

REPORT ON MACHINERY

No. 2906

Received at London Office

Date of writing Report 5th July 1918 When handed in at Local Office 5th July 1918 Port of Philadelphia

No. in Survey held at Philadelphia Date, First Survey 10th April 1917 Last Survey 29th June 1918

Reg. Book. on the S. S. "Santa Olivia" (Number of Visits 53)

Master Built at Philadelphia By whom built The Wm. Cramp & Sons Phila. B Co When built 1918

Engines made at Philadelphia By whom made The Wm. Cramp & Sons Phila. B Co (No 361) when made 1918

Boilers made at Do By whom made Do when made 1918

Registered Horse Power 629 Owners Emergency Fleet Corporation Port belonging to Camden

Tom. Horse Power as per Section 28 631 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

ENGINES, &c.—Description of Engines Quadruple Expansion No. of Cylinders 4 No. of Cranks 4

Dia. of Cylinders 25 1/2, 37, 52 1/2, 76 Length of Stroke 54 Revs. per minute 75 Dia. of Screw shaft as per rule 15 1/2 Material of iron

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

In the propeller boss Yes If the liner is in more than one length are the joints burned ✓ If the liner does not fit tightly at the part

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

liners are fitted, is the shaft lapped or protected between the liners ✓ Length of stern bush 6' 0"

Dia. of Tunnel shaft as per rule 14 1/2 Dia. of Crank shaft journals as per rule 14 9/16 Dia. of Crank pin 15 1/2 Size of Crank webs 10 1/4 x 24 Dia. of thrust shaft under

collars 15 1/4 Dia. of screw 18' 0" Pitch of Screw 18' 9" No. of Blades 4 State whether moveable Yes Total surface 102 sq

No. of Feed pumps 3 Diameter of ditto 12 1/2 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 9 Sizes of Pumps see over page No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room 9 BL Rm 4-3 1/2: 1-4 x 2-2 1/2 in oil gutter In Holds, &c. No 1-2-3 1/2: No 2-2-3 1/2: 2-2 1/2: No 3-4-3 1/2

1-2 1/2 in thrust recess: 1-3 1/2 tunnel well No 4-2-3 1/2

No. of Bilge Injections 1 sizes 10" Connected to condenser, or to circulating pump pump Is a separate Donkey Suction fitted in Engine room & size Yes - 4"

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 ✓

Are all connections with the sea direct on the skin of the ship Yes Are they Valves or Cocks both

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 Valves fitted with a spigot and brass covering plate Yes

What pipes are carried through the bunkers bilge pipes How are they protected extra heavy steel pipe

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

Is the Screw Shaft Tunnel watertight Yes Is it fitted with a watertight door Yes worked from Eng. room top stateroom

BOILERS, &c.—(Letter for record S) Manufacturers of Steel Worth & Carnegie

Total Heating Surface of Boilers 8881 sq Is Forced Draft fitted Yes No. and Description of Boilers 3 Single Ended

Working Pressure 222 lbs Tested by hydraulic pressure to 335 lbs Date of test 22.3.18 No. of Certificate 179

Can each boiler be worked separately Yes Area of fire grate in each boiler 71.5 sq No. and Description of Safety Valves to

each boiler double spring loaded Area of each valve 12.56 sq Pressure to which they are adjusted 222 lbs Are they fitted with easing gear Yes

Smallest distance between boilers or uptakes and bunkers or woodwork 13 1/4" Mean dia. of boilers 15' 5 3/4" Length 12' 4 1/2" Material of shell plates steel

Thickness 3/32" Range of tensile strength 60 to 71650 lbs Are the shell plates welded or flanged No Descrip. of riveting: cir. seams O. Riv

long. seams T. R. D. B. S. Diameter of rivet holes in long. seams 1 1/16" Pitch of rivets 8 7/8" Lap of plates or width of butt straps 21 3/4"

Per centages of strength of longitudinal joint 93.46 Working pressure of shell by rules 238 lbs Size of manhole in shell 16" x 12"

Size of compensating ring flanged No. and Description of Furnaces in each boiler 4 Corrugated Material steel Outside diameter 3' 7 1/4"

Length of plain part top 1' 7 1/8" Thickness of plates bottom 1' 7 1/8" Description of longitudinal joint weld No. of strengthening rings ✓

Working pressure of furnace by the rules 232 Combustion chamber plates: Material steel Thickness: Sides 3/4" Back 3/4" Top 3/4" Bottom 3/4" A.B.

Pitch of stays to ditto: Sides 7 1/2 x 7" Back 7 1/8 x 6 1/4" Top 7 1/8 x 7" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 369

Material of stays steel Area at smallest part 1.81 sq Area supported by each stay 53.5 sq Working pressure by rules 310 End plates in steam space:

Material steel Thickness 1 3/8" Pitch of stays 18 x 18" How are stays secured D. nuts Working pressure by rules 261 Material of stays steel

Area at smallest part 8.29 sq Area supported by each stay 324 sq Working pressure by rules 266 Material of Front plates at bottom steel

Thickness 1 1/16" Material of Lower back plate steel Thickness 1 1/8" Greatest pitch of stays 14" x 6 1/2" Working pressure of plate by rules 375

Diameter of tubes 2 1/2" Pitch of tubes 3 1/4" x 3 1/2" Material of tube plates steel Thickness: Front 1 1/16" Back 7/8" Mean pitch of stays 9 1/8"

Pitch across wide water spaces 14" Working pressures by rules 236 Girders to Chamber tops: Material steel Depth, and

thickness of girder at centre 10" x 2 @ 15" Length as per rule 3' 0 1/2" Distance apart 7 1/8" Number and pitch of stays in each 4 @ 7"

Working pressure by rules 280 Steam dome: description of joint to shell ✓ % of strength of joint ✓

Diameter ✓ Thickness of shell plates ✓ Material ✓ Description of longitudinal joint ✓ Diam. of rivet holes ✓

Pitch of rivets ✓ Working pressure of shell by rules ✓ Crown plates ✓ Thickness ✓ How stayed 2021

SUPERHEATER. Type ✓ Date of Approval of Plan ✓ Tested by Hydraulic Pressure to ✓

Date of Test ✓ Is a Safety Valve fitted to each Section of the Superheater which can be shut off from the Boiler ✓

Pressure to which each is adjusted ✓ Is Easing Gear fitted ✓

IS A DONKEY BOILER FITTED?

no

If so, is a report now forwarded?

✓

SPARE GEAR. State the articles supplied:— 2 connecting rod top end bolts & nuts: 2 connecting rod bottom end bolts & nuts: 3 main bearing bolts: 1 set of coupling bolts: 1 set of feed & bilge pump valves: a quantity of assorted bolts & nuts: iron of various sizes: 1 tail shaft: 1 eccentric rod & strap: 1 valve spindle
2 propeller blades

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

J. J. Miller Manufacturer.

Dates of Survey while building
During progress of work in shops -- 1917 April 10. 14. 23. May 5. 14. 19. 26 June 11. 23. July 2. 9. Aug 1. 11. 18. 28 Sept 6. 12. 22. Oct 2. 9. 17 up to Jan 2 1918
During erection on board vessel -- Jan 14. 17. 23. 28 Feb 6. 12. 23. 28 Mar 6. 14. 23. 28 April 2. 10. 17. 26 May 9. 18 June 1. 6. 15. 19. 29
Total No. of visits 53.

Is the approved plan of main boiler forwarded herewith yes

" " " donkey " " " ✓

Dates of Examination of principal parts—Cylinders 23. 4. 17 Slides 20. 11. 17 Covers 3. 12. 17 Pistons 18. 10. 17 Rods 6. 2. 18
Connecting rods 1. 8. 17 Crank shaft 12. 12. 17 Thrust shaft 1. 11. 17 Tunnel shafts 9. 10. 17 Screw shaft 12. 9. 17 Propeller 2. 10. 17
Stern tube 20. 11. 17 Steam pipes tested 15. 6. 18 Engine and boiler seatings 28. 2. 18 Engines holding down bolts 20. 5. 18
Completion of pumping arrangements 29. 6. 18 Boilers fixed 1. 6. 18 Engines tried under steam 29. 6. 18
Completion of fitting sea connections 2. 1. 18 Stern tube 2. 1. 18 Screw shaft and propeller 22. 1. 18
Main boiler safety valves adjusted 29. 6. 18 Thickness of adjusting washers 1 1/8" to 1 5/16"
Material of Crank shaft steel Identification Mark on Do. 361 Material of Thrust shaft steel Identification Mark on Do. 361
Material of Tunnel shafts steel Identification Marks on Do. 361 Material of Screw shafts iron Identification Marks on Do. 361
Material of Steam Pipes steel Test pressure 700 lbs per sq in
Is an installation fitted for burning oil fuel yes Is the flash point of the oil to be used over 150°F. yes
Have the requirements of Section 49 of the Rules been complied with yes
Is this machinery duplicate of a previous case no If so, state name of vessel S.S. "Santa Rosa"

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

Donkey Engines: 7 1/2" x 10 1/4" x 10": 16" x 10 1/4" x 12": 6" x 3 1/4" x 7": 2 @ 6" x 4" x 6": 3 @ 4 1/2" x 6 1/2" x 6"
1 auxiliary circulating 6" centrifugal

The machinery has been built under special survey: the material and workmanship being good, and proved satisfactory on steam trial.

It is submitted that this vessel be eligible for a record of + L.M.C. 6.18 in the Register Book, also a notation of Fitted for Oil Fuel 6.18, F.P. above 150°F.

It is submitted that
this vessel is eligible for
THE RECORD, + L.M.C. 6.18 F.P.
FITTED FOR OIL FUEL 6.18 F.P. ABOVE 150°F

The amount of Entry Fee ... \$ 15: 00: When applied for,
Special ... \$ 257. 75: 19
Donkey Boiler Fee ... £ : : When received,
Travelling Expenses (if any) \$ 6: 00: 22/7/14

A. T. Thomas
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute New York JUL 16 1918

Assigned + L.M.C. 6.18.
Fitted for oil fuel 6.18 F.P. above 150°F



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