Rpt. 5a.

REPORT ON BOILERS. No. 31972

Date of writing Report 192 When handed in at Local Office 20 NOV. 1936 192 Received at London Office 25 DEC 1936

No. in Reg. Book. Survey held at Sunderland. Port of Sunderland.

on the S.S. "LLANASHE" Date, First Survey — Last Survey 18 Nov 1936

(Number of Visits —) Tons Gross 4836 Net 2911

Master

Built at Sunderland By whom built Bartram & Sons Ltd. Yard No. 243 When built 1936.

Engines made at Hebburn on Tyne By whom made White's Mar. Eng. Co Ltd. Engine No. 6C. When made 1936.

Boilers made at Sunderland By whom made G. Clark (1936) Ltd. Boiler No. 1200½ When made 1936.

Nominal Horse Power 348 Owners Clarissa Radcliffe S.S. Co Ltd. Port belonging to London.

MULTITUBULAR BOILERS ~~MAIN~~, AUXILIARY, ~~OR DONKEY~~.

Manufacturers of Steel The Steel Company of Scotland

Total Heating Surface of Boilers 1264 ft² Letter for Record S.

No. and Description of Boilers One Single Ended multitubular marine. Is forced draught fitted no. Coal or Oil fired Coal.

Tested by hydraulic pressure to 395. Date of test 11/9/36 No. of Certificate 4201. Working Pressure 230 lbs/in²

Area of Firegrate in each Boiler 24½ ft² Can each boiler be worked separately

Area of each set of valves per boiler (per Rule 3.28 o" / as fitted 3.52 o") No. and Description of safety valves to each boiler Two "Cockburn" High Lift.

In case of donkey boilers, state whether steam from main boilers can enter the donkey boiler Pressure to which they are adjusted 230 Are they fitted with easing gear Yes.

Smallest distance between boilers or uptakes and bunkers or woodwork (between main boilers) 3'-0" Is oil fuel carried in the double bottom under boilers no.

Smallest distance between shell of boiler and tank top plating Is the bottom of the boiler insulated Yes.

Largest internal dia. of boilers 11'-9 19/32" Length 10'-6" **Shell plates:** Material Steel Tensile strength 29/33.

Thickness 1 13/64" Are the shell plates welded or flanged no. Description of riveting: circ. seams (end) D.R. Lap.

Long. seams T.R.D.B.S. Diameter of rivet holes in (circ. seams) F. 1 3/16" B 1/4" (long. seams) 1¼" Pitch of rivets F. 3 3/16" B. 3½" 8 3/8"

Percentage of strength of circ. end seams (plate) F. 65.6 B. 64. (rivets) F. 42.4 B. 45.8 Percentage of strength of circ. intermediate seam (plate) (rivets)

Percentage of strength of longitudinal joint (plate) 85.04 (rivets) 90.2 (combined) 88.6 Working pressure of shell by Rules 231.

Thickness of butt straps (outer) 15/16" (inner) 1 1/16" **No. and Description of Furnaces in each Boiler** Two Corrugated (Deighton).

Material Steel Tensile strength 26/30 Smallest outside diameter 3'-4 1/32"

Length of plain part (top) (bottom) Thickness of plates (crown) 41/64" (bottom) Description of longitudinal joint Weld.

Dimensions of stiffening rings on furnace or c.c. bottom Working pressure of furnace by Rules 233

End plates in steam space: Material Steel Tensile strength 26/30 Thickness 14/32" Pitch of stays 18" × 16"

How are stays secured Double nuts. Working pressure by Rules 238

Tube plates: Material (front) (back) Steel Tensile strength 26/30 Thickness 1 1/16" 13/16"

Mean pitch of stay tubes in nests 11¼" × 9" Pitch across wide water spaces 14 1/4" Working pressure (front) 410 W.W. 2/6 (back) 235

Girders to combustion chamber tops: Material Steel Tensile strength 29/33 Depth and thickness of girder

No. at centre 4 3/4" × 1 3/4" Length as per Rule 2'-5½" Distance apart 9 1/8" No. and pitch of stays

No. at each 2 @ 9 1/8" Working pressure by Rules 235. **Combustion chamber plates:** Material Steel

Tensile strength 26/30 Thickness: Sides 3/4" Back 23/32" Top 3/4" Bottom 21/32"

Pitch of stays to ditto: Sides 9¼" × 9" Back 8¾" × 9" Top 9⅛" × 9⅛" Are stays fitted with nuts or riveted over nuts.

Working pressure by Rules 234, 231, 234 **Front plate at bottom:** Material Steel Tensile strength 26/30.

Thickness 1 1/16" **Lower back plate:** Material Steel Tensile strength 26/30 Thickness 1"

Pitch of stays at wide water space 15" Are stays fitted with nuts or riveted over nuts.

Working Pressure 241. **Main stays:** Material Steel Tensile strength 28/32.

Diameter (At body of stay, or Over threads) 2 3/4" 3 1/8" No. of threads per inch 6. Area supported by each stay 16½" × 16½"

Working pressure by Rules 239. **Screw stays:** Material Steel Tensile strength 26/30.

Diameter (At turned off part, or Over threads) 1 3/4" 1 7/8" No. of threads per inch 9. Area supported by each stay 9" × 8 3/4" 9" × 9 1/4"

Working pressure by Rules 232 256. ✓ Are the stays drilled at the outer ends No. ✓ Margin stays: Diameter { At turned off part ✓ / Over threads 1 7/8" 2" 2 1/4" }

No. of threads per inch 9. ✓ Area supported by each stay 11 5/8 × 9", 11 3/8" × 11 5/8 Working pressure by Rules 236, 234

Tubes: Material S.D. Steel External diameter { Plain 3 1/4" / Stay 3 1/4" ✓ } Thickness { 7 WG. / 5/16" 3/8" 13/32" } No. of threads per inch 9

Pitch of tubes 4 1/3" × 4 1/2" Working pressure by Rules 262, 250 **Manhole compensation:** Size of opening in shell plate (End plate) Section of compensating ring ✓ No. of rivets and diameter of rivet holes ✓

Outer row rivet pitch at ends ✓ Depth of flange if manhole flanged 3 1/8" ✓ **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 none. Manufacturers of { Tubes / 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 22 inclusive for boilers been complied with Yes. ✓.

The foregoing is a correct description,

FOR GEORGE CLARK (1936) LTD.

Manufacturer.

Dates of Survey { During progress of work in shops - - } Please see Mchy Rpt. { During erection on board vessel - - - } while building

Are the approved plans of boiler and superheater forwarded herewith Retained for District Wood.
(If not state date of approval.)

Total No. of visits

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

This boiler has been constructed under Special Survey in accordance with the approved Plan & the Rules of the Society.

The materials & workmanship are good.

On completion the boiler was tested by hydraulic pressure in accordance with the Rules & found tight & sound.

The boiler has been Securely fixed on board the Vessel Examined under Steam Safety valves adjusted to working pressure & accumulation test carried out Satisfactorily.

For recommendation please See Mchy. Rpt.

Survey Fee ... ... Charged on Mchy. Rpt. When applied for, 192

Travelling Expenses (if any) £ When received, 192

D. St. Fraser.

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRI. 18 DEC 1936

Assigned See minute on F.E rpt.