

# REPORT ON MACHINERY.

Received at London Office

SAT. APR. 10. 1915

Date of writing Report 24th Mar. 15 When handed in at Local Office 19 Port of SAN FRANCISCO,  
 No. in Survey held at San Francisco, California. Date, First Survey April 22nd/14 Last Survey March 3rd 19 15  
 Reg. Book. (Number of Visits 40)  
 on the Steel Screw Steamer "J.A. MOFFETT". Tons { Gross 6521  
 Net 4012  
 Master G.E. Bridgett. Built at San Francisco. By whom built Union Iron Works Co. When built 1915  
 Engines made at San Francisco, By whom made Union Iron Works Company. when made 1915  
 Boilers made at San Francisco, By whom made Union Iron Works Company. when made 1915  
 Registered Horse Power 540 Owners Standard Oil Co. of California. Port belonging to San Francisco.  
 Nom. Horse Power as per Section 28 540. Is Refrigerating Machinery fitted for cargo purposes - Is Electric Light fitted yes.

**ENGINES, &c.**—Description of Engines Vertical Quadruple Expansion No. of Cylinders four No. of Cranks four  
 Dia. of Cylinders 23-32 $\frac{1}{2}$ -49-71 $\frac{1}{2}$  Length of Stroke 51 Revs. per minute 14.57 Material of screw shaft steel,  
 as per rule 14.7 as fitted 15 $\frac{1}{8}$  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 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 yes If two  
 liners are fitted, is the shaft lapped or protected between the liners - Length of stern bush 60"  
 Dia. of Tunnel shaft 13.05 Dia. of Crank shaft journals 13.7 Dia. of Crank pin 14 Size of Crank web 9 $\frac{1}{8}$ x26 Dia. of thrust shaft under  
 collars 14 $\frac{1}{2}$  Dia. of screw 18' Pitch of Screw 15.75 No. of Blades 4 State whether moceable yes Total surface 94.61  
 No. of Feed pumps 2-3 4-stage Turbine Diameter of ditto - Stroke - Can one be overhauled while the other is at work yes  
 No. of Bilge pumps 2 Diameter of ditto 12x8x12 Stroke - Can one be overhauled while the other is at work yes  
 No. of Donkey Engines 1-for<sup>d</sup> Bilge Pump 10x10x12. No. and size of Suctions connected to both Bilge and Donkey pumps  
 In Engine Room 8-3 $\frac{1}{2}$ " In Holds, &c. 1-4" in FP. 2-6" in F. Hold; 2-2" in Pump Rm;  
2-2 $\frac{1}{2}$ " in C'dam.; 2-3 $\frac{1}{2}$ " Pump Rm. D.B. 1-4" in A.P.; 2-3 $\frac{1}{2}$ " Blr. R. Tank; 2-3 $\frac{1}{2}$ " to E.R. tank.  
 No. of Bilge Injections 1 sizes 8" Connected to condenser, or to circulating pump Cir. Pump separate Donkey Suction fitted in Engine room & size 1-5"  
 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 stools 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 none 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 Nov. 17/14 of Stern Tube Oct. 29/14 Screw shaft and Propeller Nov. 17/14  
 Is the Screw Shaft Tunnel watertight - Is it fitted with a watertight door - worked from -

**BOILERS, &c.**—(Letter for record (7)) Manufacturers of Steel Worth Bros. Co.  
 Total Heating Surface of Boilers 9525 sq. ft. Is Forced Draft fitted no No. and Description of Boilers 3-s.e. Scotch. multitubular.  
 Working Pressure 220 Tested by hydraulic pressure to 330 Date of test Nov. 27, Dec 3 No. of Certificate 6-8  
 Can each boiler be worked separately yes Area of fire grate in each boiler none No. and Description of Safety Valves to  
 each boiler 2-spring loaded Area of each valve 12.6 Pressure to which they are adjusted 220 Are they fitted with easing gear yes  
 Smallest distance between boilers or uptakes and bunkers or woodwork - Mean dia. of boilers 14'10 $\frac{5}{8}$ " length 12'1" Material of shell plates steel  
 Thickness 1 $\frac{5}{8}$ " Range of tensile strength 28-32 Are the shell plates welded or flanged no Descrip. of riveting: cir. seams d.r. lap  
 long. seams t.r. butt Diameter of rivet holes in long. seams 1 $\frac{5}{8}$ " Pitch of rivets 10" Lap of plates or width of butt straps 23"  
 Per centages of strength of longitudinal joint rivets 94.86 Working pressure of shell by rules 245 Size of manhole in shell 12x16  
 plate 83.75 Size of compensating ring 24x28 No. and Description of Furnaces in each boiler 3-Morrison Material steel Outside diameter 48 $\frac{1}{8}$ "  
 Length of plain part top - Thickness of plates crown 11 $\frac{1}{16}$ " Description of longitudinal joint Welded No. of strengthening rings -  
 bottom - bottom 11 $\frac{1}{16}$ " Working pressure of furnace by the rules 235 Combustion chamber plates: Material steel Thickness: Sides 45 $\frac{5}{64}$ " Back 45 $\frac{5}{64}$ " Top 45 $\frac{5}{64}$ " Bottom 1"  
 Pitch of stays to ditto: Sides 7x8 Back 7x8 Top 7x8 If stays are fitted with nuts or riveted heads riv. hds. Working pressure by rules 224  
 Material of stays Nor. Iron Area at smallest part 1.76 Area supported by each stay 56sqin Working pressure by rules 282 End plates in steam space:  
 Material steel Thickness 1 $\frac{1}{4}$ " Pitch of stay 16 $\frac{3}{8}$ x17 $\frac{1}{2}$  How are stays secured d. nuts. Working pressure by rules 243 Material of stays steel  
 Diameter at smallest part 3 $\frac{1}{8}$ " Area supported by each stay 286.5 Working pressure by rules 300 Material of Front plates at bottom steel  
 Thickness 15 $\frac{1}{16}$ " Material of Lower back plate steel Thickness 13 $\frac{1}{16}$ " Greatest pitch of stays 13"x8" Working pressure of plate by rules 400  
 Diameter of tubes 2 $\frac{1}{2}$ " Pitch of tubes 3 $\frac{1}{2}$ " Material of tube plates steel Thickness: Front 15 $\frac{1}{16}$ " Back 7 $\frac{1}{8}$ " Mean pitch of stays 8 $\frac{3}{4}$ "  
 Pitch across wide water spaces 13 Working pressures by rules 225 Girders to Chamber tops: Material steel Depth and  
 thickness of girder at centre 12x1 $\frac{1}{2}$  Length as per rule 35" Distance apart 8" Number and pitch of stays in each 4-7"  
 Working pressure by rules 326 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  
 holes - Pitch of rivets - Working pressure of shell by rules - Diameter of flue - Material of flue plates - Thickness -  
 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 -

If not, state whether, and when, one will be sent Yes In a Report also sent on the Hull of the Ship?

W1212-0173



IS A DONKEY BOILER FITTED?  no

If so, is a report now forwarded?

SPARE GEAR. State the articles supplied:— 1-section crank shaft. 1-tail shaft complete, nut feather & line  
2-bronze propeller blades. 1-L.P. piston rod. 1-H.P. piston rod. 4-main bearing bolts & nuts.  
4-connecting rod bottom end bolts and nuts. 8-crosshead bolts and nuts. 24-follower studs and nuts.  
24-cylinder and valve cover studs and nuts. 1-H.P. valve stem complete. 1-L.P. valve stem complete.  
3-main bearing brasses. 2-crank pin brasses. 2-sets crosshead brasses. 9-coupling bolts (2 sizes  
fitted to work. Assorted bolts and nuts and iron. *1 set bulge pump valves*

*see S. 750. ltv. 29.9.15*

The foregoing is a correct description,

UNION IRON WORKS COMPANY,

By *W. G. James* Manufacturer.

Dates of Survey while building { During progress of work in shops -- } April 22, 24, 28, 30; May 8, 12, 25; June 5, 23; July 6, 15, 17, 20; Aug. 3, 12, 17, 19, 25, 28, 31; Sept. 14, 17, 28; Oct 29; Nov. 5, 17, 27; Dec. 2, 4.  
{ During erection on board vessel --- } Dec. 8, 16, 18; Jan 5, 9, 12, 16, 22; Feb. 2, 17; Mar 3.  
Total No. of visits Forty (40).

Is the approved plan of main boiler forwarded herewith  yes

" " " donkey " " " " " "

Dates of Examination of principal parts—Cylinders *Aug-28/14* Slides *July 17* Covers *July 20* Pistons *June 23* Rods *Aug. 12*  
Connecting rods *Aug 12* Crank shaft *Aug 3* Thrust shaft *Aug. 3* Tunnel shafts - Screw shaft *Aug. 3rd* Propeller *Aug 3rd*  
Stern tube *Sept. 14th* Steam pipes tested *Feb. 17th* Engine and boiler seatings *Oct. 13th* Engines holding down bolts *Jan. 9/15*  
Completion of pumping arrangements *Feb. 17th* Boilers fixed *Dec. 28th* Engines tried under steam *Mar. 3rd.*  
Main boiler safety valves adjusted *Mar. 3/15* Thickness of adjusting washers *Lock Nuts.*

Material of Crank shaft *Steel* Identification Mark on Do. *T.G.D. 1120* Material of Thrust shaft *steel* Identification Mark on Do. *T.G.D. 1120*  
Material of Tunnel shafts - Identification Marks on Do. - Material of Screw shafts *steel* Identification Marks on Do. *T.G.D. 1120*  
Material of Steam Pipes *steel* ✓ Test pressure *660 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 *S/S "RICHMOND", No. 459 in R.B.*

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

The Machinery and boilers of this vessel have been constructed under Special Survey, of materials tested in accordance with Rule requirements. Workmanship sound throughout. On completion Machinery was thoroughly tested under working conditions and worked satisfactorily in all respects. In the opinion of the undersigned this vessel is eligible to be classed in the Register Book with notation of *LMC 3-15 Fitted for Oil Fuel 3-15 F.P. above 150°F.*

*It is submitted that this vessel is eligible for THE RECORD. + LMC 3. 15.*

*Fitted for oil fuel 3. 15. F.P. above 150°F.*

*A. R. R.*

*J. W. D.*

*13/4/15*

The amount of Entry Fee ... £ 15.00 :  
Special ... £ 235.00 :  
Donkey Boiler Fee ... £ :  
Travelling Expenses (if any) £ 2.50 :  
When applied for, *Mar. 19. 1915*  
When received, *19/4/15*

*W. Sheward & P. Blackett*  
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute *FRI. APR. 16. 1915*

Assigned *+ Lmc 3. 15*  
*Fitted for oil fuel 3. 15. F.P. above 150°F.*