

REPORT ON MACHINERY.

#.55

No. 9.

No. in Survey held at
Reg. Book.

Bergen

Date, first Survey

8th Sept

Last Survey

14th Decr 1881

(Received in London Office 11/1/82.18)

on the Machinery & Boilers of the Iron Screw Steamer "Victoria"

Tons

Master J. A. Münster

Built at Bergen

When built 1881

Engines made at

Bergen

By whom made

Bergens mkt. Værksted

when made

By whom made

when made 1881

Registered Horse Power

60

Owners

M. Aug. Schjelderup, C. Sundt, J. G. Gade & others

Port belonging to Bergen

ENGINES, &c.—

Description of Engines

Inverted, direct acting, compound engines with two cylinders and surface condenser

Diameter of Cylinders

20 1/2" x 39"

Length of Stroke

27"

No. of Rev. per minute

89

Point of Cut off, High Pressure

at 3/4 of stroke

Diameter of Screw shaft

6 7/8"

Diameter of Tunnel shaft

6 7/8"

Diameter of Crank shaft journals

6 7/8"

Diameter of Crank pin

6 7/8"

size of Crank webs 8 1/8" x 5"

Diameter of screw

10 1/2"

Pitch of screw

12 1/2"

No. of blades

4

state whether moveable

no

total surface 38 square feet

No. of Feed pumps

one

diameter of ditto

3 1/2"

Stroke

12 1/2"

Can one be overhauled while the other is at work

~

No. of Bilge pumps

one

diameter of ditto

3 1/2"

Stroke

12 1/2"

Can one be overhauled while the other is at work

~

Where do they pump from

from each compartment

No. of Donkey Engines

one

Size of Pumps

4 1/2" diam, 5" stroke

Where do they pump from

from ballast tanks & from each

compartment, also from sea for supplying the boiler with water and deliver water 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

4 1/2" diam

Are they connected to condenser, or to circulating pump

To circulating pump

How are the pumps worked

all pumps are worked from levers connected to crosshead of low pressure engine

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

yes

Are they Valves or Cocks

screw valves or 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

above

Are they 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

Are they 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

examined on the stock

Is the screw shaft tunnel watertight

yes

and fitted with a sluice door

yes

worked from

main deck

BOILERS, &c.—

Number of Boilers

one

Description

cylindrical tubular boiler with two circular furnaces

Working Pressure

65 lbs per sq. inch

Tested by hydraulic pressure to

130 lbs per sq. inch

Date of test

October 21st 1881

Description of superheating apparatus or steam chest

no superheating apparatus, steam chest

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

33

Description of safety valves

spring safety valves

No. to each boiler

two

area of each valve

9 1/2 sq. inch

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

8" between boiler and bunker, 24" between boiler and deck

Diameter of boiler

10 1/2"

Length of boiler

10 1/2"

Description of riveting of shell long. seams

doub. chain riveting

circum. seams

doub. chain riveting

Thickness of shell plates

3/4"

diameter of rivet holes

1 1/8"

whether punched or drilled

drilled

in long. seams

pitch of rivets

3"

in circum.

3 1/8" in long. seams

3" in circum.

Thickness of plating

6" x 5 1/2"

per centage of strength of longitudinal joint

68

working pressure of shell by rules

72 lbs per sq. inch

No. of manholes in shell

14" x 11"

inside steam dam

size of compensating ring

round

manhole in top of steam dam

3 1/2" x 1 1/8"

No. of Furnaces in each boiler

two

outside diameter

3 1/2"

effective length, top

7 1/2"

bottom

9 1/2"

Thickness of plates

Top 1/16" bottom 1/16"

Description of joint

single riveted

if rings are fitted

~

greatest length between rings

~

Working pressure of furnace by the rules

66 lbs per sq. inch

Combustion chamber plating, thickness, sides

1/2"

back

1/2"

top

1/2"

Thickness of stays to ditto

sides

8 1/2"

back

9 1/2" x 9"

top

9 1/2" x 9"

working pressure of plating by rules

75 lbs per sq. inch

Diameter of stays at smallest part

1 1/8"

working pressure of ditto by rules

70 lbs per sq. inch

pitch of stays to ditto

16" x 17 1/4"

how stays are secured

with doub. nuts and washers

working pressure by rules

68 lbs per sq. inch

thick plates at bottom, thickness

1/16"

Back plates, thickness

1/16"

greatest pitch of stays

9 1/2" x 9"

working pressure by rules

141 lbs per sq. inch

Diameter of tubes $3\frac{1}{2}$ " outside pitch of tubes $4\frac{3}{4}$ " thickness of tube plates, front $\frac{1}{16}$ " back $\frac{3}{4}$ "
 How stayed by tubes $\frac{1}{4}$ " thick pitch of stays $14\frac{1}{4}$ " width of water spaces from $3\frac{1}{2}$ " to 6" between round fire bars
 Diameter of Superheater or Steam chest 4'0" length 4'0"
 Thickness of plates $\frac{1}{2}$ " description of longitudinal joint doub. chain riv. diameter of rivet holes $\frac{13}{16}$ " pitch of rivets $2\frac{7}{8}$ "
 Working pressure of shell by rules 105 lbs per sq. inch 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 $\frac{7}{8}$ " How stayed by 4 stays $1\frac{1}{2}$ " diam
 Superheater or steam chest; how connected to boiler flanged and riveted to top of boiler
DONKEY BOILER— Description upright circular boiler with two cross tubes
 Made at Bergen By whom made Bergens mek. Værksted when made 1881
 Where fixed in stoke hole working pressure 50 lbs per sq. inch Tested by hydraulic pressure to 50 lbs per sq. inch No. of Certificate
 Fire grate area $4\frac{3}{4}$ sq. feet Description of safety valves spring safety valve No. of safety valves one area of each 3 sq. inches
 If fitted with easing gear yes If steam from main boilers can enter the donkey boiler by opening the 2 steam stop valves on connection pipe between both boilers
 Diameter of donkey boiler 3'11" inside length 3'11" description of riveting doub. chain riveting
 thickness of shell plates $\frac{7}{16}$ " diameter of rivet holes $\frac{13}{16}$ " whether punched or drilled punched
 pitch of rivets $3\frac{3}{16}$ " lap of plating $4\frac{1}{2}$ " per centage of strength of joint 74
 thickness of crown plates $\frac{1}{2}$ " stayed by ~
 Diameter of furnace, top 3'2 $\frac{3}{4}$ " outside bottom 3'4 $\frac{3}{4}$ " outside length of furnace total 4'10" - effective 3'8"
 thickness of plates $\frac{3}{8}$ " description of joint single riveter
 thickness of furnace crown plates $\frac{3}{8}$ " stayed by ~
 Working pressure of shell by rules 106 lbs per sq. inch working pressure of furnace by rules 86 lbs per sq. inch
 diameter of uptake 10" inside thickness of plates $\frac{3}{8}$ " thickness of water tubes $\frac{7}{16}$ "

The foregoing is a correct description,

Bergens mekaniske Værksted.

Manufacturer.

B. Concheron

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

On the "Victoria" I have held 10 Surveys, and have found the Workmanship first class; the Material is also of the best, but on the cylinders the casting has been a little faulty, as a very small leakage could be observed under the bottom of cylinders when water pressure was on. The strength of the cylinders is to the best of my opinion in no manner affected. - On the Trial trip the Machinery worked to entire satisfaction, the boiler was perfectly tight, and the safety valves was set by me to 65 lbs to the sq inch. It is my opinion that the Machinery and Boilers is in a first class safe working condition.

This submitted that
 the material should be
 have the material
 recorded J.M. 11/1/82

Donkey Boiler Surveys £ 2 - 2 - 0

Certificate " 0 - 2 - 6

The amount of Entry Fee .. £ 2 : 0 : 0 received by me,

Special .. £ 9 : 0 : 0

Certificate (if required) .. £ 0 : 2 : 6. 21st Decr 1881

To be sent as per margin.

(Travelling Expenses, if any, £ 1 - 0 - 0)

Committee's Minute

Friday, January 13th, 1882.

+ Lloyd's Mel

W. J. J. J.

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