

REPORT ON BOILERS.

No. 8463.

Received at London Office

-1 APR 1931

Date of writing Report

24th March 1931

When handed in at Local Office

25th March 1931

Port of Copenhagen

No. in Surveys held at

Copenhagen

Date, First Survey

12th July 1930

Last Survey

18th March 1931

90698.

on the

Steel Turbine Motor Tank Vessel "GARONNE"

(Number of Visits

48)

Gross

7112.72

Net

4210.82

Master

Built at

Copenhagen

By whom built

Mks. Burmeister & Wain's

Maskin- & Skibbyggeri Yard No. 594

When built

1931

Engines made at

Copenhagen

By whom made

Mks. Burmeister & Wain's Maskin- & Skibbyggeri

Engine No.

1928

When made

1931

Boilers made at

Copenhagen

By whom made

Mks. Burmeister & Wain's Maskin- & Skibbyggeri

Boiler No.

1845

When made

1931

Nominal Horse Power for T.C. 133.3.

Owners

Dampskibsselskabet "Garonne"

Port belonging to

Oslo

(Framley & Eger)

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

SHELL-BUTT STRAPS—COMBUSTION CHAMBER SIDES & BOTTOM: Manganese Steelweld 1/2 Stahl. Walzwerke Thyssen & Sohn/Heim/Ruhr.

REMAINING PLATES: 1/2 Dunlop, 1/2 La. Calcutta and 1/2 Colville & Sons La. Kotherwell-TURNARIES: The Brownside Boiler Works Co. Ltd.

Manufacturers of Steel: Mather & Platt, STAYS & SCREW STAYS: The United Ship & Bar Works Ltd. Sheffield, CAST STEEL GIRDERS: (Letter for Record)

1/2 Burmeister & Wain, Copenhagen—RIVETS: Hinge Bros. Copenhagen

Total Heating Surface of Boilers 2 x 1000 sq. ft. = 2000 sq. ft.

Is forced draught fitted

yes

Coal or Oil fired

oil

No. and Description of Boilers

2 off single ended, return multitubular

Working Pressure

180 lbs per sq. in.

Tested by hydraulic pressure to

320 lbs per sq. in.

Date of test

17.12.1930

No. of Certificate

528-529

Can each boiler be worked separately

yes

Area of Firegrate in each Boiler

No. and Description of safety valves to each boiler

2 off directly spring loaded

Area of each set of valves per boiler

per Rule

7.70 sq. ft.

as fitted

11.88 sq. ft.

Pressure to which they are adjusted

180 lbs per sq. in.

Are they fitted with easing gear

yes

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

No main boiler fitted.

Smallest distance between boilers or uptakes and bunkers or woodwork

No bunkers or woodwork

Is oil fuel carried in the double bottom under boilers

No

Smallest distance between shell of boiler and tank top plating

In boiler and tank top plating at top of engine

Is the bottom of the boiler insulated

yes

Largest internal dia. of boilers

10' - 3"

Length

10' - 7 3/8"

Shell plates: Material

Premium Mather & Platt

Tensile strength

46.6-48.8 kg/mm²

Thickness

7/8"

Are the shell plates welded or flanged

No

Description of riveting: circ. seams

end lap joint

long. seams

Double butt strap

Diameter of rivet holes in

circ. seams

1 1/8"

Pitch of rivets

3 3/8"

Percentage of strength of circ. end seams

plate

66.7 %

rivets

55.0 %

Percentage of strength of circ. intermediate seam

plate

86.4 %

Percentage of strength of longitudinal joint

rivets

88.35 %

combined

90.37 %

Working pressure of shell by Rules

185.9 lbs per sq. in.

Thickness of butt straps

outer

7/8"

No. and Description of Furnaces in each Boiler

2 off corrugated Morrison section

Material

Premium Mather & Platt Steel

Tensile strength

28.6-29.0 Tons per sq. in.

Smallest outside diameter

2' - 11"

Length of plain part

top

bottom

Thickness of plates

crown

1/2"

Description of longitudinal joint

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

Working pressure of furnace by Rules

205.7 lbs per sq. in.

End plates in steam space: Material

Premium Mather & Platt Steel

Tensile strength

27.7-28.5 Tons per sq. in.

Thickness

15/16"

Pitch of stays

15" x 12"

How are stays secured

Screwed into both plates, nuts in & outside

Working pressure by Rules

218.8 lbs per sq. in.

Tube plates: Material

Premium Mather & Platt Steel

Tensile strength

28.0-28.4 Tons per sq. in.

Thickness

3/4"

Mean pitch of stay tubes in nests

7" x 10 1/2"

Pitch across wide water spaces

14"

Working pressure

front 178.5 lbs per sq. in.

back 262.5 lbs per sq. in.

Girders to combustion chamber tops: Material

Cast steel

Tensile strength

28.8-30.9 Tons per sq. in.

Depth and thickness of girder

to centre

7 1/4" - 1"

Length as per Rule

25 1/2"

Distance apart

7 1/2"

No. and pitch of stays

in each

2 off - 8"

Working pressure by Rules

186.6 lbs per sq. in.

Combustion chamber plates: Material

Premium Mather & Platt Steel

Tensile strength

BACK: 28.9 Tons per sq. in.

Thickness: Sides

5/8"

Back

5/8"

Top

5/8"

Bottom

3/4"

Pitch of stays to ditto: Sides

8" x 7 1/2"

Back

7 3/4" x 7"

Top

8" x 7 1/2"

Are stays fitted with nuts or riveted over row: Nuts in & outside.

Working pressure by Rules

BACK 242.2 lbs per sq. in.

Front plate at bottom: Material

Premium Mather & Platt Steel

Tensile strength

28.0-28.4 Tons per sq. in.

Thickness

15/16"

Lower back plate: Material

Premium Mather & Platt Steel

Tensile strength

27.7-28.5 Tons per sq. in.

Thickness

15/16"

Pitch of stays at wide water space

2 - 16"

Are stays fitted with nuts or riveted over

Screwed into both plates, nuts in & outside.

Working Pressure

361 lbs per sq. in.

Main stays: Material

Premium Mather & Platt Steel

Tensile strength

28.7-31.0 Tons per sq. in.

Diameter

At body of stay, 2 1/2"

Over threads

2 3/4" - 2 1/2"

2 1/4" - 2"

No. of threads per inch

11

Area supported by each stay

180 sq. in.

Working pressure by Rules

246.2 lbs per sq. in.

Screw stays: Material

Premium Mather & Platt Steel

Tensile strength

26-27 Tons per sq. in.

Diameter

At turned off part, 1 1/2"

Over threads

1 1/2"

No. of threads per inch

11

Area supported by each stay

60 sq. in.

Working pressure by Rules 209 $\frac{16}{10}$ Are the stays drilled at the outer ends No Margin stays: Diameter { At turned off part, $\frac{3}{4}$ " or Over threads $\frac{1}{4}$ "
No. of threads per inch 11 Area supported by each stay 72.38 \square " Working pressure by Rules 250.8 lbs per \square "
Tubes: Material Steel External diameter { Plain $2\frac{1}{2}$ " Thickness $\frac{5}{16}$ " & $\frac{3}{8}$ " No. of threads per inch 11
Pitch of tubes $3\frac{1}{2}$ " x $3\frac{1}{2}$ " Working pressure by Rules 230 lbs per \square " Manhole compensation: Size of opening in
shell plate 16" x 20" Section of compensating ring Flange No. of rivets and diameter of rivet holes 62 $\frac{1}{2}$ " - $\frac{5}{16}$ "
Outer row rivet pitch at ends 5" Depth of flange if manhole flanged $3\frac{3}{8}$ " 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 22 inclusive for boilers been complied with yes.

The foregoing is a correct description,
AKTIESELSKABET
BURMEISTER & WAINSKIN-OG SKIDBY Manufacturer.

Dates of Survey { During progress of work in shops - 1930: 12/7-16/7-17/7-23/7-18/8-28/8-4/9-9/9-17/9-19/9
while building { During erection on board vessel - 1931: 3/1-7/1-11/1-17/1-22/1-29/1-30/1-2/2-4/2-6/2-9/2-13/2 Total No. of visits 48
Are the approved plans of boiler and superheater forwarded herewith yes.
(If not state date of approval.)

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.)
These boilers have been built under Special Survey in accordance with the Rules, the
approved plan and the requirements contained in the Secretary's letter E dated 28th May 1930
The material has been tested as required by the Rules, as per certificates produced
and the workmanship is of good description throughout
The boilers have been fitted on board the above named vessel and completed to our
entire satisfaction.
Oil fuel burning arrangement has been installed in accordance with the
requirements of the Rules.
Two vertical duplex feed pumps 6 $\frac{1}{2}$ " x 4" x 6" have been fitted.

Survey Fee ... 242.61. When applied for, 30.3. 1931.
Travelling Expenses (if any) £ : : When received, 9.5. 1931.

A.O. Friebech. E. Clausen.
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute TUE. 14 APR 1931
Assigned See F.E. Rpt.