

REPORT ON BOILERS.

No. 21002.

Received at London Office

JUL 2 1940

Date of writing Report 25/6/1940 When handed in at Local Office 25/6/1940 Port of Greenock

No. in Survey held at Reg. Book.

Greenock

Date, First Survey 20th July 1939 Last Survey 24th June 1940

(Number of Visits ✓)

Gross 4512
Net 2672

on the

"CAPE WRATH"

Master

Built at Port Glasgow

By whom built Messrs Jithgows Ltd.

Yard No. 934

When built 1940

Engines made at

Greenock

By whom made

Messrs Rankin & Blackmore Ltd.

Engine No. 464

When made 1940

Boilers made at

Greenock

By whom made

Messrs Rankin & Blackmore Ltd.

Boiler No. 464

When made 1940

Nominal Horse Power

448

Owners

LYLE SHIPPING CO. LD

Port belonging to

GLASGOW.

MULTITUBULAR BOILERS MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel

Messrs Colvilles Ltd.

(Letter for Record S. ✓)

Total Heating Surface of Boilers

1576 sq ft

Is forced draught fitted

Yes

Coal or Oil fired

Both

No. and Description of Boilers

One - S.E. Multitubular

Working Pressure

220 lbs

Tested by hydraulic pressure to

380 lbs

Date of test

20/12/39

No. of Certificate

2200

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 Impounding High Lift

Area of each set of valves per boiler

per Rule 4'0" 0"

as fitted 4'8" 0"

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

5'0"

Is oil fuel carried in the double bottom under boilers

Yes

Smallest distance between shell of boiler and tank top plating

2'0"

Is the bottom of the boiler insulated

Yes

Largest internal dia. of boilers

12'9 3/8"

Length

10'6"

Shell plates: Material

S.

Tensile strength

29/33 tons

Thickness

1 5/16"

Are the shell plates welded or flanged

No.

Description of riveting: circ. seams

end 4'05" 0.R.

long. seams

T.R.O.B.S.

Diameter of rivet holes in

circ. seams 1 3/8"

Pitch of rivets

4'05"

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 85.5

rivets 88.5

combined 88.7

Working pressure of shell by Rules

234 lbs.

Thickness of butt straps

outer 1" inner 1 1/8"

No. and Description of Furnaces in each Boiler

3 Corrugated Reighton Section

Material

S.

Tensile strength

26/30 tons

Smallest outside diameter

3'0 1/8"

Length of plain part

top bottom

Thickness of plates

crown 9/16"

bottom 7/16"

Description of longitudinal joint

Weld

Dimensions of stiffening rings on furnace or c.c. bottom

Working pressure of furnace by Rules

226 lbs.

End plates in steam space: Material

S.

Tensile strength

26/30 tons

Thickness

1 5/16"

Pitch of stays 17" x 20 3/4"

How are stays secured

D.N.s and Washers

Working pressure by Rules

224 lbs.

Tube plates: Material

front back

S.

Tensile strength

26/30 tons

Thickness

25/32"

Mean pitch of stay tubes in nests

9 1/4"

Pitch across wide water spaces

14"

Working pressure

front 228 lbs back 234 lbs

Girders to combustion chamber tops: Material

S.

Tensile strength

29/33 tons

Depth and thickness of girder

at 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

in each

3-8 1/2"

Working pressure by Rules

243 lbs.

Combustion chamber plates: Material

S.

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

S.

Tensile strength

26/30 tons

Thickness

1"

Lower back plate: Material

S.

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

Mangus nuts - others riveted

Working Pressure

233 lbs

Main stays: Material

S.

Tensile strength

28/32 tons

Diameter

At body of stay, or Over threads

3 1/4"

No. of threads per inch

6

Area supported by each stay

340 sq in

Working pressure by Rules

236 lbs

Screw stays: Material

S.

Tensile strength

26/30 tons

Diameter

At turned off part, or Over threads

1 3/4"

No. of threads per inch

9

Area supported by each stay

78.6 sq in

004887-004892-0282

Lloyd's Register Foundation

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 5 External diameter { Plain 3" Thickness { 8 mm. 5/16" 6 3/8" No. of threads per inch 9
Pitch of tubes 4 1/8" x 4 1/8" Working pressure by Rules 250 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 / 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 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 / 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 / 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.,
H. 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 No. If so, state Vessel's name and Report No. /

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) This boiler Larkun built under Special Survey in accordance with the approved plan. 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

Launched on Machinery Report

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

Committee's Minute GLASGOW 2 JUL 1940

Assigned SEE ACCOMPANYING MACHINERY REPORT.