

REPORT ON BOILERS.

No. 1545

Received at London Office 26 AUG 1936

Date of writing Report

19

When handed in at Local Office

24. 8.

10.36

Port of

GDYNIA

No. in
Reg. Book.

Survey held at

Elbing & Danzig

Date, First Survey

6th Dec. 1935

Last Survey

30th July 1936

81750. on the

Steel S. "Paul Harnett"

(Number of Visits 16)

Gross 10443

Tons Net 5815

Master

Built at

Danzig

By whom built

F. Schichau Gm. b. H.

Card No.

1350

When built

1936

Engines made at

Elbing

By whom made

F. Schichau Gm. b. H.

Engine No.

When made

1936

Boilers made at

Elbing

By whom made

F. Schichau Gm. b. H.

Boiler No.

3852 1/2

When made

1936

Nominal Horse Power

912.

Owners

Deutsch-Am. Petroleum Ges.

Port belonging to

Hamburg

(Waried Pankschiff Reederei Gm. b. H. AGS)

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

Manufacturers of Steel Mannesmann Röhrenwerke, AG, Heine, Bismarck, Hütte, Hückingen

Total Heating Surface of Boilers

510 sqm.

Is forced draught fitted

yes

Coal or Oil fired

oil

No. and Description of Boilers

2 multitubular donkey boilers

Working Pressure

200 lbs (14 kg)

Tested by hydraulic pressure to

350 lbs

Date of test

27.3.36

No. of Certificate

1 & 2

Can each boiler be worked separately

yes

Area of Firegrate in each Boiler

No. and Description of safety valves to each boiler

2, spring loaded

Area of each set of valves per boiler

per Rule

2 x 58 sqcm

as fitted

2 x 78 "

Pressure to which they are adjusted

200 lbs

Are they fitted with easing gear

yes

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

yes, so exhaust gas fired donkey C.

Smallest distance between boilers or uptakes and bunkers or woodwork

Is oil fuel carried in the double bottom under boilers

Smallest distance between shell of boiler and tank top plating

Is the bottom of the boiler insulated

yes

Largest internal dia. of boilers

4400 mm

Length

3590 mm

Shell plates: Material

Steel

Tensile strength

47-56 kg

Thickness

31.5 mm

Are the shell plates welded or flanged

Description of riveting: circ. seams

end

double

inter

108 mm

Pitch of rivets

230 "

long. seams

treble riv. butt straps

Diameter of rivet holes in

circ. seams

35 mm

long. seams

35 "

Percentage of strength of circ. end seams

plate

67.5 %

rivets

43.4 %

Percentage of strength of circ. intermediate seam

plate

84.7 %

rivets

96.7 %

Percentage of strength of longitudinal joint

plate

84.7 %

rivets

96.7 %

combined

Working pressure of shell by Rules

14.1 kg. per sqcm.

Thickness of butt straps

outer

24 mm

inner

29 "

No. and Description of Furnaces in each Boiler

3, Morrison

Material

steel

Tensile strength

41-50 kg

Smallest outside diameter

1080 mm

Length of plain part

top

140 mm

bottom

Thickness of plates

crown

15 mm

bottom

Description of longitudinal joint

welded

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

Working pressure of furnace by Rules

14.2 kg

End plates in steam space: Material

Steel

Tensile strength

41-50 kg

Thickness

27 mm

Pitch of stays

450-380 mm

How are stays secured

double nuts and washers

Working pressure by Rules

17.4 kg

Tube plates: Material

front

steel

back

Tensile strength

41-50 kg

Thickness

27 mm

Pitch of stays

450-380 mm

Mean pitch of stay tubes in nests

285 mm

Pitch across wide water spaces

365 mm

Working pressure

front

14.2 kg

back

26.3 "

Girders to combustion chamber tops: Material

Steel

Tensile strength

44-53 kg

Depth and thickness of girder

at centre

230 x 16 mm

Length as per Rule

800 mm

Distance apart

200 mm

No. and pitch of stays

in each

3 - 200 mm

Working pressure by Rules

14.7 kg

Combustion chamber plates: Material

steel

Tensile strength

41-50 kg

Thickness: Sides

18 mm

Back

18 mm

Top

18 mm

Bottom

23 mm

Pitch of stays to ditto: Sides

143 x 185 mm

Back

140 x 190 mm

Top

200 mm

Are stays fitted with nuts or riveted over

outer rows only nuts

Working pressure by Rules

20 kg

Front plate at bottom: Material

Steel

Tensile strength

41-50 kg

Thickness

24 mm

Lower back plate: Material

Steel

Tensile strength

41-50 kg

Thickness

24 mm

Pitch of stays at wide water space

345 mm

Are stays fitted with nuts or riveted over only outer rows with nuts

Working Pressure

14.6 kg

Main stays: Material

Steel

Tensile strength

41-47 kg

Diameter

At body of stay,

or

over threads

40-45 mm

No. of threads per inch

6

Area supported by each stay

1630-2060 sqcm

Working pressure by Rules

17.5 kg

Screw stays: Material

Steel

Tensile strength

41-47 kg

Diameter

At turned off part,

or

over threads

35 mm

No. of threads per inch

9

Area supported by each stay

323 sqcm

Working pressure by Rules 14.8 kgs Are the stays drilled at the outer ends no Margin stays: Diameter { At turned off part, 45 & 51 mm Over threads 45 & 51 mm }
No. of threads per inch 9 Area supported by each stay 580 - 735 sq cm Working pressure by Rules 14.6 - 15.4 kgs
Tubes: Material Steel External diameter { Plain 83 mm Stay 83 } Thickness { 4 mm } No. of threads per inch 9
Pitch of tubes 110 mm Working pressure by Rules 16 kgs Manhole compensation: Size of opening in shell plate 420 x 520 mm Section of compensating ring 1220 x 1000 x 32 mm No. of rivets and diameter of rivet holes 40 of 35 mm dia
Outer row rivet pitch at ends 230 mm Depth of flange if manhole flanged 100 mm 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 System Schmidt Manufacturers of { Tubes Press- & Walzwerk Düsseldorf-Reisholz Steel castings — }
Number of elements 22 Material of tubes Steel Internal diameter and thickness of tubes 32 mm / 3 mm
Material of headers S. M. steel Tensile strength 41-50 kgs Thickness 20 mm 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 — Are the safety valves fitted with easing gear yes Working pressure as per Rules 14 kgs Pressure to which the safety valves are adjusted 200 kgs Hydraulic test pressure: tubes 40 kgs castings 42 kgs and after assembly in place 28 kgs 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,
G. m. b. H. Manufacturer.
— P. da. —

Dates of Survey { During progress of work in shops - - - 1935 Dec 6, 10, 1936 Jan 24, 31, Mar 24, 27 Apr 4, 8 Are the approved plans of boiler and superheater forwarded herewith Forwarded from Station Office (If not state date of approval.)
while building { During erection on board vessel - - - 1936 Apr 21, 30 May 28, June 25, 26 July 16, 29, 30 Total No. of visits 16

Is this Boiler a duplicate of a previous case — 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 and in conformity with the Society's Rules. Material and workmanship are of good quality. Both boilers were tested by hydraulic pressure to 350 lbs and found tight and sound at that pressure, also under steam they were tight. Adjusted their safety-valves to 200 lbs.

Mark on boilers:

No 1.	No 2.
LLOYD'S TEST	LLOYD'S TEST
350 lbs.	350 lbs.
W.P. 200 lbs.	W.P. 200 lbs.
N.S.	N.S. 8.4.36.
J.C.D. 27.3.36.	J.C.D.

(included in fee on rpt. 4 B) Survey Fee ... RM : 610.00 Fee applied for by Hamburg Office When applied for, 19 Travelling Expenses (if any) £ : : When received, 20.10 19 36

A. Rolse
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRI. 4 SEP 1936
Assigned See Gdy. 76.1545