

REPORT ON MACHINERY.

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No. 9.

No. in Survey held at Reg. Book.

Bergen

Date, first Survey

8th Septbr

Last Survey

14th Decbr 1881

(Received in London Office 11/1/82)

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

Tons

Master F. J. Minter

Built at Bergen

When built 1881

Engines made at Bergen

By whom made

Bergens met. Værksted

when made

1881

Boilers made at Bergen

By whom made

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 (Low 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' 2" Pitch of screw 12' 0" 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 1/4" Can one be overhauled while the other is at work ~

No. of Bilge pumps one diameter of ditto 3 1/2" Stroke 12 1/4" 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 woodcork 8" between boiler and bunker, 24" between boiler and deck

Diameter of boiler 10' 6" Length of boiler 10' 0" 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 1/16" in long seams whether punched or drilled drilled in long seams pitch of rivets { 3 1/16" 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 dome size of compensating ring round manhole in top of steam dome 3 1/2" x 1 1/8"

No. of Furnaces in each boiler two outside diameter 3' 0" (effective length, top 7' 2" bottom 9' 0"

Thickness of plates Top 7/16" bottom 1/2" description of joint single riveted if rings are fitted ~ greatest length between rings ~

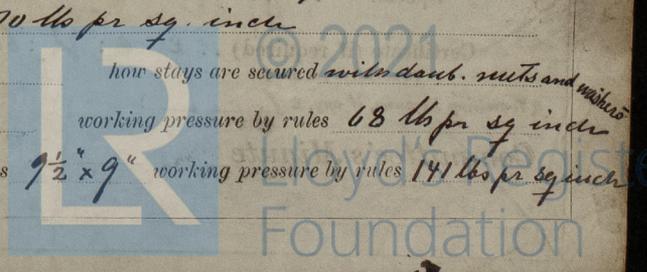
Working pressure of furnace by the rules 66 lbs per sq. inch

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

Are stays fitted with nuts or riveted heads with riveted heads 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



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 boxes
 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 $105\frac{1}{2}$ 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. inch*
 If fitted with easing gear *yes* If steam from main boilers can enter the donkey boiler *by opening the 2" steam stop valve 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 riveted*
 thickness of furnace crown plates $\frac{3}{8}$ " stayed by ~
 Working pressure of shell by rules $106\frac{1}{2}$ 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. Coucheron.

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 measurements should be recorded
M. J. 1/11/82

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 £ 14 - 7 - 0
 Certificate (if required) .. £ 0 : 2 : 6 21st Decr 1881
 To be sent as per margin.
 (Travelling Expenses, if any, £ 1 - 0 - 0)

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

Committee's Minute Friday, January 13th, 1882.

Lloyd's