

REPORT ON BOILERS.

No. 10125

Received at London Office

28 JAN 1937

Date of writing Report 23rd January 1937 When handed in at Local Office

102

Port of Copenhagen

No. in Survey held at

Copenhagen

Date, First Survey

22nd April 1936

Last Survey

25 January 1937

of opening

Reg. Book.

3rd Dec 1936

88121

on the

Tugboat "Esso BELGIUM"

(Number of Visits

24)

Gross

10568.23

Net

5557.22

Master

Built at

Copenhagen

By whom built

Ap. Burmeister & Wain
Hastings of Skibbyggen

Yard No.

623

When built

1937

Engines made at

Copenhagen

By whom made

The builders

Engine No.

2579

When made

1937.

Boilers made at

Copenhagen

By whom made

The builders

Boiler No.

1916

When made

1937.

Nominal Horse Power

946

Owners

American Petroleum Company
Societe Anonyme Belge

Port belonging to

Antwerp.

MULTITUBULAR BOILERS MAIN, AUXILIARY, OR DONKEY.

Plates: Colville & Co. Hull; Tubes: Stewart & Lloyds Ltd. Warrington; Stays: United Steel Co. Sheffield (Letter for Record S)

Total Heating Surface of Boilers

2 x 255.8 m²

Is forced draught fitted

yes

Coal or Oil fired

yes

No. and Description of Boilers

2 off single ended horizontal

Working Pressure

200 lbs/0"

Tested by hydraulic pressure to

350 lbs

Date of test

5-11-36

No. of Certificate

592-93

Can each boiler be worked separately

yes

Area of Firegrate in each Boiler

9110 m²

No. and Description of safety valves to each boiler

2 off direct spring loaded, 90° m clean

Area of each set of valves per boiler

12700 m²

Pressure to which they are adjusted

200 lbs/0"

Are they fitted with easing gear

yes

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

no word write

Smallest distance between boilers or uptakes and bunkers or woodwork

no word write

Is oil fuel carried in the double bottom under boilers

no

Smallest distance between shell of boiler and tank top plating

Boiler placed on platform in engine room

Is the bottom of the boiler insulated

yes

Largest internal dia. of boilers

4400 m

Length

3618 m

Shell plates: Material

S. cl. Steel

Tensile strength

30.5-31.2 k/0"

Thickness

33 m

Are the shell plates welded or flanged

no

Description of riveting: circ. seams

end double rivet

long. seams

2 1/2 butt straps, 3 1/2 rivets

Diameter of rivet holes in

circ. seams

34 m

Pitch of rivets

230 m

Percentage of strength of circ. end seams

plate

65%

rivets

45.2%

Percentage of strength of circ. intermediate seam

plate

85.2%

Percentage of strength of longitudinal joint

rivets

88.5%

combined

88.1%

Working pressure of shell by Rules

206 lbs/0"

Thickness of butt straps

outer 33 m

inner 33 m

Material

S. cl. Steel

Tensile strength

29.3-29.9 k/0"

Smallest outside diameter

1075 m

Length of plain part

top 33 m

bottom 33 m

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

33 m

Thickness of plates

crown 15 m

Description of longitudinal joint

none

Working pressure of furnace by Rules

204 lbs.

End plates in steam space: Material

S. cl. Steel

Tensile strength

26.9-28.3 k/0"

Thickness

28.5 m

How are stays secured

Screwed in plates, nuts inside & outside

Working pressure by Rules

206 lbs/0"

Tube plates: Material

front S. cl. Steel

back S. cl. Steel

Tensile strength

28.2-29.7

Thickness

25 m

Mean pitch of stay tubes in nests

263.5 m

Pitch across wide water spaces

360 m

Working pressure

front 222 lbs/0"

Girders to combustion chamber tops: Material

S. cl. Steel

Tensile strength

29.3-30.5 k/0"

Depth and thickness of girder

222 lbs/0"

at centre

230 x 20 x 2 m

Length as per Rule

830 m

Distance apart

208 m

in each

3 off - 200 m

Working pressure by Rules

222 lbs/0"

Combustion chamber plates: Material

S. cl. Steel

Tensile strength

27.2-28.7 k/0"

Thickness: Sides

17 m

Back

17 m

Pitch of stays to ditto: Sides

200 x 209 m

Back

216 x 186 m

Top

200 x 208 m

Working pressure by Rules

241 lbs/0"

Front plate at bottom: Material

S. cl. Steel

Tensile strength

29.7-28.2 k/0"

Thickness

25 m

Lower back plate: Material

S. cl. Steel

Tensile strength

28.4-28.7 k/0"

Pitch of stays at wide water space

D = 480 m

Are stays fitted with nuts or riveted over

nuts inside & outside

Working Pressure

213 lbs/0"

Main stays: Material

S. cl. Steel

Tensile strength

30.7-31.8 k/0"

Diameter

At body of stay, 2 3/4"

Over threads, 3"-2 3/4"

No. of threads per inch

11

Area supported by each stay

abt. 181000 m²

Working pressure by Rules

198 lbs x 5/8"

Screw stays: Material

S. cl. Steel

Tensile strength

29.2-30.2 k/0"

Diameter

At turned off part, 1 5/8"

No. of threads per inch

11

Area supported by each stay

40276 m²

Shipping.

002736-002742-0039

Lloyd's Register
Foundation

Working pressure by Rules 246 lbs/sq. in. Are the stays drilled at the outer ends no Margin stays: Diameter 2 1/2"
 No. of threads per inch 11 Area supported by each stay 59940 sq. in. Working pressure by Rules 245 lbs/sq. in.
 Tubes: Material S. C. Steel External diameter 3" Thickness 5/16" No. of threads per inch 11
 Pitch of tubes 165 x 106 sq. in. Working pressure by Rules 250 lbs/sq. in. Manhole compensation: Size of opening in
 shell plate 425 x 525 sq. in. Section of compensating ring flanged No. of rivets and diameter of rivet holes 33 x 34 sq. in.
 Outer row rivet pitch at ends 230 sq. in. Depth of flange if manhole flanged 100 sq. in. Steam Dome: Material
 Tensile strength Thickness of shell Description of longitudinal joint
 Diameter of rivet holes Pitch of rivets Percentage of strength of joint
 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 Vertical headers filled with horizontal steel coils in the uptakes Manufacturers of Tubes Stewart - Lloyd's Ltd. Warrington
 Number of elements off each boiler Material of tubes Solid drawn Steel Internal diameter and thickness of tubes 31 sq. in. - 3.5 sq. in.
 Material of headers Solid drawn Steel Tensile strength 30.84/sq. in. Thickness 22 sq. in. 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 314 sq. in. Are the safety valves fitted with easing gear yes Working pressure as per
 Rules HEADERS: 1300 lbs/sq. in. TUBES: 380 lbs/sq. in. Pressure to which the safety valves are adjusted 200 lbs Hydraulic test pressure:
 tubes 1000 lbs/sq. in. 600 lbs/sq. in. and after assembly in place 600 lbs/sq. in. Are drain cocks or valves fitted
 to free the superheater from water where necessary yes

Have all the requirements of Sections 14 to 23 inclusive for boilers been complied with yes
 AKTIESELSKABET
 BURMEISTER & WAINSKIN-OG SKIBSBYGGERI
 Dates of Survey 22/4-23/4-28/4-1/5-2/5-6/5-12/5-16/5-28/5-29/5-31/5-4/6-5/6 1936 Manufacturers
 while building 10/11-13/11-15/11-27/11-3/12-16/12-25/12 1936 Are the approved plans of boiler and superheater forwarded herewith yes
 board vessel 5/1-6/1-11/1-12/1 1937 Total No. of visits 24

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) The above two dunking boilers
& the superheaters have been constructed and fitted on board the vessel
under special survey in accordance with the Rules, the approved plans
and the requirements contained in the Secretanys letter E dated 6/10/3
3/3-14/10-1936.

The material used in construction has been tested by Surveyors to
this Society as per certificates now produced by the builders and
the workmanship is good.

Survey Fee charged as Machinery report When applied for, ✓ 192
 Travelling Expenses (if any) £ When received, 192

J. R. Langhild Jensen.
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRI 5 FEB 1937
 Assigned See other F.E. report