

REPORT ON MACHINERY.

No. 2009

MON. MAY 5-1913

Port of PHILADELPHIA

Received at London Office

Survey held at PHILADELPHIA

Date, first Survey 26. 12. 12 Last Survey April 9- 1913

Book on the S.S. VESTA

(Number of Visits 55)

Gross 3663.7

Net 2223.0

Builder J. Fenton Built at Camden N.J. By whom built New York CB Co

When built 1913-4

Engines made at Camden By whom made New York CB Co

when made 1913-4

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when made 1913-4

Registered Horse Power 318 Owners Standard Oil Co

Port belonging to New York

Horse Power as per Section 28 318 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted yes

Engines, &c.—Description of Engines Triple No. of Cylinders 3 No. of Cranks 3

No. of Cylinders 2 1/2 Length of Stroke 42 Revs. per minute 80 Dia. of Screw shaft 12.43 as per rule 12.62 as fitted Material of shaft steel

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

If the liner is in more than one length are the joints burned soldered 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 fitted close If two

shafts are fitted, is the shaft lapped or protected between the liners Length of stern bush 5.1

Dia. of Tunnel shaft 11.22 as per rule 11.3 as fitted Dia. of Crank shaft journals 11.8 as per rule 12 Dia. of Crank pin 12 Size of Crank webs 25x8 1/2 Dia. of thrust shaft under

cranks 12 Dia. of screw 15.0 Pitch of Screw 15.0 No. of Blades 4 State whether moveable yes Total surface 60 sq ft

No. of Feed pumps 2 Diameter of ditto 4 1/2 Stroke 20 Can one be overhauled while the other is at work yes

No. of Bilge pumps 2 Diameter of ditto 4 1/2 Stroke 20 Can one be overhauled while the other is at work yes

No. of Donkey Engines 5 Sizes of Pumps 2 duplex 6 1/4 4 1/2 6 7 1/2 5 1/2 10 16 10 No. and size of Suctions connected to both Bilge and Donkey pumps

Engine Room 6. 3 1/2 In Holds, &c. A peak 1-3. F peak 1-4. Ford

old 2-6 pump room 2-3 1/2

No. of Bilge Injections 1 sizes 8 Connected to condenser, or to circulating pump pump Is a separate Donkey Suction fitted in Engine room & size yes 3 1/2

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 none

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 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

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

Results of examination of completion of fitting of Sea Connections 16. 1. 13 of Stern Tube 16. 1. 13 Screw shaft and Propeller 16. 1. 13

Is the Screw Shaft Tunnel watertight no tunnel Is it fitted with a watertight door worked from

Manufacturers of Steel Work New Louisville

Heating Surface of Boilers 5762 sq ft Is Forced Draft fitted no No. and Description of Boilers 2 Mult. Single ended

Working Pressure 200 lbs Tested by hydraulic pressure to 300 lbs Date of test 14. 12. 12 No. of Certificate 41

Can each boiler be worked separately yes Area of fire grate in each boiler 80 sq ft No. and Description of Safety Valves to

boiler 2 Direct Spring Area of each valve 8.29 sq ft Pressure to which they are adjusted 200 lbs Are they fitted with easing gear yes

Least distance between boilers or uptakes and bunkers or woodwork 4.0 Mean dia. of boilers 16.1/2 Length 11.6 Material of shell plates steel

Thickness 1/2 Range of tensile strength 29.32 tons Are the shell plates welded or flanged no Descrip. of riveting: cir. seams Lap. A. T

seams D.B.S.T.R Diameter of rivet holes in long. seams 1 9/16 Pitch of rivets 9 3/4 Lap of plates or width of butt straps 22 3/4

Percentages of strength of longitudinal joint rivets 89.8 Working pressure of shell by rules 209 lbs Size of manhole in shell 16x12

of compensating ring 3 1/2 x 3 1/2 x 1/2 No. and Description of Furnaces in each boiler 4 Morrison Material steel Outside diameter 44 7/8

Thickness of plain part top 4 1/2 bottom 4 1/2 Thickness of plates crown 19 bottom 32 Description of longitudinal joint welded No. of strengthening rings 2

Working pressure of furnace by the rules 218 lbs Combustion chamber plates: Material steel Thickness: Sides 5/8 Back 5/8 Top 5/8 Bottom 5/8

No. of stays to ditto: Sides 7.6 1/2 Back 7.4 1/2 Top 7.4 1/2 If stays are fitted with nuts or riveted heads nuts Working pressure by rules 247 lbs

Material of stays iron Diameter at smallest part 1.81 Area supported by each stay 54.25 Working pressure by rules 257 lbs End plates in steam space:

Material steel Thickness 1/8 Pitch of stays 16 1/2 x 15 1/2 How are stays secured D. N. W Working pressure by rules 231 lbs Material of stays steel

Diameter at smallest part 2 7/8 Area supported by each stay 2.51 Working pressure by rules 259 lbs Material of Front plates at bottom steel

Thickness 3/4 Material of Lower back plate steel Thickness 5/8 Greatest pitch of stays 14 1/2 Working pressure of plate by rules 364 lbs

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

Distance across wide water spaces 14 1/2 Working pressures by rules 231 lbs Girders to Chamber tops: Material steel Depth and

Thickness of girder at centre 9 x 2 Length as per rule 35 Distance apart 7 3/4 Number and pitch of stays in each 4-7

Working pressure by rules 252 lbs Superheater or Steam chest; how connected to boiler none 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

Pitch of rivets Working pressure of shell by rules Diameter of flue Material of flue plates Thickness

Strengthened 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

W206-0233

Lloyd's Register Foundation

VERTICAL DONKEY BOILER—

Manufacturers of Steel

See New York report No 9370

No. _____ Description _____

Made at _____ By whom made _____ When made _____ Where fixed _____

Working pressure tested by hydraulic pressure to _____ Date of test _____ No. of Certificate _____ Fire grate area _____ Description of _____

Valves _____ No. of Safety Valves _____ Area of each _____ Pressure to which they are adjusted _____ Date of adjustment _____

If fitted with easing gear _____ If steam from main boilers can enter the donkey boiler _____ Dia. of donkey boiler _____ Length _____

Material of shell plates _____ Thickness _____ Range of tensile strength _____ Descrip. of riveting long. seams _____

Dia. of rivet holes _____ Whether punched or drilled _____ Pitch of rivets _____ Lap of plating _____ Per centage of strength of joint _____ Rivets _____ Plates _____

Working pressure of shell by rules _____ Thickness of shell crown plates _____ Radius of do. _____ No. of stays to do. _____ Dia. of stays _____

Diameter of furnace Top _____ Bottom _____ Length of furnace _____ Thickness of furnace plates _____ Description of joint _____

Working pressure of furnace by rules _____ Thickness of furnace crown plates _____ Stayed by _____

Diameter of uptake _____ Thickness of uptake plates _____ Thickness of water tubes _____ Dates of survey _____

SPARE GEAR. State the articles supplied:— 1 tail shaft, 1 section crank shaft, 1 propeller shaft two blades, 4 main bearings, 2 crank pin & 2 crosshead bearings, 1 set coupling bolts, 2 crossheads, 2 crank pin & 2 main bearing bolts, 1 piston rod, 1 valve spindle & a complete set main & aux feed pipes.

The foregoing is a correct description,
Main engine boiler Manufacturers *H. C. Magowan Vice Pres. R. N. S. I.*

Dates of Survey while building	During progress of work in shops	Feb 26, Mar 14, 20, 28, April 3, 16, 23, 29, May 13, 17, 22, Jun 6, 10, 14, 19, 20, 25, 27, July 2, 10, 18, 24, 29, Aug 2, 12, 22, 26, 29, 31, 1913
	During erection on board vessel	Feb 1, 10, 17, 26, Mar 11, 14, 17, 18, 28, Apr 5-9, 1913
Total No. of visits		55

Is the approved plan of main boiler forwarded herewith Yes

Is the approved plan of donkey boiler forwarded herewith Yes

Dates of Examination of principal parts—Cylinders 6-10-12 Slides 6-10-12 Covers 6-10-12 Pistons 25-9-12 Rods 25-9-12

Connecting rods 25-9-12 Crank shaft 25-9-12 Thrust shaft 25-9-12 Tunnel shafts _____ Screw shaft 29-11-12 Propeller 29-11-12

Stern tube 29-11-12 Steam pipes tested 16-1-13 Engine and boiler seatings 9-12-12 Engines holding down bolts 29-1-13

Completion of pumping arrangements 5-4-13 Boilers fixed 28-1-13 Engines tried under steam 5-4-13

Main boiler safety valves adjusted 5-4-13 Thickness of adjusting washers P/Boiler $F\frac{9}{16}$ A $\frac{1}{16}$ S/Boiler $F\frac{7}{8}$ A $\frac{1}{8}$

Material of Crank shaft *Steel* Identification Mark on Do. 799 Material of Thrust shaft *Steel* Identification Mark on Do. 799

Material of Tunnel shafts *Steel* Identification Marks on Do. _____ Material of Screw shafts *Steel* Identification Marks on Do. 799

Material of Steam Pipes *Steel* Test pressure 300 lbs

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

Main feed pumps, two Alberger patent four stage steam turbine pumps, duplicates as fitted in S.S. Rays & El Segundo P.R. report 1943.

The machinery of this vessel has been constructed & fitted on board under special survey. The workmanship is found to be good throughout. The main boilers are donkey boilers have been fitted to burn liquid fuel. The White system of mechanical atomization has been installed & found to work well. Section No 49 of the Rules regarding oil fuel has been complied with.

The machinery has been tried under steam & found to work well which in my opinion renders the vessel eligible for the record of +L.M.C. 4.13, fitted for liquid fuel in the Register Book.

Duplicate of S.S. Rays Phil report No 1943, except oil fuel.

The amount of Entry Fee..	\$15.00	When applied for,	12-4-13
Special	\$180.00	When received,	9-5-13
Donkey Boiler Fee	£ - - -		
Travelling Expenses (if any)	\$4.00		

FRI. MAY 9 - 1913

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

Committee's Minute Assigned + L.M.C. 4.13 Subject

PHILADELPHIA.

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

