

# REPORT ON BOILERS.

No. 6698.

Received at London Office

Date of writing Report 14<sup>th</sup> Decr. 1923. When handed in at Local Office

19 Port of Copenhagen

No. in Reg. Book. 40225

Survey held at Copenhagen

Date, First Survey 14<sup>th</sup> August

Last Survey 13<sup>th</sup> Novr. 1923.

(Number of Visits 8.)

Gross 4465.06

Net 2929.88

on the Steel Twin Screw Motor Vessel "Nordbo."

Tons

Gross 4465.06

Net 2929.88

Built at Copenhagen

By whom built J.S. Burmeister & Wain's Maskin-og Skibsbyggeri

Yard No. 327.

When built 1923.

Engines made at Copenhagen

By whom made J.S. Burmeister & Wain's Maskin-og Skibsbyggeri

Engine No. 949 750

When made 1923.

Boilers made at Copenhagen

By whom made J.S. Burmeister & Wain's Maskin-og Skibsbyggeri

Boiler No. "

When made 1923.

Owners Akt. Dampskibsselskabet Norden (P. Brown jun. & Co.)

Port belonging to Copenhagen.

## VERTICAL DONKEY BOILER.

Made at Copenhagen

By whom made J.S. Burmeister & Wain's Maskin-og Skibsbyggeri

Boiler No. 1761

When made 1923

Where fixed In the Motor room.

Plates:- Stromma's jernverks aktiebolag - uptakes and galloway tubes:- galloway's Ltd. Manchester.

Manufacturers of Steel Rivets:- Henze Bros.

Total Heating Surface of Boiler 100  $\square$  = 9.3 m<sup>2</sup>

Is forced draught fitted no

Coal or Oil fired oil fired.

No. and Description of Boilers One vertical cross tube.

Working pressure 7 kg/cm<sup>2</sup> 100 lbs.

Tested by hydraulic pressure to 14 kg/cm<sup>2</sup> 200 lbs./ $\square$

Date of test 11<sup>th</sup> October 1923.

No. of Certificate 438.

Area of Firegrate in each Boiler 12.5  $\square$

No. and Description of safety valves to each boiler 2 off, direct spring loaded.

Area of each set of valves per boiler

per rule 1.3

as fitted 2.40

Pressure to which they are adjusted 7 kg/cm<sup>2</sup>

Are they fitted with easing gear yes.

State whether steam from main boilers can enter the donkey boiler No main boiler.

Smallest distance between boiler or uptake and bunkers

No bunkers or woodwork

Is oil fuel carried in the double bottom under boiler yes.

Smallest distance between base of boiler and tank top plating

abt. 4 feet.

Is the base of the boiler insulated yes.

Largest internal dia. of boiler 4' 5 15/16"

Height 3200 mm = 10' 6"

Shell plates: Material S. M. Steel.

Tensile strength 28-32 Tons/ $\square$

Thickness 10 mm = 25/64"

Are the shell plates welded or flanged No.

Description of riveting: circ. seams

end lap joint single riveted.

inter. long. seams lap joint double riveted.

Dia. of rivet holes in

circ. seams 19 mm 3/4"

long. seams 19 mm 3/4"

Pitch of rivets 62 mm 2 7/8"

Percentage of strength of circ. seams

plate 57.8

rivets 51.5

of Longitudinal joint

plate 67.3

rivets 74.8

combined

Working pressure of shell by rules 9.21 kg/cm<sup>2</sup> 131 lbs/ $\square$

Thickness of butt straps

outer

inner

Shell Crown: Whether complete hemisphere, dished partial spherical, or flat Flat.

Material S. M. Steel.

Tensile strength 26-30 Tons/ $\square$

Thickness 22 mm 53/64"

Radius

Working pressure by rules 9.24 kg/cm<sup>2</sup> 131.2 lbs/ $\square$

Description of Furnace: Plain, spherical, or dished crown Plain

Material S. M. Steel.

Tensile strength 26.30 Tons/ $\square$

Thickness 13 mm 33/64"

External diameter

top 1026 mm 3' 4 13/32"

bottom 1226 mm 4' 1/4"

Length as per rule 1232 mm 5' 8 3/16"

Working pressure by rules 5.3 kg/cm<sup>2</sup> 75.4 lbs/ $\square$

Pitch of support stays circumferentially

and vertically

Are stays fitted with nuts or riveted over

Diameter of stays over thread

Radius of spherical or dished furnace crown

Working pressure by rule

Thickness of Ogee Ring

Diameter as per rule

Working pressure by rule

Combustion Chamber: Material

Tensile strength

Thickness of top plate

Radius if dished

Working pressure by rule

Thickness of back plate

Diameter if circular

Length as per rule

Pitch of stays

Are stays fitted with nuts or riveted over

Diameter of stays over thread

Working pressure of back plate by rules

Tube Plates: Material

Tensile strength

Thickness

Mean pitch of stay tubes in nests

If comprising shell, Dia. as per rule

Pitch in outer vertical rows

Dia. of tube holes FRONT

stay

plain

BACK

stay

plain

Is each alternate tube in outer vertical rows a stay tube

Working pressure by rules

front

back

Girders to combustion chamber tops: Material

Tensile strength

Depth and thickness of girder at centre

Length as per rule

Distance apart

No. and pitch of stays in each

Working pressure by rule



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Crown stays: Material *S. M. Steel.* Tensile strength *28-35 T<sub>s</sub>/□"* Diameter { at body of stay, *2"* or over threads, *2 1/4"* Working pressure by rules *131 lb/□"*

No. of threads per inch *11* Area supported by each stay *255 □"*

Screw stays: Material *✓* Tensile strength *✓* Diameter { at turned off part, *✓* or over threads, *✓* No. of threads per inch *✓*

Area supported by each stay *✓* Working pressure by rules *✓* Are the stays drilled at the outer ends *✓*

Tubes: Material *✓* External diameter { plain, *✓* stay, *✓* Thickness { *✓*

No. of threads per inch *✓* Pitch of tubes *✓* Working pressure by rules *✓*

Manhole Compensation: Size of opening in shell plate *305 x 405 m/m.* Section of compensating ring *✓* No. of rivets and diameter *✓*

of rivet holes *✓* Outer row rivet pitch at ends *✓* Depth of flange if manhole flanged *✓*

Uptake: External diameter *364 m/m.* Thickness of uptake plate *12 m/m 15/32"*

Cross Tubes: No. *3 off.* External diameters { *250 m/m.* Thickness of plates *10 m/m 25/64"*

Have all the requirements of Sections 14 to 23 inclusive for boilers been complied with *yes.*

The foregoing is a correct description,  
**AKTIESELSKABET**  
**BURMEISTER & WAINES MASKIN- OG SKIBSBYGGERI**  
*Uth. Hjem*

Dates of Survey { During progress of work in shops - *14/8, 22/8, 29/8, 1/10 - 11/10*  
 while building { During erection on board vessel - *16/10, 24/10, 13/11, 1923.*

Is the approved plan of boiler forwarded herewith (If not state date of approval.) *19/7.23.*  
 Total No. of visits *8.*

#### GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.)

The boiler has been built under Special Survey in accordance with the Rules, the approved plan and the requirements contained in the letters E dated 19/7 1923 and 29/7 1923.

The material and workmanship are of good description in every respect. The material used in the construction has been tested, as required by the Rules as per Certificates produced. -

A duplex pump 90 m/m 60 m/m 90 m/m and a feed injector has been fitted for feeding the boiler. -

*is noted on the Mach. Report.*

Survey Fee ... £ : : } When applied for, *✓* 19  
 Travelling Expenses (if any) £ : : } When received, *✓* 19

Committee's Minute  
 Assigned

FRIDAY 21 1923

*A. E. J. S. M. S. M. S.*  
 Engineer Surveyor to Lloyd's Register of Shipping.