

REPORT ON BOILERS.

No. 21002.

Received at London Office

JUL -3 1940

Date of writing Report 25/6/1940 When handed in at Local Office 25/6/1940 Port of GreenockNo. in Survey held at
Reg. Book.GreenockDate, First Survey 20th JULY 1939 Last Survey 24th JUNE 1940on the CAPE WRATH

(Number of Visits

Gross 4512
Tons Net 2672

Master Built at Port Glasgow By whom built Miss^{rs} Lithgow & Co. Ltd. Yard No. 934 When built 1940
Engines made at Greenock By whom made Miss^{rs} Rankin & Blackman Ltd Engine No. 464 When made 1940
Boilers made at — " — By whom made — " — Boiler No. 464 When made 1940
Nominal Horse Power 448 Owners LYLE SHIPPING CO. LD. Port belonging to GLASGOW

12/39 MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel

Messrs. Colvilles Ltd.

(Letter for Record

5

Total Heating Surface of Boilers

4976

Is forced draught fitted

Yes

Coal or Oil fired

Both

No. and Description of Boilers

2 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

52.5

No. and Description of safety valves to each boiler

2 S.L. Cockscrews Improved high lift

Area of each set of valves per boiler

8.0

per Rule

9.8

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

15'-1 1/2"

Length

12'-0"

Shell plates: Material

S

Tensile strength

29/33 tons

Thickness

1 1/2"

Are the shell plates welded or flanged

ho.

Description of riveting: circ. seams

endinter.

long. seams

T.R.D.B.S.

Diameter of rivet holes in

1 1/2"

Pitch of rivets

4'-10 6/5"

Percentage of strength of circ. end seams

plate63.4rivets45.6

Percentage of strength of circ. intermediate seam

plate85.4

Percentage of strength of longitudinal joint

plate85.4rivets84.6combined87.7

Working pressure of shell by Rules

226 lbs

Thickness of butt straps

outer1 3/16"inner1 5/16"

No. and Description of Furnaces in each Boiler

3. Deighton Section.

Material

S.

Tensile strength

26/30 tons

Smallest outside diameter

3'-9 3/8"

Length of plain part

topbottom

Thickness of plates

crown11/16"

Description of longitudinal joint

Weld.

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

Working pressure of furnace by Rules

222 lbs.

End plates in steam space: Material

S.

Tensile strength

26/30 tons

Thickness

1 3/8"

Pitch of stays

20" x 22"

How are stays secured

Double nuts and Washers.

Working pressure by Rules

222 lbs

Tube plates: Material

frontS.

Tensile strength

26/30 tons

Thickness

1"

Mean pitch of stay tubes in nests

10 1/2"

Pitch across wide water spaces

14 1/2"

Working pressure

front32248 lbsback32233 lbs.

Girders to combustion chamber tops: Material

S.

Tensile strength

29/33 tons

Depth and thickness of girder

at centre

11 1/2" x 1 5/8"

Length as per Rule

38 3/8"

Distance apart

10 1/4"

No. and pitch of stays

in each

3 - 9 1/4"

Working pressure by Rules

223 lbs.

Combustion chamber plates: Material

S.

Tensile strength

26/30 tons

Thickness: Sides

25/32"

Back

25/32"

Top

25/32"

Bottom

7/8"

Pitch of stays to ditto: Sides

9 1/4" x 10 1/4"

Back

9 1/2" x 9"

Top

10 1/4" x 9 1/4"

Are stays fitted with nuts or riveted over

Nuts

Working pressure by Rules

221 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

15/16"

Pitch of stays at wide water space

14 1/2"

Are stays fitted with nuts or riveted over

Nuts

Working Pressure

231 lbs

Main stays: Material

S.

Tensile strength

28/32 tons

Diameter

At body of stay,orOver threads3 3/8"

No. of threads per inch

6

Area supported by each stay

390 lb

Working pressure by Rules

224 lbs.

Screw stays: Material

S.

Tensile strength

26/30 tons

Diameter

At turned off part,orOver threads2"

No. of threads per inch

9

Area supported by each stay

89.2 lb

Working pressure by Rules **277 1/2** 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 **109 0"** Working pressure by Rules **227 lbs**
Tubes: Material **W. I.** External diameter { Plain **3"** Thickness { **5/16" & 3/8"** No. of threads per inch **9**
Pitch of tubes **4 1/8" x 4 1/4"** Working pressure by Rules **250 lbs** Manhole compensation: Size of opening in
shell plate **16" x 12"** Section of compensating ring **3-1/4" x 2-1/4" x 1/2"** No. of rivets and diameter of rivet holes **32 - 1/2"**
Outer row rivet pitch at ends **10 1/32"** Depth of flange if manhole flanged
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 Eng
stays Inner radius of crown Working pressure by Rules
How connected to shell Size of doubting plate under dome Diameter of rivet holes and pitch
of rivets in outer row in dome connection to shell

Type of Superheater **Smoke tube type** Manufacturers of { Tubes **Messrs. The Superheater Co Ltd**
Steel forgings
Steel castings
Number of elements **106** Material of tubes **S. O. steel** Internal diameter and thickness of tubes **17 m/m x 2 1/2 m/m**
Material of headers **steel** Tensile strength Thickness **5/8"** 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 0"** 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/sq in** 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

The foregoing is a correct description,
RANKIN & BLACKMOORE DTB. Manufacturer.
Managing Dir

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

Changed in Machinery Report

M. Caldwell.

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute **GLASGOW**

2 JUL 1940

Assigned SEE ACCOMPANYING MACHINERY REPORT.