

# REPORT ON MACHINERY.

217

No. 93

No. in Survey held at Reg. Book.

Malmö

Date, first Survey

April 7<sup>th</sup>

Last Survey

TUESDAY 18 SEPT 1883

18

on the

Steel Screw Steamer

'Brage'

368.61

Tons 498.08

409.72

Master

H. H. Meidell

Built at

Malmö (Yard No 38)

When built

1883

Engines made at

Malmö

By whom made

Stockums M&S when made

1883

Boilers made at

By whom made

Karlensborgs AB when made

1883

Registered Horse Power

65

Owners

Olof Berg

Port belonging to

Bergen (Norway)

ENGINES, &c.—

Description of Engines

Dissecting Inverted Compound 2 Cylinders

Diameter of Cylinders

20' 4 35'

Length of Stroke

24

No. of Rev. per minute

100

Point of Cut off, High Pressure

0.5

Low Pressure 0.5

Diameter of Screw shaft

6 1/2'

Diameter of Tunnel shaft

6 1/4'

Diameter of Crank shaft journals

6 1/2'

Diameter of Crank pin

6 1/2'

size of Crank webs 4 3/8 x 8'

Diameter of screw

10 feet

Pitch of screw

10' 9"

No. of blades

4

state whether moveable

fast

total surface

31.76 sq'

No. of Feed pumps

1

diameter of ditto

3'

Stroke

12"

Can one be overhauled while the other is at work

No. of Bilge pumps

1

diameter of ditto

3'

Stroke

12"

Can one be overhauled while the other is at work

Where do they pump from

Forehold, Mainhold, Afterhold & Engine room

No. of Donkey Engines

1

Size of Pumps

2 7/8' x 5 1/2'

Where do they pump from Condenser, Sea Bilges & Boilers

No. of Ballast pump

1

Size 4 1/2' x 8', do pump from Tank and Bilges

Are all the bilge suction pipes fitted with roses

yes

Are the roses always accessible

yes

Are the sluices on Engine room bulkheads always accessible

yes

No. of bilge injections

1

and sizes

2 1/2"

Are they connected to condenser, or to circulating pump

to circulating pump

How are the pumps worked

by levers from low pressure crosshead

Are all connections with the sea direct on the skin of the ship

yes

Are they Valves or Cocks

Valves and Cocks

Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates

yes

Are the discharge pipes above or below the deep water line

on the line

Are they each fitted with a discharge valve always accessible on the plating of the vessel

yes

Are the blow off cocks fitted with a spigot and brass covering plate

yes

What pipes are carried through the bunkers

none

How are they protected

Are all pipes, cocks, valves, and pumps in connection with the machinery accessible at all times

yes

Are the pipes, cocks, and valves arranged so as to prevent an unintentional connection between the sea and the bilges

yes

When were stern tube, propeller, screw shaft, and all connections examined in dry dock

On Slip August 29. 1883

Is the screw shaft tunnel watertight

yes

and fitted with a sluice door

yes

worked from Quarter deck

OILERS, &c.—of Steel

Number of Boilers

one

Description

Cylindrical multitubular with outside uptake

Working Pressure

75 lbs

Tested by hydraulic pressure to

150 lbs

Date of test

July 17<sup>th</sup> 1883

Description of superheating apparatus or steam chest

round vertical dome

Can each boiler be worked separately

—

Can the superheater be shut off and the boiler worked separately

—

No. of square feet of fire grate surface in each boiler

37.5 sq'

Description of safety valves

direct Spring loaded

No. to each boiler

2

area of each valve

10.3 sq'

Are they fitted with easing gear

yes

No. of safety valves to superheater

—

area of each valve

—

are they fitted with easing gear

—

Smallest distance between boilers and bunkers or woodwork

6 inches

Diameter of boilers

10' 9"

Length of boilers

10 3/4'

Description of riveting of shell long. seams

double butt straps

double rivetted

circum. seams lap single rivetted

Thickness of shell plates

9/16"

diameter of rivet holes

13/16"

whether punched or drilled

drilled

pitch of rivets

3 1/4" x 1 1/4"

Up of plating

7 3/4' butt

per centage of strength of longitudinal joint

75%

working pressure of shell by rules

74.87

Size of manholes in shell

17' x 13'

size of compensating rings

30" x 27" x 3/8"

No. of Furnaces in each boiler

2

outside diameter

3' 0 7/8"

length, top

7' 3"

bottom

9' 3"

Thickness of plates

Top 1 5/32" Bottom 1/2"

Description of joint

double butt strap

if rings are fitted

on bottom

greatest length between rings

7' 7"

Working pressure of furnace by the rules

94 lbs

Combustion chamber plating, thickness, sides

7/16"

back

7/16"

top

7/16"

Pitch of stays to ditto

sides

7 1/2" x 7 1/2"

back

7 1/2" x 7 1/2"

top

7 1/2" x 7 1/2"

Are stays fitted with nuts or riveted heads

riveted heads

working pressure of plating by rules

78 lb

Diameter of stays at smallest part

1 1/4"

working pressure of ditto by rules

125 lb

Double plates in steam space, thickness

5/8" & doubled at stays

pitch of stays to ditto

14 1/2" x 15"

how stays are secured Nuts on doubling plate

Working pressure by rules

diameter of stays at smallest part

2 1/4"

working pressure by rules

125 lbs

Front plates at bottom, thickness

9/16"

Back plates, thickness

1/2" & 9/16"

greatest pitch of stays 10' x 7 1/2" working pressure by rules

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Diameter of tubes  $3\frac{3}{4}$ ' pitch of tubes  $5' \times 5'$  thickness of tube plates, front  $\frac{5}{8}$ ' back  $\frac{5}{8}$ '  
 How stayed *Stay tubes* pitch of stays *tubes*  $15' \times 15'$  width of water spaces  $5'$   
 Diameter of ~~Superheater or~~ Steam chest  $3' 10"$  length *height*  $3'$   
 Thickness of plates  $\frac{7}{16}$ ' description of longitudinal joint *double rivetted* diameter of rivet holes  $13/16'$  pitch of rivets  $3\frac{3}{4}' \times 1\frac{1}{4}'$   
 Working pressure of shell by rules \_\_\_\_\_ Diameter of flue \_\_\_\_\_ thickness of plates \_\_\_\_\_  
 If stiffened with rings \_\_\_\_\_ distance between rings \_\_\_\_\_ Working pressure by rules \_\_\_\_\_  
 End plates of ~~superheater, or~~ steam chest; thickness  $9/16'$  How stayed *by four 2" stays to shell of boiler*  
 Superheater or steam chest; how connected to boiler *rivetted on*  
**DONKEY BOILER** *Steel* Description *Vertical with Galloway tubes*  
 Made at *Malmo* By whom made *Hockums M W Attebol* when made *1883*  
 Where fixed *in Stockholm* working pressure  $75$  lb Tested by hydraulic pressure to  $150$  lb No. of Certificate \_\_\_\_\_  
 Fire grate area  $70'$  Description of safety valves *lever weighted* No. of safety valves *one* area of each  $5$  inch  
 If fitted with easing gear *no* If steam from main boilers can enter the donkey boiler *yes*  
 Diameter of donkey boiler  $4' 0"$  length  $8' 6"$  description of riveting *double rivetted lap*  
 thickness of shell plates  $\frac{7}{16}$ ' diameter of rivet holes  $\frac{3}{4}$ ' whether punched or drilled *drilled*  
 pitch of rivets  $3' \times 1\frac{1}{4}'$  lap of plating  $3\frac{7}{8}'$  per centage of strength of joint  $53$   
 thickness of crown plates  $\frac{5}{8}$ ' stayed by *flue and angle iron*  
 Diameter of furnace, top  $3' 2"$  bottom  $3' 2"$  length of furnace  $4' 3"$   
 thickness of plates  $\frac{7}{16}$ ' description of joint *double rivetted lap*  
 thickness of furnace crown plates  $\frac{5}{8}$ ' stayed by *flue*  
 Working pressure of shell by rules  $103$  lb working pressure of furnace by rules  $103$  lbs  
 diameter of uptake  $14'$  thickness of plates  $\frac{3}{8}$ ' thickness of water tubes *Galloway tubes*  
*All dimensions are Swedish measure.*  
 The foregoing is a correct description,  
*Hjalmar Nyplura* Manufacturer.

**General Remarks** (State quality of workmanship, opinions as to class, &c.)

In accordance with the requirements of the Rules for Special Survey, I have examined the Materials and Workmanship from the commencement of the work until the final test of Machinery under Steam, and have found the Materials good and the Workmanship satisfactory in every respect. The Engines are of the same Type as the S.S. Bygds, my Report No. 71. - The Crankshaft, Intermediate Shaft and Propellershaft are forged at Motala Work and are most carefully examined by me before they were put in turning lathe when rough turned, and when finished, and found to be sound and good, as well as the Piston rods, Connecting rods, Bedplate holding down bolts and other principal forgings.

All Bearing brasses are of good materials, satisfactory dimensions and well finished. All Iron castings are sound and good and of sufficient thickness. All Sea connections are of good material, sufficient dimensions, well finished and properly fastened to Ships skin in accordance with the Rules.

The Steel plates for the Boilers are manufactured at Motala Work and inspected there by the Society's Surveyor Mr. G. A. Möller, as testified by the annexed certificates, and I have examined the Stays and Rivets as well as the Plates at different stages during the making of the Boilers and found the Material sound and good, the Scantlings according to the above specification and the Workmanship satisfactory. Please see Continuation

The amount of Entry Fee £  $1 : 0 : 0$  received by me,

Special .. .. £  $11 : 17 : 0$

Certificate (if required) .. £  $0 : 2 : 6$  Sept 1883

To be sent as per margin.

(Travelling Expenses, if any, £  $5 : 0 : 0$ .)

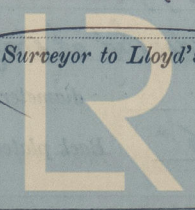
Committee's Minute

FRIDAY 23 SEPT 1883

18

Engineer Surveyor to Lloyd's Register of British & Foreign Shipping

*P. Fred. Stender*



Lloyd's Register Foundation



# Report of Survey for Repairs of Engines and Boilers.

Continuation to

No. 93

No. in Survey held at  
Reg. Book.

(Received at London Office, )

Date, first Survey

Last Survey

188

on the Machinery of the

Steel Screw Steamer 'Brage'

(Number of Visits

Year

Tonnage, Gross

Built at

When built

Ditto, Net

Owners

Port belonging to

Diameter of Cylinder

Engines made by

When made

Length of Stroke

Boilers made by

When made

Pressure of Steam

If Surveyed Afloat or in Dry Dock

(State name of Dock.)

Classed

Years assigned.

Character in Register Book.

Registered Horse Power

Last Survey No.

Port

## Particulars of Repairs and Examination

(State cause of Repairs.)

## Continuation of Report.

1883 the 17<sup>th</sup> of July the Main Boiler and the Donkey Boiler were tested by hydraulic pressure to 150 lbs per square inch, and I found by gauges there was no sign of weakness and the Boilers were tight and sound in every respect at that pressure, as stated by the certificates of Test enclosed, which I beg to be signed, if it may please the honourable Committee to grant a Certificate for Boilers and Machinery. The Safety valves are correct set and tested to the working pressure 75 lbs per square inch. Steam gauges correct. The Tracings of Boilers are annexed.

The Spare gear required by Rules and necessary Tools are supplied.

1883. the 7<sup>th</sup> of September Steam was up to full pressure and the Engines going. I observed the Engines to work very well without any warm bearing and no defect was found at the Boilers.

## General Observations, Opinion, and Recommendation:—

The Engines and Boilers of this new Steamer are in accordance with the Rules, and now in good efficient and safe working condition, so I would respectfully submit the Ship when classed, eligible to have the Record of L.M.C. 9. 83. in the Register Book and a corresponding Certificate.

try or Registering Fee... £

vey Fee (per Section 28) ... £

Certificate (if required) ... £

to be sent as per margin.

avelling Expenses, if any, £

received by me,

188

P. M. A. M. A. L. A. L.

Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

FRIDAY 23 SEPT 1883

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Committee's Minute

signed



Lloyd's Register  
Foundation



It is submitted that this vessel is eligible to have the notification + Am 6 q. 83 recorded.

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83  
—  
9  
—  
8  
—

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