

Rpt. 4.

# REPORT ON MACHINERY.

No. 3454

Received at London Office

THU. 17 MAR. 1921

Date of writing Report **Jan. 31, 1921** When handed in at Local Office

Port of

**SAN FRANCISCO,**

No. in Survey held at **Oakland, Calif.**

Date, First Survey **August 9, 1920** Last Survey **Jan. 31, 1921**

Reg. Book.

(Number of Visits **24**)

**65858** on the **Steel Sc. Sr. "MEMNON"**

Tons } Gross **3473.93**  
Net **2070**

Master **--** Built at **Oakland, Cal.** By whom built **Hanlon D.D. & S.B. Co.**

When built **1921**

Engines made at **Milwaukee, Wis** By whom made **Allis, Chalmers Mfg. Co.**

when made **1921**

Boilers made at **Minneapolis, Minn.** By whom made **Wm. Bros. Boiler & Mfg. Co.**

when made **1921**

Registered Horse Power Owners **United States Shipping Board**

Port belonging to **San Francisco**

Nom. Horse Power as per Section 28 **397**

Is Refrigerating Machinery fitted for cargo purposes **No**

Is Electric Light fitted **Yes**

**ENGINES, &c.**—Description of Engines **Vertical triple expansion** No. of Cylinders **3** No. of Cranks **3**

Dia. of Cylinders **24"x39"x65"** Length of Stroke **42"** Revs. per minute **72** Dia. of Screw shaft as per rule **13.62** Material of steel  
as fitted **14"** 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

in the propeller boss **Yes** If the liner is in more than one length are the joints **welded** **Yes** 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 **57"**

Dia. of Tunnel shaft as per rule **12.2** Dia. of Crank shaft journals as per rule **12.81** Dia. of Crank pin **13"** Size of Crank webs

as fitted **12.5"** as fitted **13"** Dia. of thrust shaft under

collars **13 1/2"** Dia. of screw **16.6"** Pitch of Screw **14.0"** No. of Blades **4** State whether moveable **Yes** Total surface **75.9 sq. ft.**

No. of Feed pumps **2** Diameter of ditto **3 7/8"** Stroke **21"** Can one be overhauled while the other is at work **Yes**

No. of Bilge pumps **2** Diameter of ditto **3 7/8"** Stroke **21"** Can one be overhauled while the other is at work **Yes**

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

In Engine Room and Boiler room **4-3"** Tunnel well **1-3"** In Holds, &c. No. 1 hold **2-3"** No. 2 Hold **2-3"**

Deep tank **2-3"** No. 3 Hold **4-3"** No. 4 Hold **2-3"**

No. of Bilge Injections **1** sizes **7"** Connected to condenser, or to circulating pump Is a separate Donkey Suction fitted in Engine room & size **Yes, 3"**

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 **valves**

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 and bilge** How are they protected **2"x12"** wood covering

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 **Deck**

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

Total Heating Surface of Boilers **7200 sq. ft.** Is Forced Draft fitted **No** No. and Description of Boilers **3 Foster Water tube**

Working Pressure **200** Tested by hydraulic pressure to **400** Date of test **5-11-20** No. of Certificate **63**

Can each boiler be worked separately **Yes** Area of fire grate in each boiler **oil burner 33** No. and Description of Safety Valves to

each boiler **2 spring loaded** Area of each valve **9.62 sq. ft.** Pressure to which they are adjusted **200 lbs.** Are they fitted with easing gear **Yes**

Smallest distance between boilers or uptakes and bunkers or woodwork Mean dia. of boilers Length Material of shell plates

Thickness Range of tensile strength Are the shell plates welded or flanged Descrip. of riveting: **cir. seams**

long. seams Diameter of rivet holes in long. seams Pitch of rivets Lap of plates or width of butt straps

Per centages of strength of longitudinal joint rivets Working pressure of shell by rules Size of manhole in shell

Size of compensating ring No. and Description of Furnaces in each boiler Material Outside diameter

Length of plain part top Thickness of plates crown Description of longitudinal joint No. of strengthening rings

Working pressure of furnace by the rules Combustion chamber plates: Material Thickness: Sides Back Top Bottom

Pitch of stays to ditto: Sides Back Top If stays are fitted with nuts or riveted heads Working pressure by rules

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

Material Thickness Pitch of stays How are stays secured Working pressure by rules Material of stays

Area at smallest part Area supported by each stay Working pressure by rules Material of Front plates at bottom

Thickness Material of Lower back plate Thickness Greatest pitch of stays Working pressure of plate by rules

Diameter of tubes Pitch of tubes Material of tube plates Thickness: Front Back Mean pitch of stays

Pitch across wide water spaces Working pressures by rules Girders to Chamber tops: Material Depth and

thickness of girder at centre Length as per rule Distance apart Number and pitch of stays in each

Working pressure by rules 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

**SUPERHEATER.** Type **Foster** Date of Approval of Plan Tested by Hydraulic Pressure to **600 lbs.**

Date of Test **26-9-19** W.V.S. **N<sup>o</sup> 2185** Is a Safety Valve fitted to each Section of the Superheater which can be shut off from the Boiler **Yes**

Diameter of Safety Valve **14"** Pressure to which each is adjusted **205** Is Easing Gear fitted **No**

IS A DONKEY BOILER FITTED? No If so, is a report now forwarded?

SPARE GEAR. State the articles supplied:—Two main bearings, bolts and nuts, 2 crosshead brasses, bolts and nuts, 1 cylinder escape valve complete, 1 air pump rod, 2 main bearings, 2 crank pin brasses, 1 set of coupling bolts, 2 crosshead brasses, 1 set of valves for each size pump aboard including bilge fire, air, ballast and fuel oil pumps, 1 set of boiler check valves, 1 set of link brasses, 1 set of eccentric straps complete, 1 main engine piston rod and valve rod, 1 set of cylinder covers, bolts and nuts, 1 line bilge pump plunger, 1 set of piston rings for each size piston of main engine, 2 safety valve springs, 4 thermometers, 20 boiler tubes, 50 hand hole plates, 50 condenser tubes, 100 ferrules, 2 pressure gauges, Large assortment of bolts, nuts, washers, rod, plate packing, etc.

The foregoing is a correct description, Hanlon Drydock and Shipbuilding Co.

D. K. Byers

Manufacturer.

Dates of Survey while building: During progress of work in shops - July 25, August 2, 5, 9, October 30, January 11th; During erection on board vessel - Aug. 9, 20, Sept. 1, 22, 29, Oct. 5, 12, 22, 30, Nov. 5, 23, Dec. 1, 9, 16, 22, Jan. 5, 11, 25, 29; Total No. of visits 24

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 Oct. 5, Slides Oct. 5th, Covers Nov. 23, Pistons Oct. 5, Rods Oct. 5

Connecting rods Oct. 5, Crank shaft Oct. 12, Thrust shaft Nov. 5th, Tunnel shafts Oct. 12th, Screw shaft Aug. 9th, Propeller Aug. 9th

Stern tube Sept. 22nd, Steam pipes tested Jan. 5, 11th, Engine and boiler seating Sept. 1, Oct. 5, Engines holding down bolts Jan. 26th

Completion of pumping arrangements Dec. 22nd, Boilers fixed December 1st, Engines tried under steam January 25th

Completion of fitting sea connections Sept. 29th, Stern tube Sept. 1st, Screw shaft and propeller Sept. 22nd

Main boiler safety valves adjusted, Thickness of adjusting washers locknuts

Material of Crank shaft steel, Identification Mark on Donkey 2345-2346, Material of Thrust shaft steel, Identification Mark on Donkey 2339

Material of Tunnel shafts steel, Identification Marks on Donkey 2362-2347, Material of Screw shafts Steel, Identification Marks on Donkey 2339

Material of Steam Pipes copper, Test pressure 400 lbs.

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? Yes, If so, state name of vessel: See S.F. Rpt. No. 3414 "MEDON"

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

The machinery and boilers of this vessel were constructed under Special Survey of material tested to Rule Requirements and the workmanship was found good throughout. On completion the machinery was thoroughly tested under working conditions with satisfactory results and, in the opinion of the undersigned, the machinery is eligible to be classed in the Register Book \* L.M.C. 1-21. Fitted for Oil Fuel 1-21. F.P. above 150°F. Electric Light.

It is submitted that this vessel is eligible for THE RECORD. + L.M.C. 1. 21 CL 3 WATER TUBE BOILERS. FITTED FOR OIL FUEL 1.21. FP ABOVE 150°F. Subject to the Water Tube Boilers being surveyed annually.

Roll 23/3/21

1/3 Mach fee or \$66.33, plus \$62.65 expense credit Chicago - their Mach Rpt. No. 139. " " " " \$66.40, plus \$64.95 " " Duluth, " Boiler " " 68.

Table with columns for Expense Type, Amount, and Date/Status. Includes Chicago Expenses, Donkey Boiler Fee, Duluth Expenses, Travelling Expenses, and Entry Fee.

A. W. Lawson, Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute New York FEB 23 1921

Assigned + L.M.C. 1. 21

MACHINERY CERT. WRITTEN 31/3/21 dated 17.3.21

