

REPORT ON BOILERS.

No. 20891.

Received at London Office

JAN 24 1940

Date of writing Report 17/1/40

When handed in at Local Office 18/1/40 Port of GREENOCK.

No. in Survey held at GREENOCK.

Date, First Survey 10th APRIL 1939. Last Survey 17th JANUARY 1940

(Number of Visits) Gross 5738.19
Tons Net 3039.37.

on the TEMPLE ARCH.

Built at PORT GLASGOW By whom built MESSRS LITHGOWS LD Yard No. 929 When built 1940-1
Engines made at GREENOCK By whom made MESSRS RANKIN & BLACKMORE LD Engine No. 462 When made 1940
Boilers made at " " By whom made " " Boiler No. 462 When made 1940
Nominal Horse Power 482 Owners TEMPLE S.S. CO LD Port belonging to LONDON.

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel COLVILLES, LD. (Letter for Record S)
Total Heating Surface of Boilers 1576 sq ft Is forced draught fitted Yes Coal or Oil fired COAL.
No. and Description of Boilers ONE SINGLE ENDED CYLINDRICAL Working Pressure 230 lbs
Tested by hydraulic pressure to 395 lbs. Date of test 5.9.39. No. of Certificate 2195 Can each boiler be worked separately YES
Area of Firegrate in each Boiler 45 sq ft No. and Description of safety valves to each boiler 2 S.L. COCKBURNS IMPROVED HIGH LIFT.
Area of each set of valves per boiler { per Rule 4 sq ft as fitted 4.80" Pressure to which they are adjusted 230 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 26" Is the bottom of the boiler insulated YES
Largest internal dia. of boilers 12'-9 3/8" Length 10'-6" Shell plates: Material STEEL Tensile strength 29-33 TONS.
Thickness 1 5/16" Are the shell plates welded or flanged No. Description of riveting: circ. seams { end D.R. inter. 4.05" 9.5"
Long. seams T.R.D.B.S. Diameter of rivet holes in { circ. seams 1 3/8" long. seams 1 3/8" Pitch of rivets { plate 4.05" rivets 9.5"
Percentage of strength of circ. end seams { plate 66.2 rivets 44.25 Percentage of strength of circ. intermediate seam { plate 85.5 rivets 88.5
Percentage of strength of longitudinal joint { plate 88.5 rivets 88.7 Working pressure of shell by Rules 234
Thickness of butt straps { outer 1 1/8" inner 1 1/8" No. and Description of Furnaces in each Boiler 3 DEIGHTON SECTION.
Material STEEL Tensile strength 26-30 TONS Smallest outside diameter 3'-0 3/16"
Length of plain part { top 19" bottom 32" Thickness of plates { crown 19" bottom 32" Description of longitudinal joint WELD
Dimensions of stiffening rings on furnace or c.c. bottom Working pressure of furnace by Rules 239 lbs.
End plates in steam space: Material STEEL Tensile strength 26-30 TONS Thickness 1 11/32" Pitch of stays 20" x 17"
How are stays secured D NUTS & WASHERS Working pressure by Rules 235.5 lbs.
End plates: Material { front STEEL back STEEL Tensile strength { 26/30 TONS Thickness { 1 11/32" 25"
Mean pitch of stay tubes in nests 9 1/4" Pitch across wide water spaces 14" Working pressure { front 244 lbs. back 234 lbs.
Orders to combustion chamber tops: Material STEEL Tensile strength 29/33 TONS Depth and thickness of girder
centre 9 3/4" x 1 3/8" Length as per Rule 31 15/32" Distance apart 8 3/4" No. and pitch of stays
each 3-8 1/2" Working pressure by Rules 243 lbs. Combustion chamber plates: Material STEEL
Tensile strength 26/30 TONS Thickness: Sides 23/32" Back 3/4" Top 23/32" Bottom 7/8"
Pitch of stays to ditto: Sides 9 1/8" x 8 1/2" Back 9 1/4" x 8 1/2" Top 8 3/4" x 8 1/2" Are stays fitted with nuts or riveted over NUTS.
Working pressure by Rules 231 lbs. Front plate at bottom: Material STEEL Tensile strength 26/30 TONS
Thickness 1 1/32" Lower back plate: Material STEEL Tensile strength 26-30 TONS Thickness 29/32"
Pitch of stays at wide water space 14 1/4" Are stays fitted with nuts or riveted over NUTS.
Working Pressure 233.5 lbs. Main stays: Material STEEL Tensile strength 28-32 TONS
Diameter { At body of stay, 3 1/4" No. of threads per inch 6 Area supported by each stay 340 sq in
Over threads
Working pressure by Rules 236 lbs. Screw stays: Material STEEL Tensile strength 26-30 TONS
Diameter { At turned off part, 1 3/4" No. of threads per inch 9 Area supported by each stay 78.6 sq in
Over threads

Working pressure by Rules 234 lbs Are the stays drilled at the outer ends No. Margin stays: Diameter { At turned off part, or Over threads 2"

No. of threads per inch 9 Area supported by each stay 105.25 sq" Working pressure by Rules 235 lbs.

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

Pitch of tubes 4 1/8" x 4 1/8" Working pressure by Rules 298 lbs Manhole compensation: Size of opening in shell plate 16" x 12" Section of compensating ring 2'-5" x 2'-9" x 1 5/16" No. of rivets and diameter of rivet holes 28 - 1 3/8"

Outer row rivet pitch at ends 9 1/2" 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 —

How connected to shell — Inner radius of crown — Working pressure by Rules —

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 forgings 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 —

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 forgings and 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,
 RANKIN & BLACKMORE, LTD.,
 Manufacturer.
H. J. Rankin 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 Yes If so, state Vessel's name and Report No. DORNOCH. GRK. No 20698

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) This boiler has been built under survey in accordance with the approved plans. The materials and workmanship are good. For recommendations please see Machinery Report.

Survey Fee
 Travelling Expenses (if any)

When applied for, 19
 When received, 19

Changed in Machinery Report

M. Caldwell.
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute **GLASGOW 23 JAN 1940**

Assigned **SEE ACCOMPANYING MACHINERY REPORT.**