

REPORT ON MACHINERY

No. 3142

OCT. 1919

Received at London Office

Date of writing Report Aug 26 1919 When handed in at Local Office Subd. 11.9.19 19. Port of San Francisco California
 No. in Survey held at Oakland Calif. Date, First Survey Jan 23 Last Survey Aug 25 1919
 Reg. Book. 197 on the Steel Screw Steamer "Cotati" (Number of Visits 32) Tons { Gross 5963
 Net 4385
 Master L. J. Ward Built at Oakland Calif. By whom built Moore Shipbuilding Co. When built 1919
 Engines made at Woburn N.J. By whom made W. & A. F. Fletcher & Co. when made 1919
 Boilers made at Oakland Calif. By whom made Moore Shipbuilding Co. when made 1919
 Registered Horse Power 467 Owners United States Shipping Board Port belonging to San Francisco
 Shaft Horse Power at Full Power 2800 Is Refrigerating Machinery fitted for cargo purposes Yes Is Electric Light fitted Yes

TURBINE ENGINES, &c.—Description of Engines Parron's Reduction Gaud. No. of Turbines 2.

Diameter of Rotor Shaft Journals, H.P. L.P. Diameter of Pinion Shaft
 Diameter of Journals Distance between Centres of Bearings Diameter of Pitch Circle
 Diameter of Wheel Shaft Distance between Centres of Bearings Diameter of Pitch Circle of Wheel
 Width of Face Diameter of Thrust Shaft under Collars Diameter of Tunnel Shaft as per rule 12.87"
 as fitted 13.25"
 No. of Screw Shafts one Diameter of same as per rule 13.95" Diameter of Propeller 16'0" Pitch of Propeller 14'3"
 as fitted 14.625"
 No. of Blades 4 State whether Moveable Yes Total Surface 81.2 sq ft Diameter of Rotor Drum, H.P. L.P. Astern
 Thickness at Bottom of Groove, H.P. L.P. Astern Revs. per Minute at Full Power, Turbine 3600 Propeller 90

PARTICULARS OF BLADING.

	H.P.			L.P.			ASTERN.		
	HEIGHT OF BLADES.	DIAMETER AT TIP.	NO. OF ROWS.	HEIGHT OF BLADES.	DIAMETER AT TIP.	NO. OF ROWS.	HEIGHT OF BLADES.	DIAMETER AT TIP.	NO. OF ROWS.
1ST EXPANSION									
2ND "									
3RD "									
4TH "									
5TH "									
6TH "									
7TH "									
8TH "									

No. and size of Feed pumps 2 12" x 8" x 24"
 No. and size of Bilge pumps 3 1-6" x 5 3/4" x 6" D 1-12" x 8 1/2" x 12" D 1-12" x 10" x 12" D
 No. and size of Bilge suction in Engine Room 5-3 1/2"

In Holds, &c. F.P. 1-3" No. 1 Hold 2-3 1/2" No. 2 Hold 2-3 1/2"

No. 3 Hold 2-3 1/2" No. 4 Hold 2-3 1/2" A.P. 1-3"
 No. of Bilge Injections 1 size 12" Connected to condenser, to circulating 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 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 Yes Is it fitted with a watertight door Yes worked from deck

BOILERS, &c.—(Letter for record S) Manufacturers of Steel Illinois Steel Co.

Total Heating Surface of Boilers 8745 Is Forced Draft fitted Yes No. and Description of Boilers 3 Scotch Marine
 Working Pressure 210 lbs. Tested by hydraulic pressure to 315 lbs. Date of test Mar 12-19 No. of Certificate 140
 Can each boiler be worked separately Yes Area of fire grate in each boiler Oil Bunker No. and Description of Safety Valves to each boiler Two 3 1/2" Area of each valve 19.2425" 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 5' 3 3/8" Length 11'0" Material of shell plates steel
 Thickness 1 1/8" Range of tensile strength 80000 to 71680 Are the shell plates welded or flanged flgd. Descrip. of riveting: cir. seams double riv.
 long. seams single riv. Diameter of rivet holes in long. seams 1 9/16" Pitch of rivets 9.66" Lap of plates or width of butt straps 22"
 rivets 90.85 Working pressure of shell by rules 230 Size of manhole in shell heads 12" x 18"
 plates 83.82 Corrugated
 Size of compensating ring flgd. No. and Description of Furnaces in each Boiler 3 Marine Material steel Outside diameter 48 1/16"
 Length of plain part top 21 3/32" Thickness of plates crown 21 3/32" Description of longitudinal joint welded No. of strengthening rings —
 bottom 21 3/32"
 Working pressure of furnace by the rules 222 Combustion chamber plates: Material steel Thickness: Sides 1/16" Back 1/16" Top 1/16" Bottom 10 1/16"
 Pitch of stays to ditto: Sides 7 1/4" x 7 1/4" Back 7 1/4" x 7 1/4" Top 8 1/2" x 7" If stays are fitted with nuts or riveted heads nutted Working pressure by rules 215
 Material of stays steel Diameter at smallest part 1 7/8" Area supported by each stay 56.30" Working pressure by rules 280.5 End plates in steam space
 Material steel Thickness 1 1/4" Pitch of stays 17 x 19 How are stays secured double nuts Working pressure by rules 215.3 Material of stays steel
 Diameter at smallest part 10.321 x 1" Area supported by each stay 325.0" Working pressure by rules 330 Material of Front plates at bottom steel
 Thickness 1 3/16" Material of Lower back plate steel Thickness 1 3/16" Greatest pitch of stays 14 x 15 1/2" Working pressure of plate by rules 274
 Diameter of tubes 2 1/2" Pitch of tubes 3 3/8" Material of tube plates steel Thickness: Front 1 3/16" Back 1 3/16" Mean pitch of stays 7.5"
 Pitch across wide water spaces 13" Working pressures by rules 268 Girders to Chamber tops: Material steel Depth and
 thickness of girder at centre 11 1/2" x 15" Length as per rule Distance apart 8 3/4" Number and pitch of stays in each 4 at 7"
 Working pressure by rules 267 Steam dome: description of joint to shell — % of strength of joint — Diameter —
 Thickness of shell plates — Material — Description of longitudinal joint — Diameter of rivet holes — Pitch of rivets —
 Working pressure of shell by rules — Crown plates: Thickness — How stayed —

SUPERHEATER. Type *Forster* Date of Approval of Plan _____ Tested by Hydraulic Pressure to *630 lbs.* 4a.
Date of Test *28-2-19* *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 *No*.

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

SPARE GEAR. State the articles supplied:— *1 propeller blade, 50 condenser tubes & 100 females - 1 complete set of valves, springs & studs for each size of pump aboard including bilge, fire, fuel and lubricating pumps - 2 bolts and nuts for each rotor bearing, main gear bearing and pinion bearing - 1 set of bolts, nuts and washers for each turbine casing and gear casing. 2 thermometers - 1 set of bearings for gear wheel shaft, pinion shaft & rotor shaft. 1 set of packing rings & springs for each rotor shaft. - 1 bucket & rod for lubricating oil pump. 1 set of adjusting block liners - 2 safety valve springs - 1 relief valve complete. Large assortment of packing - 1 circulating pump impeller and shaft 1 set of boiler feed check valves. A large assortment of bolts, nuts, studs, washers, bars and plate.*

The foregoing is a correct description,

Moore Stephens & Co
Ly Danmore

Manufacturer.

Dates of Survey while building
During progress of work in shops - *Jan 31 - Feb 5 - 14 - 23 - 27 - Mar 6 - 10 - 12 - April 23 May 16 - 19 June 13*
During erection on board vessel - *Mar 27-29 Apr 23 May 17-19 June 4-13-20-28 July 11-25 Aug 1-4-5-7-8-12-19-22*
Total No. of visits *32*. Is the approved plan of main boiler forwarded herewith _____

Dates of Examination of principal parts—Casings Rotors Blading Gearing
Rotor shaft _____ Thrust shaft _____ Tunnel shafts *June 13* Screw shaft *Mar 12* Propeller *Mar 27*
Stern tube *Mar 12* Steam pipes tested *Aug 4-5* Engine and boiler seatings *May 7* Engines holding down bolts *Aug 19*
Completion of pumping arrangements *July 25* Boilers fixed *June 13* Engines tried under steam *Aug 19*
Main boiler safety valves adjusted *Aug 19* Thickness of adjusting washers *Lackmets*

Material and tensile strength of Rotor shaft _____ Identification Mark on Do. _____

Material and tensile strength of Pinion shaft _____ Identification Mark on Do. _____

Material of Wheel shaft _____ Identification Mark on Do. _____ Material of Thrust shaft _____ Identification Mark on Do. _____

Material of Tunnel shafts *steel* Identification Marks on Do. *** Material of Screw shafts *steel* Identification Marks on Do. *W.C. 29-7-18*

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. *Yes*.

Have the requirements of Section 49 of the Rules been complied with *Yes*.

Is this machinery a duplicate of a previous case *No*. If so, state name of vessel _____

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

3 shafts Lloyd's No. 446 W.C. 3-7-18
1 shaft Lloyd's No. 446 W.C. 28-5-18
3 shafts Lloyd's No. 446 W.C. 29-7-18
1 shaft Lloyd's No. 446 W.C. 29-7-18

This machinery and boilers of this vessel was constructed under Special Survey of materials tested to rule requirements and the workmanship was found good throughout. On completion the machinery was tested under all conditions with satisfactory results. In the opinion of the undersigned the vessel is eligible to be classed in the Register Book with record of + L.M.C. 8-19 fitted for fuel oil F.P. above 150°F. Electric light. Engine shaft. Falk Red gear No 4454. Superheater. Rudder cross head.

(1/3 fee, or \$72.25, credit N.Y.K. Rpt 16211.)

The amount of Entry Fee ... \$ 15.00
Special ... \$ 216.75
Castings ... \$ 20.00
Early fee ... \$ 10.00
Travelling Expenses (if any) ... \$ 11.12

When applied for,

Aug 30 1919

When received,

2/10/19

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

Committee's Minute

New York SEP 16 1919

Assigned

+ L.M.C. 8.19



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