

REPORT ON MACHINERY.

No. 2047
SAT. SEP. 27. 1913

Port of PHILADELPHIA.

Received at London Office

19

No. in Survey held at

PHILADELPHIA.

Date, first Survey 10.2.13.

Last Survey Aug 29-1913

Reg. Book.

485 on the

S.S. SANTA CLARA

(Number of Visits 39)

Gross 630982

Net 402617

Master N.T. Crossley Built at PHILADELPHIA.

By whom built The Wm. Hamp & Sons S.E.B.C. When built 1913-8

Engines made at PHILADELPHIA.

By whom made The Wm. Hamp & Sons S.E.B.C. when made 1913-8

Boilers made at PHILADELPHIA.

By whom made do when made 1913-8

Registered Horse Power

Owners Atlantic Pacific S.S. Co

Port belonging to New York

Nom. Horse Power as per Section 28 611

Is Refrigerating Machinery fitted for cargo purposes

Is Electric Light fitted

ENGINES, &c.—Description of Engines

Quadruple

No. of Cylinders 4

No. of Cranks 4

Dia. of Cylinders 25 1/2 x 34 5/8 x 22 1/2 x 76

Length of Stroke 54

Revs. per minute 70

Dia. of Screw shaft

as per rule 15 1/2

Material of screw shaft

Is the screw shaft fitted with a continuous liner the whole length of the stern tube

Yes

Is the after end of the liner made water tight

Yes

the propeller boss

Yes

If the liner is in more than one length are the joints burned

Yes

If the liner does not fit tightly at the part

Yes

between the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive

If two

ners are fitted, is the shaft lapped or protected between the liners

Dia. of Tunnel shaft

as per rule 14 1/2

Dia. of Crank shaft journals

as per rule 15 1/2

Dia. of Crank pin 15 1/2

Size of Crank webs 10 1/2 x 24

Dia. of thrust shaft under

ollars 15 1/4

Dia. of screw 18 1/8

Pitch of Screw 18 1/8

No. of Blades 4

State whether moveable

Yes

Total surface

87 ft

No. of Feed pumps 3

independent

Diameter of ditto 2 x 8

Stroke 24

Can one be overhauled while the other is at work

Yes

No. of Bilge pumps 2

Diameter of ditto 4 1/2

Stroke 27

Can one be overhauled while the other is at work

Yes

No. of Donkey Engines 2

Sizes of Pumps 7 1/2 x 10 1/4 x 10 x 12 x 8 x 2 1/4

No. and size of Suctions connected to both Bilge and Donkey pumps

In Holds, &c. No 1 hold 4-3 1/2

No 2 hold 4-3 1/2

No 5-4-3 1/2

No 6 hold 2-3 1/2

Lunnet well 1-3 1/2

A. Peak 1-3 1/2

No. of Bilge Injections 1

sizes 10

Connected to condenser, or to circulating pump

As a separate Donkey Suction fitted in Engine room & size

Are all the bilge suction pipes fitted with roses

Yes

Are the roses in Engine room always accessible

Yes

Are the sluices on Engine room bulkheads always accessible

Yes

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

Yes

Are they Valves or Cocks

Yes

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 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

oil

bilge slush pipes

How are they protected

Are all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times

Yes

Are the Bilge Suction Pipes, Cocks, and Valves arranged so as to prevent any communication between the sea and the bilges

Yes

Dates of examination of completion of fitting of Sea Connections

2.6.13

of Stern Tube

2.6.13

Screw shaft and Propeller

2.6.13

Is the Screw Shaft Tunnel watertight

Yes

Is it fitted with a watertight door

Yes

worked from

Upper deck

BOILERS, &c.—(Letter for record)

S

Manufacturers of Steel

D. Colville & Son, Scotland

Work 13 No. U.S.A.

Total Heating Surface of Boilers

8446 ft

Is Forced Draft fitted

Yes

No. and Description of Boilers

3 Single ended

horizontal

Working Pressure

223 lb

Can each boiler be worked separately

Yes

Area of fire grate in each boiler

71.5 ft

No. and Description of Safety Valves to

each boiler

2 Direct Spring

Area of each valve

12.56

Smallest distance between boilers or uptakes and bunkers

on woodwork

7.0

Mean dia. of boilers

15.776

Length

2.42

Material of shell plates

Steel

Thickness

1/16

Range of tensile strength

29.32

Are the shell plates welded or flanged

No

Descrip. of riveting: cir. seams

lap, a.T.

mg. seams

Diameter of rivet holes in long. seams

1/16

Pitch of rivets

8 7/8

Lap of plates or width of butt straps

21 3/4

Percentage of strength of longitudinal joint

rivets 95.0

plate 82.4

Working pressure of shell by rules

241 lb

Size of manhole in shell

end 16 x 12

Material of Front plates at bottom

Steel

Size of compensating ring

flange

No. and Description of Furnaces in each boiler

4 Morrison

Material

Steel

Outside diameter

43 1/4

Length of plain part

top

Thickness of plates

crown 5

Description of longitudinal joint

welded

No. of strengthening rings

none

Length of plain part

Working pressure of furnace by the rules

232 lb

Combustion chamber plates: Material

Steel

Thickness: Sides

3/4

Back

3/4

Top

Pitch of stays to ditto: Sides

7 1/2

Back

7 1/2

Top

7 1/2

If stays are fitted with nuts or riveted heads

nuts

Working pressure by rules

Material of stays

Steel

Diameter at smallest part

1 1/2

Area supported by each stay

52.5

Working pressure by rules

231 lb

End plates in steam space:

Material

Steel

Thickness

1/8

Pitch of stays

8 x 18

How are stays secured

N. V.

Working pressure by rules

Diameter at smallest part

3 1/4

Area supported by each stay

324

Working pressure by rules

266 lb

Material of Front plates at bottom

Steel

Thickness

Material of Lower back plate

Steel

Thickness

1/8

Greatest pitch of stays

13.5 x 7.5

Working pressure of plate by rules

367 lb

Diameter of tubes

Pitch of tubes

4 x 4

Material of tube plates

Steel

Thickness: Front

1/16

Back

8

Mean pitch of stays

Pitch across wide water spaces

14

Working pressures by rules

235 lb

Girders to Chamber tops: Material

Steel

Depth and

thickness of girder at centre

10 x 1 1/8

Length as per rule

36 1/2

Distance apart

7 1/2

Number and pitch of stays in each

4-7

Working pressure by rules

242 lb

Superheater or Steam chest; how connected to boiler

Can the superheater be shut off and the boiler worked

separately

Diameter

Length

Thickness of shell plates

Material

Description of longitudinal joint

Diam. of rivet

holes

Pitch of rivets

Working pressure of shell by rules

Diameter of flue

Material of flue plates

Thickness

How stayed

If stiffened with rings

Distance between rings

Working pressure by rules

End plates: Thickness

How stayed

Working pressure of end plates

Area of safety valves to superheater

Are they fitted with easing gear

Yes

010605-010614-0253

Lloyd's Register

Foundation

VERTICAL DONKEY BOILER—

Manufacturers of Steel *Worth Bros*

No. *1* Description *Vertical multitubular*
 Made at *Choudsbury* By whom made *International Boiler Works* When made *1913* Where fixed *Main deck*
 Working pressure *100 lb* tested by hydraulic pressure to *150 lb* Date of test *26.3.13* No. of Certificate *45* Fire grate area *3.14 sq ft* Description of Safety
 Valves *1 direct spring* No. of Safety Valves *1* Area of each *1.77 sq ft* Pressure to which they are adjusted *100 lb* Date of adjustment *28.8.13*
 If fitted with easing gear *Yes* If steam from main boilers can enter the donkey boiler *no* Inside Dia. of donkey boiler *29 1/2"* Length *6' 0"*
 Material of shell plates *Steel* Thickness *5/16"* Range of tensile strength *28-32* Descrip. of riveting long. seams *Lap S.T.*
 Dia. of rivet holes *3/16"* Whether punched or drilled *drill* Pitch of rivets *2"* Lap of plating *2 1/2"* Per centage of strength of joint *70*
 Working pressure of shell by rules *125 lb* Thickness of shell crown plates *7/16"* Radius of do. *flat* No. of stays to do. *tubes* Dia. of stays *1"*
 Diameter of furnace Top *24 3/8"* Bottom *—* Length of furnace *21 1/2"* Thickness of furnace plates *5/16"* Description of joint *Lap S.T.*
 Working pressure of furnace by rules *121 lb* Thickness of furnace crown plates *3/8"* Stayed by *tubes all beaded*
 Diameter of uptake *tubes 2"* Thickness of uptake plates *—* Thickness of water tubes *0.053 in.* Dates of survey *March 12. 26. 1913*

SPARE GEAR. State the articles supplied:— *1 Tail shaft. 2 propeller blades. 2 sets coupling bolts. 6 propeller studs. 1 Valve spindle. 1 Eccentric rod. 1 Thrust shoe. 1 Impeller shaft. A complete set of main and feed bilge pumps valves & fittings also a quantity of iron bolts.*

The foregoing is a correct description,
 THE WM. CRAMP & SONS SHIP & ENGINE BUILDING CO.

Wm. Cramp is Manufacturer. *main engine & boilers.*

Dates of Survey while building { During progress of work in shops— *Feb 10. 21. 27. Mar 10. 18. 27. April 9. 14. 17. 23. 29. May 8. 12. 20. 22. June 2. 5. 1913.*
 { During erection on board vessel— *June 10. 13. 16. 20. 26. 30. July 7. 9. 11. 14. 18. 23. 29. Aug 11. 14. 15. 16. 21. 22. 26. 28. 29. 1913*
 Total No. of visits *39*

Is the approved plan of main boiler forwarded herewith *Yes*
 " " " donkey " " *Yes*

Dates of Examination of principal parts—Cylinders *29.4.13* Slides *29.4.13* Covers *29.4.13* Pistons *26.6.13* Rods *18.4.13*
 Connecting rods *18.4.13* Crank shaft *2.5.13* Thrust shaft *9.4.13* Tunnel shafts *9.4.13* Screw shaft *12.5.13* Propeller *2.6.13*
 Stern tube *2.6.13* Steam pipes tested *14.8.13* Engine and boiler seatings *20.6.13* Engines holding down bolts *23.7.13*
 Completion of pumping arrangements *26.8.13* Boilers fixed *14.7.13* Engines tried under steam *28.8.13*
 Main boiler safety valves adjusted *28.8.13* Thickness of adjusting washers *Port Sh P 15/32 S 1/2 Cut Sh P 9/32 S 1/2 Sh Sh P 21/32 S 5/8*
 Material of Crank shaft *Steel* Identification Mark on Do. *918.R.H.* Material of Thrust shaft *Steel* Identification Mark on Do. *918.R.H.*
 Material of Tunnel shafts *—* Identification Marks on Do. *918.R.H.* Material of Screw shafts *Iron* Identification Marks on Do. *918.R.H.*
 Material of Steam Pipes *Steel* Test pressure *450 lb*

General Remarks (State quality of workmanship, opinions as to class, &c.)
This vessel is fitted to burn liquid fuel on the three main boilers. The "Dahl System" mechanical pressure burners has been installed & found to work well. Oil fuel to have a flash point not less than 150°F.

The machinery of this vessel has been constructed & fitted on board under Special Survey. The workmanship is found & good throughout. The machinery has been tried under steam & found to work well which in my opinion renders the vessel eligible for the record of +LMC. 8.13. fitted for liquid fuel 8.13 in the Register Book.

The amount of Entry Fee. *\$15.00*
 Special *.. \$277.75*
 Donkey Boiler Fee *.. \$25.00*
 Travelling Expenses (if any) *£14.00*

When applied for, *5.9.1913*

When received, *5/11/13*

Committee's Minute

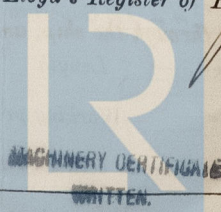
TUE. SEP. 30. 1913

Assigned

+ L.M.C. 8.13

F.D. Rep made. Fitted for oil fuel 8.13

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



Lloyd's Register Foundation

PHILADELPHIA.

Certificate (if required) to be sent to
 (The Surveyors are requested not to write on or below the space for Committee's Minute.)