

# REPORT ON MACHINERY.

Received at London Office

Date of writing Report 19 When handed in at Local Office 6<sup>th</sup> AUG 1920 Port of SAN FRANCISCO.

No. in Survey held at OAKLAND, CAL. Date, First Survey 2<sup>nd</sup> AUG. 1919 Last Survey 25<sup>th</sup> JULY 1920  
 Reg. Book. on the S/S "SAPULPA" (Number of Visits 34.)

Master C. DAMSON. Built at OAKLAND, CAL. By whom built MOORE SHIPBUILDING CO. Tons { Gross 7311.  
 Net 4526.  
 When built 1920

Engines made at LOS ANGELES. By whom made LLEWELLYN IRON WORKS. when made 1919

Boilers made at OAKLAND, CAL. By whom made MOORE SHIPBUILDING CO. when made 1919

Registered Horse Power Owners U.S. SHIPPING BOARD. Port belonging to SAN FRANCISCO

Nom. Horse Power as per Section 28 579. Is Refrigerating Machinery fitted for cargo purposes NO Is Electric Light fitted YES

**ENGINES, &c.—Description of Engines** TRIPLE EXPANSION. No. of Cylinders THREE. No. of Cranks THREE.

Dia. of Cylinders 24 1/2 x 4 1/2 x 7 1/2 Length of Stroke 48" Revs. per minute 85 Dia. of Screw shaft as per rule 14 1/8" Material of STEEL  
 as fitted 15 1/2" 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 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 66"

Dia. of Tunnel shaft as per rule 14" Dia. of Crank shaft journals as per rule 13 1/2" Dia. of Crank pin 14 3/8" Size of Crank webs 7 1/2 x 9 1/2" Dia. of thrust shaft under  
 collars 14" Dia. of screw 18'-0" Pitch of Screw 14'-0" No. of Blades 4 State whether moceable YES. Total surface 95 sq

No. of Feed pumps TWO Diameter of ditto 2 x 8" Stroke 24" Can one be overhauled while the other is at work YES

No. of Bilge pumps TWO Diameter of ditto 5" Stroke 21" Can one be overhauled while the other is at work YES

No. of Donkey Engines THREE. Sizes of Pumps 1 1/2 x 8 1/2 x 12 D.P., 2'-6" x 5 1/4 x 6" D.P. No. and size of Suctions connected to both Bilge and Donkey pumps  
 In Engine Room THREE: 3 1/2" DIA. ONE: 4" DIA. In Holds, &c. TWO: 2 1/2" DIA IN FORE TWEEN DECK. CARGO SPACE.  
 ONE: 3" DIA. IN FORE PEAK. ONE: 3" DIA. IN AFTER PEAK. ONE 3 1/2" DIA. IN COFFER DAM.

No. of Bilge Injections ONE sizes 12" Connected to condenser, or to circulating pump C. PUMP Is a separate Donkey Suction fitted in Engine room & size YES

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 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

Is the Screw Shaft Tunnel watertight Is it fitted with a watertight door worked from

**BOILERS, &c.—(Letter for record)** Manufacturers of Steel ILLINOIS STEEL CO

Total Heating Surface of Boilers 8745 Is Forced Draft fitted YES No. and Description of Boilers 3 Cyl MULTITUBULAR S.E.

Working Pressure 210 LBS. Tested by hydraulic pressure to 315 LBS. Date of test 27<sup>th</sup> JUNE 1919 No. of Certificate 155. A.W.L.

Can each boiler be worked separately YES Area of fire grate in each boiler OIL BURNER No. and Description of Safety Valves to  
 each boiler TWO SPRING LOADED Area of each valve 12.56 sq Pressure to which they are adjusted 210 LBS Are they fitted with easing gear YES

Smallest distance between boilers or uptakes and bunkers or woodwork Mean dia. of boilers 15'-3 3/8" Length 11'-0" Material of shell plates STEEL

Thickness 1 5/8" Range of tensile strength 60900-66000 Are the shell plates welded or flanged NO Descrip. of riveting: cir. seams D.R.  
 long. seams D.B.S. T.R. Diameter of rivet holes in long. seams 19/16" Pitch of rivets 10" Lap of plates or width of butt straps 22 1/4"

Per centages of strength of longitudinal joint rivets 84.4 Working pressure of shell by rules 243 LBS Size of manhole in shell 12" x 16"  
 plate 87.7

Size of compensating ring FLANGED No. and Description of Furnaces in each boiler THREE MORISON. Material STEEL Outside diameter 45.0625"

Length of plain part top Thickness of plates crown 2 1/2 Description of longitudinal joint WELDED No. of strengthening rings  
 bottom 3/2

Working pressure of furnace by the rules 237 LBS. Combustion chamber plates: Material STEEL Thickness: Sides 1/16" Back 1/16" Top 1/16" Bottom 15/16"

Pitch of stays to ditto: Sides 7 3/4 x 7" Back 7 3/4 x 7 1/4 Top 8 3/8 x 7" If stays are fitted with nuts or riveted heads R.H. Working pressure by rules 215 LBS.

Material of stays STEEL Area at smallest part 1.622 Area supported by each stay 58.625 Working pressure by rules 231 LBS. End plates in steam space:  
 Water Cap. Tons

Material STEEL Thickness 1/4" Pitch of stays 17" x 16" How are stays secured D. NUTS Working pressure by rules 257 LBS Material of stays STEEL

Area at smallest part 8.29 Area supported by each stay 272 sq Working pressure by rules 317 LBS Material of Front plates at bottom STEEL

Thickness 13/16" Material of Lower back plate STEEL Thickness 13/16" Greatest pitch of stays 14" Working pressure of plate by rules 305 LBS.

Diameter of tubes 2 1/2" Pitch of tubes 3 3/4" Material of tube plates STEEL Thickness: Front 13/16" Back 13/16" Mean pitch of stays 7.5"

Pitch across wide water spaces 13" Working pressures by rules 314 LBS Girders to Chamber tops: Material STEEL Depth and  
 thickness of girder at centre 11 x 3/4" DOUBLE Length as per rule 34" Distance apart 8 3/8" Number and pitch of stays in each FOUR 7"

Working pressure by rules 279 LBS. Steam dome: description of joint to shell % of strength of joint

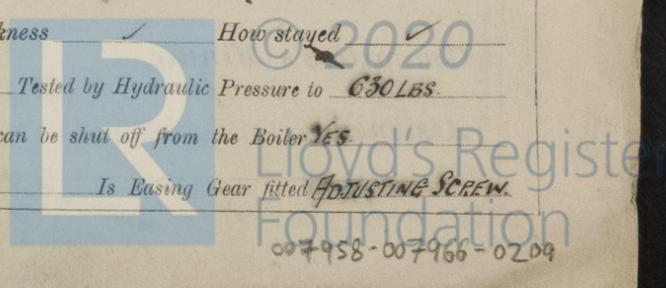
Diameter Thickness of shell plates Material Description of longitudinal joint Diam. of rivet holes

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

**UPERHEATER.** Type FOSTER. Date of Approval of Plan Tested by Hydraulic Pressure to 630 LBS.

Date of Test 23-6-19 F.H.O. Is a Safety Valve fitted to each Section of the Superheater which can be shut off from the Boiler YES

Diameter of Safety Valve 1 1/2" Pressure to which each is adjusted 215 LBS. Is Easing Gear fitted ADJUSTING SCREW.



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 and nuts, 2 bottom end bolts and nuts, 2 main bearing bolts, 1 set of coupling bolts, 1 set of feed and bilge pump valves, 1 set of piston rings for each piston, 1 set of crosshead brasses, 1 set of crank pin brasses, 1 valve stem, 18 piston junk ring bolts, 18 cylinder cover studs, 12 valve chest cover studs, 6 air pump valve studs and nuts, 35 condenser tubes, 1 spare propeller blade, 20 boiler tubes, 2 safety valve springs, 1/2 set of valves, studs and springs for hose pumps. A quantity of assorted bolts, nuts and iron.

The foregoing is a correct description,

Moore Shipbuilding Co

Manufacturer.

Dates of Survey while building: During progress of work in shops: 1919: AUG: 2, 19, 22, SEPT: 15, 17, 20, 30, 1920: JUNE: 14. During erection on board vessel: 1920: JAN: 14, FEB: 16, MAR: 1, 12, 30, APR: 27, JUNE: 1, 4, 10, 11, 14, 17, 22, 24, 25, 29, JULY: 2, 7, 9, 13, 15, 19, 21, 23, 24, 28. Total No. of visits: 34.

Is the approved plan of main boiler forwarded herewith YES.

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

Dates of Examination of principal parts—Cylinders 11-6-20 Slides 17-6-20 Covers 17-6-20 Pistons 22-6-20 Rods 22-6-20

Connecting rods 22-6-20 Crank shaft 30-3-20 Thrust shaft 30-3-20 Tunnel shafts ✓ Screw shaft 17-9-19 Propeller

Stern tube 20-9-19 Steam pipes tested 14<sup>th</sup> JUNE 15<sup>th</sup> JULY 1920 Engine and boiler seatings 18-9-19 Engines holding down bolts 24-6-20

Completion of pumping arrangements 24-7-20 Boilers fixed 14-1-20 Engines tried under steam 24-7-20

Completion of fitting sea connections 19-7-20 Stern tube 19-7-20 Screw shaft and propeller 19-7-20

Main boiler safety valves adjusted 23-7-20 Thickness of adjusting washers LOCK NUTS FITTED.

Material of Crank shaft STEEL. Identification Mark on Do. 7-22-19 F.B.N. 58. Material of Thrust shaft STEEL. Identification Mark on Do. R.S. 30-4-19 N. 467

Material of Tunnel shafts ✓ Identification Marks on Do. ✓ Material of Screw shafts STEEL. Identification Marks on Do. W.C. 12, 10, 18

Material of Steam Pipes STEEL Test pressure 630 LBS.

Is an installation fitted for burning oil fuel YES. Is the flash point of the oil to be used over 150° F. No.

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. "SALINA" SAN FRANCISCO R.P.N. 3326.

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

The machinery of this vessel was built under special survey of the American Bureau of Shipping and a copy of their certificate N° 36-X on same is attached hereto. ENGINE N° 1078.

During installation the machinery was examined by the undersigned and found to be in accordance with the plans and workmanship was found good.

In my opinion the machinery of this vessel is eligible to be classed in the Register Book with the Record of L.M.C. 7-20, fitted for Oil fuel 7-20, F.P. above 150° F. Electric light

It is submitted that this vessel is eligible for THE RECORD, LMC 7-20 FII Fitted for Oil fuel 7-20 F.P. above 150

Bell 30/9/20

The amount of Entry Fee ... \$ 15.00 : When applied for, Special ... \$ 24.75 : Aug 7, 1920 Donkey Boiler Fee ... £ : When received, 2-9-20 S. & Travelling Expenses (if any) \$ 4.50 : 2-9-19

W. H. Smith Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute Nov. York AUG 17 1920

Assigned L.M.C. 7.20

MACHINERY CERT. WRITTEN 31/8/20



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