

Rpt. 5a.

REPORT ON BOILERS.

No. 21128.

Received at London Office

NOV -8 1940

Date of writing Report 30th OCT. 1940. When handed in at Local Office 2nd NOV. 1940. Port of Greenock.

No. in Reg. Book. Survey held at Greenock.

Date, First Survey 11th DECEMBER 1939. Last Survey 28th OCTOBER 1940.

(Number of Visits)

Gross 5237
Net 3076

on the AIRCREST

Master Built at Port Glasgow By whom built Messrs Lithgows Ltd. Yard No. 936 When built 1940
 Engines made at Greenock By whom made Messrs Rankin & Blackmore Ltd. Engine No. 470 When made 1940
 Boilers made at Greenock By whom made Messrs Rankin & Blackmore Ltd. Boiler No. 470 When made 1940
 Nominal Horse Power 436 Owners Crest Shipping Co. Ltd. Port belonging to London.

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

Manufacturers of Steel Colvilles Ltd. Horsely Budge and Thomas Piggot Ltd. (Letter for Record 5)
 Total Heating Surface of Boilers 5830 sq ft Is forced draught fitted Yes. Coal or Oil fired Coal.
 No. and Description of Boilers 2 - SE. Cylindrical Working Pressure 220 lbs
 Tested by hydraulic pressure to 380 lbs. Date of test 23/25/7/40 No. of Certificate 2211, 2212. Can each boiler be worked separately Yes.
 Area of Firegrate in each Boiler 67 sq ft. No. and Description of safety valves to each boiler 2. Cockburns Improved High Lift
 Area of each set of valves per boiler {per Rule 9.4 sq ft. as fitted 14.8 sq ft. Pressure to which they are adjusted 220 lbs. Are they fitted with easing gear Yes.
 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 24" Is oil fuel carried in the double bottom under boilers NO.
 Smallest distance between shell of boiler and tank top plating 2'-2" Is the bottom of the boiler insulated Yes.
 Largest internal dia. of boilers 16'-3" Length 12'-0" Shell plates: Material S. Tensile strength 29/33 tons
 Thickness 1 19/32" Are the shell plates welded or flanged No. Description of riveting: circ. seams {end D.R. inter. 4 23/32" 11 7/16"
 long. seams T.R.D.B.S. Diameter of rivet holes in {circ. seams 1 5/8" long. seams 1 5/8" Pitch of rivets {plate 4 23/32" rivets 11 7/16"
 Percentage of strength of circ. end seams {plate 61.5 rivets 48.7 Percentage of strength of circ. intermediate seam {plate 85.3 rivets 87.2
 Percentage of strength of longitudinal joint {plate 85.3 rivets 87.2 combined 88.1 Working pressure of shell by Rules 226 lbs.
 Thickness of butt straps {outer 1 1/4" inner 1 3/8" No. and Description of Furnaces in each Boiler 4 Corrugated, Reighton Section.
 Material S. Tensile strength 26/30 tons Smallest outside diameter 3'-5 5/16"
 Length of plain part {top bottom Thickness of plates {crown 21/32" bottom 3/32" Description of longitudinal joint Weld.
 Dimensions of stiffening rings on furnace or c.c. bottom Working pressure of furnace by Rules 232 lbs.
 End plates in steam space: Material S. Tensile strength 26/30 tons Thickness 1 15/32" Pitch of stays 22" x 20"
 How are stays secured D. nuts and Washers. Working pressure by Rules 229 lbs.
 Tube plates: Material {front S. back S. Tensile strength {26/30 tons Thickness {1 13/16" 244 lbs.
 Mean pitch of stay tubes in nests 9 3/4" Pitch across wide water spaces 14" Working pressure {front 244 lbs. back 250 lbs.
 Girders to combustion chamber tops: Material S. Tensile strength 29/33 tons Depth and thickness of girder
 at centre 10 1/2" x 1 1/2" Length as per Rule 34 7/16" Distance apart 9" wings 9 1/2" centre No. and pitch of stays
 in each 3 - 8 1/2" Working pressure by Rules 230 lbs. Combustion chamber plates: Material S.
 Tensile strength 26/30 tons Thickness: Sides 3/4" Back 3/4" Top 3/4" Bottom 7/8"
 Pitch of stays to ditto: Sides 9 1/2" x 8 1/2" Back 9 1/2" x 8 1/2" Top 9 1/2" x 8 1/2" Are stays fitted with nuts or riveted over Nuts
 Working pressure by Rules 244 lbs. Front plate at bottom: Material S. Tensile strength 26/30 tons
 Thickness 1 1/32" Lower back plate: Material S. Tensile strength 26/30 tons Thickness 1"
 Pitch of stays at wide water space 14 1/4" x 9 1/2" Are stays fitted with nuts or riveted over Nuts
 Working Pressure 220 lbs. Main stays: Material S. Tensile strength 28/32 tons.
 Diameter {At body of stay, 3 1/2" No. of threads per inch 6 Area supported by each stay 4/8 sq ft.
 Over threads Working pressure by Rules 226 lbs. Screw stays: Material S. Tensile strength 26/30 tons
 Diameter {At turned off part, 1 3/4" No. of threads per inch 9 Area supported by each stay 80 3/4 sq ft.

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Working pressure by Rules 225 lbs Are the stays drilled at the outer ends No Margin stays: Diameter { At turned off part, 2" or Over threads 2" Working pressure by Rules 229 lbs

No. of threads per inch 9 Area supported by each stay 108 sq" Thickness { 8 1/4" No. of threads per inch 9

Tubes: Material N. 1. External diameter { Plain 3" Stay 3" Working pressure by Rules 250 lbs Manhole compensation: Size of opening in shell plate 16" x 12" Section of compensating ring 2'9" x 2'6" x 1 1/2" No. of rivets and diameter of rivet holes 28 - 1 5/8"

Pitch of tubes 4 1/4" x 4 1/8" Outer row rivet pitch at ends 1 1/16" 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 Smoke tube.

Manufacturers of

Tubes Messrs Superheater Co. Ltd
Steel forgings Messrs Superheater Co. Ltd
Steel castings —

Number of elements 144 Material of tubes S.O. steel. Internal diameter and thickness of tubes 17 1/2" x 2 1/2" m.

Material of headers M.S. Billets Tensile strength — Thickness 1 1/8" 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 220 lbs. Pressure to which the safety valves are adjusted 220 lbs. Hydraulic test pressure: tubes 1000 lbs. forgings and castings 660 lbs. and after assembly in place 550 lbs. 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,

RANKIN & BLACKMORE LTD.

Manufacturer.

H. J. Smith

Managing Director

Dates of Survey { During progress of work in shops - - } while building { During erection on board vessel - - }

SEE MACHINERY REPORT.

Are the approved plans of boiler and superheater forwarded herewith (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 built under Special Survey, in accordance with the approved plans. The materials and workmanship are good. For recommendation please see Machinery Report.

Survey Fee

Travelling Expenses (if any)

When applied for,

19

When received,

19

Committee's Minute

GLASGOW

5 NOV 1940

Assigned SEE ACCOMPANYING MACHINERY REPORT.

M. Caldwell.

Engineer Surveyor to Lloyd's Register of Shipping.



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