total Heating Surface of Boilers 14184 Is forced draught fitted Yes Coal or Oil fired Coal

No. and Description of Boilers Four, Single Ended "Scotch" Working Pressure 225 lb/sq in

Tested by hydraulic pressure to 388 lb Date of test 13.2.36 No. of Certificate 659 Can each boiler be worked separately Yes

Area of Firegrate in each Boiler 86.8 sq ft No. and Description of safety valves to each boiler Two - 2 3/4 dia Cockburn Improved High Lift.

Area of each set of valves per boiler {per Rule 9.2 sq in as fitted 11.88 Pressure to which they are adjusted 225 lb 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 12" Is oil fuel carried in the double bottom under boilers No

Smallest distance between shell of boiler and tank top plating 2'-6" Is the bottom of the boiler insulated Yes

Largest internal dia. of boilers 17'-2 3/8" (206 3/8) Length 12'-6" Shell plates: Material Steel Tensile strength 32 to 36 tons/sq in

Thickness 1 9/16" Are the shell plates welded or flanged No Description of riveting: circ. seams {inter. 4.485" end dble riveted lap. long. seams 1 9/16" Pitch of rivets {9 3/4" 4.485"

Percentage of strength of circ. end seams {plate 63.76 rivets 42.54 Percentage of strength of circ. intermediate seam {plate 83.97 rivets 84.81

Percentage of strength of longitudinal joint {plate 83.97 rivets 84.81 combined 84.9 Working pressure of shell by Rules 226.7 lb

Thickness of butt straps {outer 1 7/32" inner 1 11/32" No. and Description of Furnaces in each Boiler Four - Deighton Type.

Material Steel Tensile strength 26 to 30 tons/sq in Smallest outside diameter 45 3/4"

Length of plain part {top 3" bottom 2' 7" c.c. bottom. Thickness of plates {crown 23/32" bottom 27/32" c.c. Description of longitudinal joint Fire weld.

Dimensions of stiffening rings on furnace or c.c. bottom None Working pressure of furnace by Rules 230 lb

End plates in steam space: Material Steel Tensile strength 26 to 30 tons Thickness 1 5/16" Pitch of stays 20" x 15 3/8"

How are stays secured Screwed thro plates & nuts outside Working pressure by Rules 227 lb

Tube plates: Material {front Steel back Steel Tensile strength {26 to 30 tons Thickness {15/16" Centre 27/32" Wing 27/32"

Mean pitch of stay tubes in nests wing 10 5/16" Pitch across wide water spaces 14" x 8 1/4" Working pressure {front 229 lb back 260 lb wing 240 lb

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

at centre 10 7/8" x 1 1/2" Length as per Rule 36 17/32" Distance apart 9 1/8" No. and pitch of stays

in each 3 @ 8 1/2" Working pressure by Rules 226 lb. Combustion chamber plates: Material Steel

Tensile strength 26 to 30 tons Thickness: Sides 27/32" Back 23/32" Top 27/32" Bottom 27/32"

Pitch of stays to ditto: Sides 8 1/2" x 9 5/8" Back 8 1/8" x 9 5/8" Top 8 1/2" x 9 1/8" Are stays fitted with nuts or riveted over with nuts

Working pressure by Rules 228 lb (Back) Front plate at bottom: Material Steel Tensile strength 26 to 30 tons

Thickness 15/16" Lower back plate: Material Steel Tensile strength 26 to 30 tons Thickness 1"

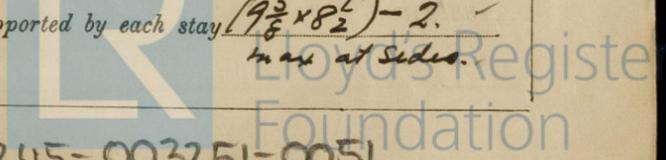
Pitch of stays at wide water space 15 1/8" x 9 5/8" Are stays fitted with nuts or riveted over with nuts

Working Pressure 256 lb Main stays: Material Steel Tensile strength 28 to 32 tons

Diameter {At body of stay, 3 1/8" dia Over threads 3 1/8" No. of threads per inch 9 Area supported by each stay (20 x 15 1/2) - 6.6

Working pressure by Rules 242 lb Screw stays: Material Steel Tensile strength 26 to 30 tons

Diameter {At turned off part, 1.6" at both of thread Over threads 1 3/4" No. of threads per inch 9 Area supported by each stay (9 5/8 x 8 1/2) - 2



Working pressure by Rules 227 lb Are the stays drilled at the outer ends No Margin stays: Diameter { At turned off part, 1.85" or 1.60" Over threads 2" + 1 3/4"

No. of threads per inch 9 Area supported by each stay (1 1/2" x 9 5/8") - 2.7 sq in Working pressure by Rules for 2" dia - 228 lb.

Tubes: Material IRON External diameter { Plain 3" o/d. Stay 3" o/d. Thickness { 7. W.G. 3/8" + 5/16" No. of threads per inch 9.

Pitch of tubes (13 1/4" x 8 1/4") - 28 sq in Working pressure by Rules 226 lb. min. Manhole compensation: Size of opening in shell plate None Section of compensating ring ✓ No. of rivets and diameter of rivet holes ✓

Outer row rivet pitch at ends ✓ Depth of flange if manhole flanged ✓ Steam Dome: Material ✓

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 'North Eastern' Smoke-tube Manufacturers of { Tubes Stewart & Lloyd Steel castings Forged Steel Headers, Frodingham Steel Co.

Number of elements 320 Material of tubes Solid drawn steel Internal diameter and thickness of tubes 1 5/8" ; 2.5 1/2"

Material of headers Forged Steel Tensile strength 26 to 30 tons Thickness 1 1/2" 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 3.97 sq in Are the safety valves fitted with easing gear Yes Working pressure as per Rules 225 lb Pressure to which the safety valves are adjusted 225 lb. Hydraulic test pressure: tubes 1500 lb. Headers 675 lb and after assembly in place 450 lb/E 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

SWAN, HOUTER & WILSON, LTD.
 G. J. Stewart
 The foregoing is a correct description,
 Manufacturer.

Dates of Survey { During progress of work in shops - - } See Machinery Report Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.) 18th April 1935 U.M.T.A.T.A.

{ While building } { During erection on board vessel - - - } Total No. of visits

Is this Boiler a duplicate of a previous case Yes If so, state Vessel's name and Report No. UMTATA. Invc. Rpt.

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) The Boilers have been built under Special Survey in accordance with the Rules and approved plan, and the materials and workmanship are good.

The Boilers have been satisfactorily fitted in the ship and the safety valve were adjusted to the working pressure as stated above.

Survey Fee ... £ See Machinery Rpt. H. When applied for, 19

Travelling Expenses (if any) £ : : When received, 19

A. Watt
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRI. 10 JUL 1936

Assigned See Other Invc. Rpt.
93942



If not, state whether, and when, one will be sent. In a Report also sent on the Hull of the Ship records which do not apply should be deleted.