

Rpt. 4.

## REPORT ON MACHINERY.

No. 722

WED. 20 NOV. 1918

Received at London Office

Date of writing Report 23 Oct 1918 When handed in at Local Office Oct 24<sup>th</sup> 1918 Port of Seattle Washington U.S.  
No. in Survey held at Seattle Washington Date, First Survey 24<sup>th</sup> June Last Survey Sept 3<sup>rd</sup> 1918  
Reg. Book. ENTRY on the Steel Screw Steamer Western Cross (Number of Visits 18)  
Master E Sewal Built at Seattle Wash By whom built J. J. Guthrie & Co. Tons { Gross 5676  
Net 4157  
Engines made at Schenectady N.Y. By whom made General Electric Co. when made 1918  
Boilers made at Seattle Wash By whom made Commercial Boiler Wks when made 1918  
Registered Horse Power 2500 SHP Owners U.S. Shipping B. & Emergency Fleet Corp. Port belonging to Seattle  
Nom. Horse Power as per Section 28 4166 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted yes

ENGINES, &c.—Description of Engines Geared Turbine No. of Cylinders 13-79 No. of Cranks 13-81  
Dia. of Cylinders 12-5 Length of Stroke 12-48 Propeller 90 Dia. of Screw shaft 13-81 Material of 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  
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 yes Length of stern bush 4'-11"  
Dia. of Tunnel shaft 12-5 as per rule 12-48 Dia. of Crank shaft journals 12-3/4 as fitted 12-3/4 Dia. of Crank pin 13-81 Size of Crank webs 13-81 Dia. of thrust shaft under  
collars 13-3/8 Dia. of screw 16-6 Pitch of Screw 14'-2" No. of Blades 4 State whether moveable yes Total surface 71-48  
No. of Feed pumps 2 Diameter of ditto 10" Stroke 16 Can one be overhauled while the other is at work yes  
No. of Bilge pumps 1 Diameter of ditto 8 Stroke 10 Can one be overhauled while the other is at work yes  
No. of Donkey Engines 1 Sizes of Pumps 12 x 10 1/2 x 16 No. and size of Suctions connected to both Bilge and Donkey pumps  
In Engine Room 4. 3 1/2" Boiler Room 2. 3 1/2" In Holds, &c. (N<sup>o</sup> 1) 2. 3 1/2" (N<sup>o</sup> 2) 2. 3 1/2" (N<sup>o</sup> 3) 2. 3 1/2"  
(N<sup>o</sup> 4) 4. 3 1/2" Recess 1. 3 1/2" Shaft Tunnel 2. 3 1/2" Is a separate Donkey Suction fitted in Engine room & size yes 2. 3 1/2"  
No. of Bilge Injections 1 sizes 10 Connected to condenser, or to circulating pump yes Is a separate Donkey Suction fitted in Engine room & size yes 2. 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 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 Below  
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 yes  
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 Eng Room above lead line

BOILERS, &c.—(Letter for record New York 6-6-18) Manufacturers of Steel Illinois Steel Co. & Ohio Steel Co.  
Total Heating Surface of Boilers 7995 Is Forced Draft fitted yes No. and Description of Boilers 3 Single Ended Scotch Marine  
Working Pressure 210 lbs Tested by hydraulic pressure to 315 lbs Date of test 9-8-18 No. of Certificate 48  
Can each boiler be worked separately yes Area of fire grate in each boiler 63 No. and Description of Safety Valves to  
each boiler 2. 3 1/2" Lunkheimer Area of each valve 9.6 Pressure to which they are adjusted 210 Are they fitted with easing gear yes  
Smallest distance between boilers or uptakes and bunkers or woodwork 14" Mean dia. of boilers 14'-9" Length 11ft Material of shell plates Steel  
Thickness 1 3/8" Range of tensile strength 62720 Are the shell plates welded or flanged no Descrip. of riveting: cir. seams double  
long. seams treble Diameter of rivet holes in long. seams 1 7/16" Pitch of rivets 9 1/2" Lap of plates or width of butt straps 21 1/2"  
Per centages of strength of longitudinal joint rivets 88.0 Working pressure of shell by rules 219 Size of manhole in shell 12 x 16  
Size of compensating ring flanged No. and Description of Furnaces in each boiler 3 Maudslayi Material Steel Outside diameter 48"  
Length of plain part top — bottom — Thickness of plates crown 2 1/16" Description of longitudinal joint Welded No. of strengthening rings —  
Working pressure of furnace by the rules 222 Combustion chamber plates: Material Steel Thickness: Sides 1 1/16" Back 1 1/16" Top 1 1/16" Bottom 1 1/16"  
Pitch of stays to ditto: Sides 7 3/4" x 7 3/4" Back 7 1/2" x 7 1/2" Top 7 1/4" x 8 3/4" If stays are fitted with nuts or riveted heads yes Surface. Riveted yes Working pressure by rules 214  
Material of stays W. Iron Area at smallest part 1.85 Area supported by each stay 56.18 Working pressure by rules 245 End plates in steam space: yes  
Material Steel Thickness 1 1/4" Pitch of stays 17 1/2" x 18 How are stays secured Double nutted Working pressure by rules 222 Material of stays Steel  
Area at smallest part 7.1 Area supported by each stay 315 Working pressure by rules 225 Material of Front plates at bottom Steel  
Thickness 3/4" Material of Lower back plate Steel Thickness 1 1/16" Greatest pitch of stays 13" Working pressure of plate by rules 278  
Diameter of tubes 2 3/4" Pitch of tubes 3 1/16" x 3 3/4" Material of tube plates Steel Thickness: Front 13/16" Back 13/16" Mean pitch of stays 7 5/8" x 11 1/4"  
Pitch across wide water spaces 13 Working pressures by rules 278 Girders to Chamber tops: Material steel Depth and  
thickness of girder at centre Double 10 1/2" x 3 3/4" Length as per rule 34" Distance apart 8 3/4" Number and pitch of stays, in each 3. 7 1/4"  
Working pressure by rules 221 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 —  
Date of Test 24-8-18 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 211 lbs Is Easing Gear fitted yes

9990-881900-561900



IS A DONKEY BOILER FITTED? ☒ NO

If so, is a report now forwarded? ☒ NO

SPARE GEAR. State the articles supplied:—

1 Sail Shaft	24 Boiler Tubes	1 Lubricating pump installed
2 Propeller Blades	2 Thrust Shoes	
1 Set Coupling Bolt ✓	1 Set Yire Bars	Note A quantity of turbine
1 Set Feed pump Valves ✓	1 Set Furnace Linings	spares encased were 2
1 Set Bidge pump Valves ✓	assorted bolts & nuts ✓	before sailing but cont
40 Condenser Tubes & 804 exrubs ✓		of cases unknown

The foregoing is a correct description,

J. F. Dunthie Co.

C. O. J. Dunthie & Co.

Manufacturer.

Dates of Survey while building { During progress of work in shops -- June 24, 25 July 3, 6, 11, 12, 18, 22, 25 Aug 1, 6, 9  
During erection on board vessel -- Aug 17, 20, 24, 27, 30, 31 Sept 3, 1918  
Total No. of visits 19

Is the approved plan of main boiler forwarded herewith ☒ YES

" " " donkey " " " ☒

Dates of Examination of principal parts—Cylinders ✓ Slides ✓ Covers ✓ Pistons ✓ Rods ✓

Connecting rods ✓ Crank shaft ✓ Thrust shaft 27-8-18 Tunnel shafts 27-8-18 Screw shaft 24-8-18 Propeller 3-7-18

Stern tube 25-6-18 Steam pipes tested 24-8-18 Engine and boiler seatings 28-8-18 Engines holding down bolts 30-8-18

Completion of pumping arrangements 20-8-18 Boilers fixed 30-8-18 Engines tried under steam 31-8-18

Completion of fitting sea connections 3-7-18 Stern tube 3-7-18 Screw shaft and propeller 3-7-18

Main boiler safety valves adjusted 30-8-18 Thickness of adjusting washers

Material of Crank shaft ✓ Identification Mark on Do. ✓ Material of Thrust shaft Steel Identification Mark on Do. ✓

Material of Tunnel shafts Steel Identification Marks on Do. ✓ Material of Screw shafts Steel Identification Marks on Do. ✓

Material of Steam Pipes Steel ✓ Test pressure 630 lbs ✓

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

Have the requirements of Section 49 of the Rules been complied with ☒

Is this machinery duplicate of a previous case ☒ NO If so, state name of vessel ☒

General Remarks (State quality of workmanship, opinions as to class, &c. The Turbines and Reduction Gears inspected by surveyor to the society at New York and shipped to this port.

Installed on board with all shafting, ecclesiasties, fittings and connections in accordance with approved plans.

Boilers built and installed under special survey together with mountings and fittings in accordance with approved plans.

The materials and workmanship are of good quality. The machinery tried under steam and found satisfactory. Eligible in my opinion for notation **LMC 9-18** in the Register Book

It is submitted that  
this vessel is eligible for  
THE RECORD. + LMC 9. 18. F.D.

1 Geared Steam Turbine.

J. W. D. 27/11/18

The amount of Entry Fee ... \$ 15:00 : When applied for.

Special ... £ 204.25 : Oct-24-1918

Donkey Boiler Fee ... £ : When received.

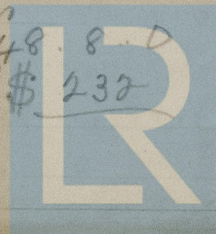
Travelling Expenses (if any) £ : \$ 219.25 paid 7/12/18

Committee's Minute New York NOV 6 1918

Assigned + LMC 9. 18.

MACHINE: CERTIFICATE  
WRITTEN: 20-11-18

Alfred Ewing  
Engineer Surveyor to Lloyd's Register of Shipping.



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Foundation