

REPORT ON MACHINERY. No. 508

REC'D NEW YORK June 24 1918

Received at London Office

Date of writing Report June 10 1918 When handed in at Local Office June 11 1918 Port of Portland, Oregon
 No. in Survey held at Portland, Oregon Date, First Survey Mar. 1 '18 Last Survey June 6 1918
 Reg. Book. on the SS WESTERN CITY (Number of Visits 12)

Master G. C. Bown Built at Portland, Ore. By whom built Columbia River S.B. Corp. When built 1918
 Engines made at Wellsville, Ct. By whom made Merr Turbine Co. when made 1918
 Boilers made at Portland, Ore. By whom made Columbia River S.B. Corp. when made 1918
 Nominal Horse Power 417 Owners U.S. Emergency Fleet Corp. Port belonging to Portland, Ore.
 Registered Horse Power 2500 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted yes
 Shaft Horse Power at Full Power 2500

Double Reduction Geared
 TURBINE * ENGINES, &c.—Description of Engines No. of Turbines One
 Diameter of Rotor Shaft Journals, H.P. 5" L.P. 5 3/4" internal 9 1/2" external shaft
 Diameter of Journals 9 1/2" Distance between Centres of Bearings 2' 6 3/4" Diameter of Pitch Circle outside 10.395
 Diameter of Wheel Shaft 15" Distance between Centres of Bearings 2' 8 1/2" Diameter of Pitch Circle of Wheel outside 55.49
 Width of Face 16" Diameter of Thrust Shaft under Collars 13 3/4" Diameter of Tunnel Shaft as per rule 12.49
 No. of Screw Shafts One Diameter of same as per rule 13 1/4" Diameter of Propeller 14' 0" Pitch of Propeller 14 ft.
 No. of Blades 4 State whether Moveable yes Total Surface 80 3/4 sq. ft. Diameter of Rotor Drum, H.P. as per rule 12 3/8"
 Thickness at Bottom of Groove, H.P. as fitted 14 1/2" Revs. per Minute at Full Power, Turbine 3585 Propeller 90
 Astern

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	6 x 1"	33 1/2"	2				6" x 1"	33 1/2"	2
2ND	6 x 1"	33 1/2"	2				3"	35 5/8"	1
3RD	2	35 5/8"	1						
4TH	3	35 5/8"	1						
5TH	4	35 5/8"	1						
6TH	5	36 5/8"	1						
7TH	6	38 1/2"	1						
8TH	6 1/8	38 1/2"	1						

No. and size of Feed pumps Two 14" x 9" x 16" Vertical, Simplex
 No. and size of Bilge pumps One 6" x 6" x 6" Horizontal Duplex, One 12" x 8 1/2" x 12" Horizontal, One 12" x 10 1/2" x 12" Horizontal
 No. and size of Bilge suction in Engine Room Three 3 1/2", One 4", Two 3 1/2" Stockhold
 In Holds, &c. Two 3 1/2" Tunnel, 2-3 1/2" cl. 1 Hold, 2-3 1/2" cl. 2 Hold

No. of Bilge Injections One sizes 10" Connected to condenser, or to circulating pump yes Is a separate Donkey Suction fitted in Engine Room & size yes 4"
 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 on Sea Stools Are they Valves or Cocks Valves
 Are they fixed sufficiently high on the ship's side to be seen without lifting the stockhold 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 Sanitary and Telemeter How are they protected Wooden casings
 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 Upper Engine Room

BOILERS, &c.—(Letter for record (7)) Manufacturers of Steel Dukens Iron Steel Works
 Total Heating Surface of Boilers 4404 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 Apr. 14, 1918 No. of Certificated 4345, 46
 Can each boiler be worked separately yes Area of fire grate in each boiler 60.3 No. and Description of Safety Valves to each boiler 1-3 1/2" x 3 1/2" + 5" Area of each valve 9.65 Pressure to which they are adjusted 203 lbs. (U.S.) Are they fitted with easing gear yes
 Smallest distance between boilers or uptakes and bunkers or woodwork 2 feet Mean dia. of boilers 14.9" Length 11.0" Material of shell plates Steel
 Thickness 1 1/2" Range of tensile strength 60,000 to 71,680 lbs. Are the shell plates welded or flanged flanged Descrip. of riveting: cir. seams double riveted
 long. seams double butt straps Diameter of rivet holes in long. seams 1 7/8" Pitch of rivets 10" Lap of plates or width of butt straps 22 1/2"
 rivets 98.1 Working pressure of shell by rules 228.8 lbs. Size of manhole in shell 16" x 12"
 plates 84.34
 Size of compensating ring head flanged in No. and Description of Furnaces in each Boiler 3 Morrison Material Steel Outside diameter 48 1/2"
 top 3" crown 3" No. of strengthening rings 9
 Length of plain part bottom 2 1/2" Description of longitudinal joint corrugations
 Working pressure of furnace by the rules 222 Combustion chamber plates: Material Steel Thickness: Sides 1 1/2" Back 1 1/2" Top 1 1/2" Bottom 1 1/2"
 Pitch of stays to ditto: Sides 7 1/2" x 7 1/2" Back 7 1/2" x 7 1/2" Top 7 1/2" x 8 1/2" If stays are fitted with nuts or riveted heads yes Working pressure by rules 214 lbs.
 Material of stays W. H. Iron Diameter at smallest part 1.49" Area supported by each stay 54.3 Working pressure by rules 215 End plates in steam space yes
 Material Steel Thickness 1 1/4" Pitch of stays 17 x 17 How are stays secured bolts Working pressure by rules 242 Material of stays Steel
 Diameter at smallest part 3.034 Area supported by each stay 289 sq. in. Working pressure by rules 259.4 Material of Front plates at bottom Steel
 Thickness 1 1/2" Material of Lower back plate Steel Thickness 1 1/2" Greatest pitch of stays 7 1/2" x 7 1/2" Working pressure of plate by rules 221
 Diameter of tubes 3" Pitch of tubes 4 x 4 1/2" Material of tube plates Steel Thickness: Front 1 1/2" Back 1 1/2" Mean pitch of stays 8 1/2"
 Pitch across wide water spaces 13 1/2" Working pressures by rules 248.5 Girders to Chamber tops: Material Steel Depth and thickness of girder at centre 11" x 3 1/4" Length as per rule 3.0 Distance apart 18" Number and pitch of stays in each 3-7
 Working pressure by rules 214 Steam dome: description of joint to shell 0% of strength of joint 0% Diameter 0"
 Thickness of shell plates Material Description of longitudinal joint 0% Diameter of rivet holes 0" Pitch of rivets 0"
 Working pressure of shell by rules 0% Crown plates: Thickness 0" How stayed 0"

SUPERHEATER. Type Foster Wheeler Date of Approval of Plan Tested by Hydraulic Pressure to 630 lbs.
Date of Test March 15th 1918 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 in. Pressure to which each is adjusted 215 lbs Is Easing Gear fitted Yes

IS A DONKEY BOILER FITTED? If so, is a report now forwarded?

SPARE GEAR. State the articles supplied:— 1 Propeller shaft, 2 Propeller blades, 6 coupling bolts, 1 Set of Feed Pump valves, 1 Set of Bilge Pump valves, 1 Set of Feed Water valves, 1 Set of Air Pump Valves, 40 condenser tubes, 100 Condenser ferrules, an assortment of bolts, nuts, studs and iron of various sizes.

The foregoing is a correct description,
Columbia River Shipbuilding Corp. for W. L. Shaw Manufacturer.
Chief Engineer

Dates of Survey while building During progress of work in shops -- 1918 Mar. 14, 24 Apr. 9, 14, 24
During erection on board vessel -- May 10, 25, 31 June 1, 4, 5
Total No. of visits 12 Is the approved plan of main boiler forwarded herewith no

Dates of Examination of principal parts—Casings Rotors Blading Gearing
Rotor shaft Thrust shaft May 31 '18 Tunnel shafts May 31 '18 Screw shaft Apr 9 '18 Propeller Apr 9 '18
Stern tube Apr 9 '18 Steam pipes tested May 25 '18 Engine and boiler seatings May 10 '18 Engines holding down bolts June 1 '18
Completion of pumping arrangements May 31 '18 Boilers fired May 31 '18 Engines tried under steam June 5 '18
Main boiler safety valves adjusted June 1 '18 Thickness of adjusting washers Check nuts
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 Steel Identification Mark on Do. 30-8-17
Material of Tunnel shafts Steel Identification Marks on Do. Material of Screw shafts Steel Identification Marks on Do. 8-7-17
Material of Steam Pipes C. H. Lap welded 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 Yes If so, state name of vessel "Westward Ho"

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

The geared turbine has been constructed under Special Survey at Wellsville Ct. Y. and installed at Portland Oregon.

The Boilers have been built at Portland, Oregon under Special Survey, of materials tested by the Society's Surveyors and the workmanship is good.

The Machinery worked well on trial and it is submitted that the record of + LMC 6-18 Electric light be made in the Register Book in the case of this vessel.

The amount of Entry Fee ... \$ 45.00 : When applied for, this vessel is eligible for THE RECORD + LMC 6-18 F.D.
Special ... \$ 204.00 :
Donkey Boiler Fee ... \$:
Travelling Expenses (if any) \$ 10.50 :
When received, Fitted for oil fuel 6-18 F.P. above 150° F. Engine Surveyor to Lloyd's Register of Shipping.

Committee's Minute New York JUN 24 1918

Assigned + LMC 6-18



© 2020

Lloyd's Register Foundation