

# REPORT ON MACHINERY.

No. 99

No. in Survey held at

Reg. Book.

on the

(No. 7.)

Date, first Survey

28<sup>th</sup> April 1884

Received at London Office

MONDAY 8 DEC 1884

Last Survey

1<sup>st</sup> December 1884

(Number of Vests 36)

Tons

1225.97

When built

1884

when made

1884

when made

1884

Owners

J. G. Halvorsen, and others

Port belonging to

Bergen

## ENGINES, &c.—

Description of Engines

Horizontal, direct acting, surface condensing, compound.

Diameter of Cylinders

34 $\frac{1}{2}$  x 63"

Length of Stroke

39

No. of Rev. per minute

14

Point of Cut off, High Pressure

$\frac{1}{2}$

Low Pressure

$\frac{2}{3}$

Diameter of Screw shaft

10 $\frac{3}{4}$ "

Diam. of Tunnel shaft

10 $\frac{1}{2}$ "

Diam. of Crank shaft journals

10 $\frac{1}{2}$ "

Diam. of Crank pin

12 $\frac{1}{2}$ "

size of Crank webs

13 x 6 $\frac{1}{4}$ "

Diameter of screw

14' 8"

Pitch of screw

17' 3"

No. of blades

4

state whether moveable

yes

total surface

650"

No. of Feed pumps

two

diameter of ditto

3 $\frac{3}{4}$ "

Stroke

2' 3 $\frac{1}{2}$ "

Can one be overhauled while the other is at work

yes

No. of Bilge pumps

two

diameter of ditto

3 $\frac{3}{4}$ "

Stroke

2' 3 $\frac{1}{2}$ "

Can one be overhauled while the other is at work

yes

Where do they pump from

from each compartment

No. of Donkey Engines

two

Size of Pumps

7 $\frac{3}{4}$  x 9" x 4 $\frac{1}{2}$  x 7"

Where do they pump from

ballast tanks, bilges,

each compartment, into boilers and on deck.

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

one

and sizes

5 $\frac{3}{4}$ "

Are they connected to condenser, or to circulating pump

Circulating

How are the pumps worked

by levers

from low pressure condenser

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

below

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

How are they protected

none

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

yes

and fitted with a sluice door

yes

worked from

main deck

## BOILERS, &c.—

Number of Boilers

Two

Description circular single ended, furnaces

three

Whether Steel or Iron

Iron

Working Pressure

eighty to

Tested by hydraulic pressure to

160 lbs. sq. in.

Date of test

8<sup>th</sup> October 1884.

Description of superheating apparatus or steam chest

neck flanged steam chest, rivetted to top of boilers

Can each boiler be worked separately

yes

Can the superheater be shut off and the boiler worked separately

yes

Area of square feet of fire grate surface in each boiler

49.5

Description of safety valves

spring safety

No. to each boiler

two

Area of each valve

15.033

Are they fitted with easing gear

yes

No. of safety valves to superheater

—

area of each valve

—

Smallest distance between boilers and bunkers or woodwork

10' 5"

description of riveting of shell long. seams double riv. butt strap circum. seams double riv. lap

18 inches

Diameter of boilers

12' 11 $\frac{1}{2}$ "

Whether punched or drilled

drilled

pitch of rivets

5 $\frac{1}{2}$ "

Lap of plating

—

Working pressure of shell by rules

78 $\frac{1}{2}$

size of manholes in shell

15" x 11"

Compensating rings

neck flanged steam down, and 2 $\frac{1}{4}$  x 1"

No. of Furnaces in each boiler

three

Diameter

3' 1"

length, top

6' 9"

bottom

9' 6"

thickness of plates

ton 1 $\frac{1}{2}$ "

description of joint

single lap

if rings are fitted at bottom

yes

Length between rings

6' 6"

working pressure of furnace by the rules

91

combustion chamber plating, thickness, sides

$\frac{7}{16}$ "

back

$\frac{7}{16}$ "

top

$\frac{7}{16}$ "

Stays to ditto, sides

7 $\frac{1}{4}$ "

back

7 $\frac{1}{4}$ "

top

2 feet

radius

If stays are fitted with nuts or riveted heads

rivetted heads

working pressure of plating by

rules

113

end plates in steam space, thickness

$\frac{3}{4}$ "

Diameter of stays at smallest part

1 $\frac{1}{8}$ "

working pressure of ditto by rules

84

how stays are secured

and nuts

working pressure by rules

82.1

diameter of stays at

top

Stays to ditto

16 $\frac{3}{4}$ "

working pressure by rules

85

Front plates at bottom, thickness

$\frac{3}{4}$ "

Back plates, thickness

$\frac{3}{4}$ "

thickness of tube

$\frac{3}{4}$ "

Part

2"

working pressure by rules

84

Diameter of tubes

3 $\frac{1}{4}$ "

pitch of tubes

4 $\frac{3}{8}$ "

width of water spaces

4 $\frac{1}{2}$ " to 6 $\frac{1}{2}$ "

Working pressure of shell by rules

130

diameter of flue

—

thickness of plates

—

If stiffened with rings

—

Superheater or steam chest; how connected to boiler

rivetted to top of boilers

Superheater or steam chest

3' 0"

length

3' 6"

thickness of plates

$\frac{1}{2}$ "

description of longitudinal joint

double lap

diam. of rivet holes

13 $\frac{1}{16}$ "

Working pressure of shell by rules

130

diameter of flue

—

thickness of plates

—

If stiffened with rings

—

Superheater or steam chest; how connected to boiler

rivetted to top of boilers

Working pressure by rules

—

end plates of superheater, or steam chest; thickness

7 $\frac{1}{8}$ "

how stayed

Egg ended

Superheater or steam chest; how connected to boiler

—

rivetted to top of boilers

—

Working pressure by rules

—

end plates of superheater, or steam chest; thickness

7 $\frac{1}{8}$ "

how stayed

Egg ended

Superheater or steam chest; how connected to boiler

—

rivetted to top of boilers

—

Working pressure by rules

—

end plates of superheater, or steam chest; thickness

7 $\frac{1}{8}$ "

how stayed

Egg ended

Superheater or steam chest; how connected to boiler

—

rivetted to top of boilers

—



**DONKEY BOILER—** Description *Upright circular cross tubes*

Made at *Gateshead* by whom made *Clark Chapman & Co* when made *1884* where fixed *Stoke hole*  
 Working pressure *80 lb* tested by hydraulic pressure to *160 lb* No. of Certificate *1722* fire grate area *18.9 sq* description of safety  
 valves *spring* No. of safety valves *one* area of each *11.044* if fitted with easing gear *yes* if steam from main boilers can  
 enter the donkey boiler *no* diameter of donkey boiler \_\_\_\_\_ length \_\_\_\_\_ description of riveting \_\_\_\_\_  
 Thickness of shell plates \_\_\_\_\_ diameter of rivet holes \_\_\_\_\_ whether punched or drilled \_\_\_\_\_ pitch of rivets \_\_\_\_\_ lap of plating \_\_\_\_\_  
 per centage of strength of joint \_\_\_\_\_ thickness of crown plates \_\_\_\_\_ stayed by \_\_\_\_\_  
 Diameter of furnace, top \_\_\_\_\_ bottom \_\_\_\_\_ length of furnace \_\_\_\_\_ thickness of plates \_\_\_\_\_ description of joint \_\_\_\_\_  
 Thickness of furnace crown plates \_\_\_\_\_ stayed by \_\_\_\_\_ working pressure of shell by rules \_\_\_\_\_  
 Working pressure of furnace by rules \_\_\_\_\_ diameter of uptake \_\_\_\_\_ thickness of plates \_\_\_\_\_ thickness of water tubes \_\_\_\_\_

**SPARE GEAR.** State the articles supplied:—

Mark on Donkey boiler

*Two connecting rod top-end bolts and nuts, 2 connecting rod bottom-end bolts and nuts, 2 main bearing bolts, One set coupling bolts, One set feed and ridge pump valves, One set of piston springs, - A good quantity of assorted bolts and nuts and brass of various sizes.*

*N<sup>o</sup> 1722  
 Lloyds Test  
 160 lb B.H  
 24.8.84.*

The foregoing is a correct description,

Manufacturer.

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

*The workmanship and material of Engines and Boilers is good. - After the Engines was started the first time, two cracks was noticed on the back plain half of Condenser. - This cracks which runs fore & aft in a length of about 10" is in my opinion caused by contraction. - After the cracks was stopped by drilling holes at the ends of them, a large 1/2" plate was very carefully fitted over the back of condenser, and securely fastened to same with 5/8" muntz metal screws. - As the cracks went through the end flange of Condenser a solid wrought iron frame 1" thick was fitted and securely bolted on to the flange. - The Condenser was then tested and found perfectly tight and strong. - The Engines worked very well on the Trial trip. I set the Safety valves to 80 - eighty - lb working pressure and they worked well. -*

*It is my opinion that the Engines and Boilers is this day the 1<sup>st</sup> of December 1884 in a good safe working condition eligible to obtain the Mark + LMC in the Register Book*

*that this  
 amount of £28.70  
 was not  
 recorded  
 12.8.84  
 + recorded  
 12.8.84*

The amount of Entry Fee .. £ 2 : 0 : 0 received by me,  
 Special .. .. £ 24 : 0 : 0  
 Donkey Boiler Fee .. .. £ 2 : 2 : 0 } £ 28.70  
 Certificate (if required) .. £ 0 : 5 : 0 21/11 1884  
 To be sent as per margin.

(Travelling Expenses, if any, £ \_\_\_\_\_)

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

Committee's Minute

TUESDAY 9 DEC 1884

*+ J.M.C.*

BGN1105/214



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