Rpt. 5a.

Bl 9352

REPORT ON BOILERS.

2 JUN 25 84423

Received at London Office 3 DEC 1924

Date of writing Report Nov. 29th 1924 When handed in at Local Office 3 DEC 1924 Port of London

No. in Survey Book. Survey held at Stitchin Date, First Survey 19th NOVEMBER Last Survey Nov. 28th 1924

on the T.S.M.S. PORT DUNEDIN. (Number of Visits Two.) Tons Gross 4463 Net 4453

Spencer-Bonecourt Kirks Patent Waste Heat Boiler No. 3203

for Messrs Workman Clark & Co Ltd No. 477

Master Built at Belfast. By whom built Workman Clark & Co Ltd Yard No. 474 When built 1925

Engines made at Sunderland By whom made W. Dorman & Sons Engine No. 151 When made 1925

WASTE HEAT BOILER ~~Boilers~~ made at Stitchin By whom made Messrs Spencer-Bonecourt Boiler No. 3203 When made 1924

Nominal Horse Power 1118 Owners Commonwealth & Dominion Line Port belonging to London

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Waste Heat.

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

Manufacturers of Steel W. Colville & Sons (Letter for Record S)

Total Heating Surface of Boilers 1814 ft Is forced draught fitted — Exhaust Gases from Auxiliary ~~Coal or Oil~~ fired Diesel Engines.

No. and Description of Boilers One Vertical Multitubular Kirks Patent Working Pressure 100 lbs per sq in

Tested by hydraulic pressure to 200 Date of test 28-11-24 No. of Certificate 1274 Can each boiler be worked separately —

Area of Firegrate in each Boiler — No. and Description of safety valves to each boiler 1 Spring Loaded

Area of each set of valves per boiler {per Rule 2-07 0" / as fitted 3-14 0"} Pressure to which they are adjusted 100 lbs. Are they fitted with easing gear no

In case of donkey boilers, state whether steam from main boilers can enter the donkey boiler —

Smallest distance between boilers or uptakes and bunkers or woodwork 15" (H'laggng) Is oil fuel carried in the double bottom under boilers —

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

Largest internal dia. of boilers 2- 3" Length 9- 0" **Shell plates:** Material Steel Tensile strength 26-30 Tons

Thickness 1/4" Are the shell plates welded or flanged no Description of riveting: circ. seams {end Single / inter. do.}

long. seams DR Butt. Diameter of rivet holes in {circ. seams 11/16 / long. seams 11/16} Pitch of rivets {1 23/32 / 2.28 2.265}

Percentage of strength of circ. end seams {plate 59% / rivets 72.5%} Percentage of strength of circ. intermediate seam {plate / rivets}

Percentage of strength of longitudinal joint {plate 70% / rivets 107% / combined} Working pressure of shell by Rules 138

Thickness of butt straps {outer / inner} **No. and Description of Furnaces in each Boiler** See plan

Material Tensile strength Smallest outside diameter

Length of plain part {top / bottom} Thickness of plates {crown / bottom} Description of longitudinal joint

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

End plates in steam space: Material Steel Tensile strength 26-30 Thickness 1/2 Pitch of stays

How are stays secured Working pressure by Rules

Tube plates: Material {front Steel / back Steel} Tensile strength 26-30 Thickness {1/2" / 1/2"}

Mean pitch of stay tubes in nests 7 3/4 Pitch across wide water spaces Working pressure {front / back 100}

Girders to combustion chamber tops: Material Tensile strength Depth and thickness of girder

at centre Length as per Rule Distance apart No. and pitch of stays

in each Working pressure by Rules **Combustion chamber plates:** Material

Tensile strength Thickness: Sides Back Top Bottom

Pitch of stays to ditto: Sides Back Top Are stays fitted with nuts or riveted over

Working pressure by Rules **Front plate at bottom:** Material Tensile strength

Thickness **Lower back plate:** Material Tensile strength Thickness

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

Working Pressure **Main stays:** Material Tensile strength

Diameter {At body of stay, or Over threads} No. of threads per inch Area supported by each stay

Working pressure by Rules **Screw stays:** Material Tensile strength

Diameter {At turned off part, or Over threads} No. of threads per inch Area supported by each stay

Working pressure by Rules _____ *Are the stays drilled at the outer ends* _____ *Margin stays: Diameter* { *At turned off part,* _____ / *Over threads* _____

No. of threads per inch _____ *Area supported by each stay* _____ *Working pressure by Rules* _____

Tubes; *Material* Steel *External diameter* { *Plain* 1 3/4 Screwed 61 7/4 / *Stay* _____ *Thickness* { 10 S.W.G. / _____ *No. of threads per inch* _____

Pitch of tubes 2 3/4 x 2 3/4 *Working pressure by Rules* 100 **Manhole compensation:** *Size of opening in shell plate* 13" x 10" + 11½" x 9" *Section of compensating ring* 1-15/16 x 7/16 + 1-6 x 3/4 *No. of rivets and diameter of rivet holes* 24 - 11/16 - 16 11/16

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 _____ *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* 23 *inclusive for boilers been complied with* _____.

The foregoing is a correct description,

SPENCER-BONECOURT LTD.

Manufacturer.

Dates of Survey while building { *During progress of work in shops* - - 1924 Nov. 19 28 / *During erection on board vessel* - - - _____

Are the approved plans of boiler and superheater forwarded herewith W. Jackson - Yes
(If not state date of approval.)

Total No. of visits 2

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

This boiler has been built under Special Survey in accordance with the plan and the Society's Rules.
The workmanship is good
Upon completion the boiler was tested by hydraulic pressure to 200 lbs per sq in and showed no sign of weakness or defect.

The boiler is stamped:—
No. 1274
Lloyds Cert
200 lbs
W.P. 100 lbs
28.11.24 H.P.C.

Boiler efficiently installed & examined under steam.

Survey Fee ... ... £ 4 : 4 : 0 | When applied for, _____ 192__
Travelling Expenses (if any) £ — : 14 : | When received, 21st Jan 1925

8 DEC 1924

H. P. Comish
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRL 5 JUN 1925

Assigned Sec. Bel. 9353

William Butler.