

REPORT ON MACHINERY.

No. 563

REC'D NEW YORK May 22 1919

Received at London Office

MUN 23 JUN 1919

Survey held at Portland, Oregon Date, First Survey Feb. 24, 1919 Last Survey May 19, 1919
on the Steel S.S. WEST QUECHEE (Number of Visits 24) Gross 6280.82 Tons Net 3912.50

Port. Perry Built at Portland, Ore By whom built Columbia R. S. B. Corp. When built 1919
Engines made at Schenectady, N.Y. By whom made General Electric Co. when made 1918
Boilers made at Portland, Ore By whom made Columbia River Ship Building Co. when made 1919
Horse Power 549 Owners Emergency Fleet Corporation Port belonging to Portland, Ore
Horse Power at Full Power 2500 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted yes

SHOP No. 13561 GEARS 3394
Description of Engines Double Reduction Geared Turbine No. of Turbines One

Number of Rotor Shaft Journals, H.P. 8 L.P. ✓ Diameter of Pinion Shaft 4" H.S.P. 4.612
Number of Journals H.S.P. 4 Distance between Centres of Bearings H.S.P. 24" Diameter of Pitch Circle 454.888 L.S.P. 11.442
Number of Wheel Shaft 14 Distance between Centres of Bearings L.S.P. 63 1/4" Diameter of Pitch Circle of Wheel 454.058
Diameter of Face 20.44 Diameter of Thrust Shaft under Collars 13 1/8" Diameter of Tunnel Shaft as per rule 12 1/8"
Screw Shafts One Diameter of same as per rule 13.98" Diameter of Propeller 14 ft Pitch of Propeller 13 1/2"
Blades 4 State whether Moveable yes Total Surface 80 3/4 sq ft. Diameter of Rotor Drum, H.P. ✓ L.P. ✓ Astern ✓
Revs. per Minute at Full Power, Turbine 3242 Propeller 90

DETAILS OF BLADING.

	ACTIVE HEIGHT OF BLADES.	H.P. PITCH DIAMETER AT TIP.	NO. OF ROWS.	HEIGHT OF BLADES.	L.P. DIAMETER AT TIP.	NO. OF ROWS.	ACTIVE HEIGHT OF BLADES.	ASTERN. PITCH DIAMETER AT TIP.	NO. OF ROWS.
EXPANSION	45-1.25	2.11 1/2	2				8.125-1.5	3 1/3	2
"	.625	3.9	1				3.378	3 1/3	1
"	1.25	3.10 1/2	1						
"	2.5	4.0	1						
"	6	4.2	1						
"									
"									
"									
"									

and size of Food pumps Two Vertical Simplex 10" x 8 1/2" x 20"
and size of Bilge pumps Three Horizontal Duplex 12" x 10 1/4" x 12", 12" x 8 1/2" x 12", 6" x 6" x 6"
and size of Bilge suction in Engine Room Four of 3 1/2", One of 2 1/4"
In Holds, &c. Two in each of 3 1/2". In addition two

3 1/2" in ch. 4 Hold.

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"
all the bilge suction pipes fitted with roses yes Are the roses in Engine room always accessible yes
all connections with the sea direct on the skin of the ship on sea stools Are they Valves or Cocks valves
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
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
pipes are carried through the bunkers vent and rounding How are they protected by wood casings
all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times yes
the Bilge Suction Pipes, Cocks, and Valves arranged so as to prevent any communication between the sea and the bilges yes
Screw Shaft Tunnel watertight yes Is it fitted with a watertight door yes worked from Upper Engine Room
Screw Shaft Liner is in three pieces shrink one upon another to half thickness + turned together to half thickness

MAKERS, &c. (Letter for record (S)) Manufacturers of Steel Illinois Steel Co. Chicago + Gary
Heating Surface of Boilers 8000 Is Forced Draft fitted yes No. and Description of Boilers 3 Scotch
Working Pressure 210 lbs Tested by hydraulic pressure to 315 lbs Date of test Apr 25 + 28, 1919 No. of Certificates 120 + 121
each boiler be worked separately yes Area of fire grate in each boiler 60.3 sq. ft. No. and Description of Safety Valves to yes
boiler two 3 1/2" spring Area of each valve 9.6 sq. in Pressure to which they are adjusted 210 lbs Are they fitted with easing gear yes
least distance between boilers or uptakes and bunkers or woodwork 2 ft. Mean dia. of boilers 14.9" Length 11.0" Material of shell plates steel
thickness 1 1/16" Range of tensile strength 60,000 to 73,000 lbs Are the shell plates welded or flanged flanged Descrip. of riveting: cir. seams DR
seams Triple riveted Diameter of rivet holes in long. seams 1 1/16" Pitch of rivets 10" Lap of plates or width of butt straps 22 5/8"
WaterC double butt straps rivets 91.24 Working pressure of shell by rules 230.8 lbs Size of manhole in shell 12" x 16"
To centages of strength of longitudinal joint plates 84.4

of compensating ring 4 ft. 10 in. long No. and Description of Furnaces in each Boiler 3 Morrison Material steel Outside diameter 46"
length of plain part 74" top 21" Thickness of plates 21" Description of longitudinal joint 11" No. of strengthening rings 11"
bottom 32" bottom 32" 11" 11" 15"
Working pressure of furnace by the rules 223 lbs Combustion chamber plates: Material steel Thickness: Sides 16" Back 16" Top 16" Bottom 16"
Pitch of stays to ditto: Sides 1 1/2" x 1 1/2" Back 1 1/2" x 1 1/2" Top 1 1/2" x 1 1/2" If stays are fitted with nuts or riveted heads yes Working pressure by rules 234 lbs
Material of stays steel Diameter at smallest part 2.0974 Area supported by each stay 82.4 Working pressure by rules 215 lbs End plates in steam space steel
Material steel Thickness 1 1/16" Pitch of stays 1 1/4" How are stays secured double nut Working pressure by rules 212 lbs Material of Front plates at bottom steel
Diameter at smallest part 3 3/8" Area supported by each stay 294.09 sq. in Working pressure by rules 270.7 lbs Material of Front plates at bottom steel
Thickness 16" Material of Lower back plate steel Thickness 16" Greatest pitch of stays 13 3/4" Working pressure of plate by rules 222 lbs
Diameter of tubes 3" Pitch of tubes 4" x 4" Material of tube plates steel Thickness: Front 16" Back 16" Mean pitch of stays 10 1/4"
Pitch across wide water spaces 13 1/2" Working pressures by rules 244 lbs Girders to Chamber tops: Material steel Depth and 3 at 8 1/2"
Thickness of girder at centre 11" x 15" Length as per rule 3.0" Distance apart 8 5/8" Number and pitch of stays in each 3 at 8 1/2"
Working pressure by rules 260 lbs 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 *Water waste heat* Date of Approval of Plan *6-30-19* Tested by Hydraulic Pressure to *630 lbs.*
Date of Test *5-1-19 (F.H.O.)* Is a Safety Valve fitted to each Section of the Superheater which can be shut off from the Boiler *Yes* Rpt.
Diameter of Safety Valve *1 1/2"* Pressure to which each is adjusted *215 lbs.* Is Easing Gear fitted *Yes*

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

SPARE GEAR. State the articles supplied:— *2 Studs & nuts each size rotor hearing, 2 Studs & nuts main gear wheel hearing, 2 Studs & nuts pinion hearing, 1/2 doz of bolts & nuts for each gear case for 1/2 doz turbine casing joint, 2 thermometers oil circ. system, 1 set hearing bushes each for rotor, gear wheel and pinion shafts, 1 set gland packing rings, 2 thrust horse shoes turbine thrust and adjusting bushes, 1 set feed pump valves, 1 doz. bilge pump, 1 set of valve spring of each size used, a quantity of bolts, nuts and studs bars and plates of mild steel, 1 set of coupling bolts each size used, 2 propeller blades, 20 boiler tubes, 40 condenser tubes & 80 feet valves, 1 set of boiler feed check valves.* *Spare gear complete*
See N. Y. L. R. 25/8/19.
AWD
18/9/19

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

Dates of Survey while building
During progress of work in shops -- *Feb. 24. Mar. 1, 4, 24. Apr. 14, 15, 16, 17, 18, 21, 23, 24, 25, 28.*
During erection on board vessel -- *May 2, 5, 7, 8, 12, 14, 15, 16, 17, 19.*
Total No. of visits *24*

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 14* Tunnel shafts *May 14* Screw shaft *Apr. 28* Propeller *Apr. 28*
Stern tube *Apr. 17* Steam pipes tested *May 8* Engine and boiler seatings *Apr. 25* Engines holding down bolts *May 7*
Completion of pumping arrangements *May 12* Boilers fired *May 2* Engines tried under steam *May 16*
Main boiler safety valves adjusted *May 15* 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. *1192. 2nd 1st*
Material of Tunnel shafts *Steel* Identification Marks on Do. *988 E.F.T. 988 FWT 770 A.H. 988 A.H.*
Material of Steam Pipes *C. H. lap welded steel* Test pressure *630 lbs.* Identification Marks on Do. *3-11-18 F.W.T.*

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 *"West Imboden"*

General Remarks (State quality of workmanship, opinions as to class, &c.) *The Geared Turbine has been constructed under special survey at Schenectady, N.Y. The Boilers have been built under special survey at Portland, Oregon, of material tested by the Society's Surveyors and the workmanship is good.*

It is submitted that the record of + L M C 5-19 Electric light be made in the Register Book in the case of this vessel.

The amount of Entry Fee ... *\$ 45.00* : When applied for, *May 20, 1919*
Special ... *\$ 245:* :
Donkey Boiler Fee ... *1:* : When received, *28/5/19*
Travelling Expenses (if any) *\$:* : *RBM*
23/6

J. A. Yates
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute *New York JUN - 3 1919*

Assigned *+ L M C 5-19*

MACHINERY CERTIFICATE
WRITTEN
2-7-19



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Foundation