

## REPORT ON MACHINERY

No. 2623

REC'D NEW YORK

Received at London Office

Date of writing Report 13<sup>th</sup> Feb 1917 When handed in at Local Office 13<sup>th</sup> Feb 1917 Port of Pittsburgh & Philadelphia  
 No. in Survey held at Pittsburgh & Chester Date, First Survey 22<sup>nd</sup> May 1916 Last Survey Sept 21<sup>st</sup> 1916  
 Reg. Book. Steel S. S. Chalmers (Chester S. B. Coys 338 52.) Number of Violets 18 77 Gross 26 1907  
 on the Steel S. S. Chalmers Tons { Net 1916  
 Master Built at Chester Pa By whom built Chester S. B. Coys When built 1916  
 Engines made at East Pittsburgh By whom made Kestinghouse Machine Coys when made 1916  
 Boilers made at Candor N. Y. By whom made New York S. B. Coys when made 1917  
 Registered Horse Power 484 Owners Westfal Larsen Port belonging to Bergen  
 Shaft Horse Power at Full Power 2900 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted yes

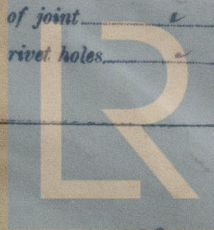
TURBINE ENGINES, &c.—Description of Engines Double Reduction Geared Turbines No. of Turbines 2  
 Diameter of Rotor Shaft Journals, H.P. 4 1/2" L.P. 4 1/2" Diameter of Pinion Shaft 1st reduction hollow 4 3/4 x 3 1/4 2nd reduction hollow 4 x 6 1/2"  
 Diameter of Journals 1st 4 1/4 2nd 4 1/4 Distance between Centres of Bearings 3 1/4 3 1/4 Diameter of Pitch Circle 1st reduction 5 1/4 2nd reduction 10 2 1/2  
 Diameter of Wheel Shaft 1st 4 1/4 2nd 4 1/4 Distance between Centres of Bearings 1st 3 1/4 2nd 4 1/4 Diameter of Pitch Circle of Wheel 1st 5 1/4 2nd 10 2 1/2  
 Width of Face 1st 2 1/4 2nd 4 1/4 Diameter of Thrust Shaft under Collars 20 Kingstons Diameter of Tunnel Shaft as per rule 11 1/4 13 1/4  
 No. of Screw Shafts one Diameter of same as per rule 15 1/8 15 3/8 Diameter of Propeller 18 0" Pitch of Propeller 18 0"  
 No. of Blades 4 State whether Moveable no Total Surface 110 sq Diameter of Rotor Drum, H.P. 1 1/4" L.P. 2 1/4" Astern 2 1/2"  
 Thickness at Bottom of Groove, H.P. 1 1/2" L.P. 1 1/2" Revs. per Minute at Full Power, Turbine 38 1/2 Propeller 45

## PARTICULARS OF BLADING.

	H.P. EXPANSION IMPULSE. REACTION			L.P. ALL REACTION			ASTERN. IMPULSE.		
	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	1 1/2 mean	32" mean	2	3"	30"	3	H.P. 1 1/2 mean	32" mean	2
2ND	2"	21"	8	4"	32"	2	L.P. 3 3/8"	32"	2
3RD	3"	23"	6	5"	34"	1			
4TH				6"	36"	4			
5TH									
6TH									
7TH									
8TH									

No. and size of Feed pumps 2 @ 12" x 8" x 24"  
 No. and size of Bilge pumps 1 @ 6" x 5 1/4" x 6" 1 @ 7 1/2" x 8 1/2" x 6" both duplex  
 No. and size of Bilge suction in Engine Room 3-3 1/2" 1 @ 3 1/2" 1 @ 3 1/2" in oil fuel galley in boiler room  
 In Holds, &c. 4-4" in after end 6-4" in forward end  
 No. of Bilge Injections 1 sizes 12" Connected to condenser, or to circulating pump 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 both  
 Are they sized 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 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 none Is it fitted with a watertight door worked from

BOILERS, &c.—(Letter for record (Y)) Manufacturers of Steel Worth Bros  
 Total Heating Surface of Boilers 8862 sq Is Forced Draft fitted yes No. and Description of Boilers 3 Single Ended  
 Working Pressure 180 lbs Tested by hydraulic pressure to 270 lbs Date of test 30.8.16 No. of Certificate 101  
 Can each boiler be worked separately yes Area of fire grate in each boiler 58.75 sq No. and Description of Safety Valves to each boiler double acting loaded Area of each valve 9.6 Pressure to which they are adjusted 185 lbs Are they fitted with easing gear yes  
 Smallest distance between boilers or uptakes and bunkers or woodwork 20" Mean dia. of boilers 15-1 1/2" Length 11.9" Material of shell plates steel  
 Thickness 1 1/2" Range of tensile strength 38/32 tons Are the shell plates welded or flanged no Descrip. of riveting: cir. seams O. Riv  
 long. seams T.R.O.B.S. Diameter of rivet holes in long. seams 1 1/8" Pitch of rivets 8 15/16" Lap of plates or width of butt straps 20 1/4"  
 Per centages of strength of longitudinal joint 94 Working pressure of shell by rules 191 Size of manhole in shell 16" x 12"  
 Size of compensating ring 3.1 x 2.8 x 1 1/16" No. and Description of Furnaces in each Boiler 3 corrugated Material steel Outside diameter 3.8 1/16"  
 Length of plain part top 1 1/2" bottom 1 1/2" Thickness of plates 1 1/2" Description of longitudinal joint weld No. of strengthening rings 23  
 Working pressure of furnace by the rules 182 Combustion chamber plates: Material steel Thickness: Sides 3/32" Back 3/32" Top 3/32" Bottom 1"  
 Pitch of stays to ditto: Sides 7 1/2 x 8 1/2" Back 8 1/2 x 7 1/2" Top 8 1/4 x 7 1/2" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 268  
 Material of stays iron Diameter at smallest part 1.99" Area supported by each stay 65.6 Working pressure by rules 228 End plates in steam space Material steel Thickness 1 1/2" Pitch of stays 18 x 16 How are stays secured O. nuts Working pressure by rules 217 Material of stays steel  
 Diameter at smallest part 6.49" Area supported by each stay 288 Working pressure by rules 234 Material of Front plates at bottom steel  
 Thickness 1" Material of Lower back plate steel Thickness 1 1/2" Greatest pitch of stays 14 1/4" Working pressure of plate by rules 180  
 Diameter of tubes 2 1/2" Pitch of tubes 3 1/2" x 3 1/4" Material of tube plates steel Thickness: Front 1" Back 13/16" Mean pitch of stays 9 3/8"  
 Pitch across wide water spaces 13 7/16" Working pressures by rules 198 Girders to Chamber tops: Material steel Depth and thickness of girder at centre 9 1/2" x 20 1" Length as per rule 3' 0" Distance apart 8 3/4" Number and pitch of stays in each 4 @ 7 1/2"  
 Working pressure by rules 238 Steam dome: description of joint to shell no % of strength of joint no Diameter no  
 Thickness of shell plates Material Description of longitudinal joint no Diameter of rivet holes no Pitch of rivets no  
 Working pressure of shell by rules no Crown plates: Thickness no How stayed no



Lloyd's Register Foundation

W839-0018



IS A DONKEY BOILER FITTED? no If so, is a report now forwarded?

The foregoing is a correct description,  
The Westinghouse Machine Company Manufacturers.  
By J. A. Davies. Engineer, Marine Dept

G. Norman Scott  
Chief Engineer

Dates of Examination of principal parts—Casings <sup>H.P.</sup><sub>2-6-16</sub> <sup>L.P.</sup><sub>11-7-16</sub> Rotors <sup>H.P.</sup><sub>2H-16</sub> <sup>" L.P."</sup><sub>12-4-16</sub> Blading <sup>" donkey "</sup><sub>30-8-16</sub> Gearing <sup>" p'ded 2<sup>d</sup>red</sup><sub>27-6-16</sub> <sup>" red"</sup><sub>12-4-16</sub>

Rotor shaft <sup>L.P.</sup><sub>1K-6-16</sub> <sup>H.P.</sup><sub>1K-6-16</sub> Thrust shaft <sub>9-3-16</sub> Tunnel shafts <sub>1-7-16</sub> Screw shaft <sub>1-7-16</sub> Propeller <sub>25-8-16</sub>

Stern tube <sub>1-7-16</sub> Steam pipes tested <sub>4-12-16</sub> Engine and boiler seatings <sub>25-8-16</sub> Engines holding down bolts <sub>20-10-16</sub>

Completion of pumping arrangements <sub>31-1-17</sub> Boilers fired <sub>8-12-16</sub> Engines tried under steam <sub>31-1-17</sub>

Main boiler safety valves adjusted <sub>21-1-17</sub> Thickness of adjusting washers <sub>look auto fitted</sub>

Material and tensile strength of Rotor shafts <sub>Inert Steel 62800 lbs sq in 62800 lbs sq in</sub> Identification Mark on Do. <sub>8063 JB. 8051 JB</sub>

Material and tensile strength of Pinion shafts <sub>Nickel Steel Flexible hollow pinion shafts and flexible hollow shafts</sub> Identification Mark on Do. <sub>1389 JB B1 F1 A2 C1 A3 B2 A1 F2 B3</sub>

Material of Wheel shafts <sub>Inert Steel</sub> Identification Mark on Do. <sub>1561 JB</sub>

Material of Thrust shaft <sub>Inert Steel</sub> Identification Mark on Do. <sub>1699</sub>

Material of Tunnel shafts <sub>Steel</sub> Identification Marks on Do. <sub>1699</sub>

Material of Screw shafts <sub>Steel</sub> Identification Marks on Do. <sub>1699</sub>

Material of Steam Pipes <sub>copper</sub> Test pressure <sub>360 lbs per sq in</sub>

Is an installation fitted for burning oil fuel? <sub>yes ✓</sub> Is the flash point of the oil to be used over 150°F. <sub>yes ✓</sub>

Have the requirements of Section 49 of the Rules been complied with? <sub>yes ✓</sub>

Is this machinery a duplicate of a previous case? <sub>No ✓</sub> If so, state name of vessel <sub>✓</sub>

This Machinery has been built under special survey, the materials and workmanship are of good quality, the hydraulic tests on the cylinders and the shop steaming trials proved satisfactory. The machinery has been shipped to Chester to be fitted in the vessel. Philadelphia Surveyors notified.

The machinery has been securely fitted aboard, and proved satisfactory on strain trial. It is submitted that this vessel is eligible for record of + L.M.C. 2.17 in the Register Book.

Filed for oil fuel 2.17. F.P. above 130° F.  
2 Steam Turbines geared to 1 Screw Shaft.  
William Duff & A. T. Thomas *AW*  
Engineer-Surveyor to Lloyd's Register of Shipping 30/3/17

*Assigned*

+ Lmb 2.17  
Filled for oil fuel 2.17 3.1. above 1500 ft