

# REPORT ON MACHINERY.

3390  
No. 17015

REC'D NEW YORK *Sept 2 1919*  
REC'D NEW YORK *June 25 1919*

Received at London Office

Date of writing Report *26 Aug 1919* When handed in at Local Office *28 Aug 1919* Port of *New York N.Y. and Philadelphia*  
No. in Survey held at *Philadelphia* Date, First Survey *13 July 1919* Last Survey *26 Aug 1919*  
Reg. Book. *"LIBERTY LAND"* (Number of Visits *39*)

Master *A.L. Cornwall* Built at *Philadelphia* By whom built *American International Corp* When built *1919*  
Engines made at *Philadelphia* By whom made *Tourel Electric Company* when made *1919*  
Boilers made at *Bayonne N.J.* By whom made *Babcock & Wilcox Co. NB 597* when made *1918*  
Registered Horse Power *600* Owners *United States Shipping Board* Port belonging to *Philadelphia*  
Shaft Horse Power at Full Power *2500* Is Refrigerating Machinery fitted for cargo purposes *no* Is Electric Light fitted *yes*

TURBINE ENGINES, &c.—Description of Engines *Grand turbine gear 13257* No. of Turbines *One*  
Diameter of Rotor Shaft Journals, H.P. *8"* L.P. *7"* Diameter of Pinion Shaft *7"*  
Diameter of Journals *4.10"* Distance between Centres of Bearings *5.28"* Diameter of Pitch Circle *4.57.888"*  
Diameter of Wheel Shaft *14"* Distance between Centres of Bearings *2.5.P. 63 1/4"* Diameter of Pitch Circle of Wheel *9.54.258"*  
Width of Face *20.44* Diameter of Thrust Shaft under Collars *13.35"* Diameter of Tunnel Shaft *12.48"*  
No. of Screw Shafts *one line* Diameter of same *12"* Diameter of Propeller *17'0"* Pitch of Propeller *13'9"*  
No. of Blades *4* State whether Moveable *no* Total Surface *98.8 sq ft* Diameter of Rotor Drum, H.P. *12"* L.P. *12"* Astern *12"*  
Thickness at Bottom of Groove, H.P. *1/8"* L.P. *1/8"* Astern *1/8"* Revs. per Minute at Full Power, Turbine *3234* Propeller *90*

## PARTICULARS OF BLADING.

	H.P.			L.P.			ASTERN.		
	ACTIVE HEIGHT OF BLADES.	PITCH DIAMETER AT TIP.	NO. OF ROWS.	HEIGHT OF BLADES.	DIAMETER AT TIP.	NO. OF ROWS.	ACTIVE HEIGHT OF BLADES.	PITCH DIAMETER AT TIP.	NO. OF ROWS.
1ST EXPANSION	7.5-1.25	2'-11 1/2"	2				8.125-1.5	3'-3"	2
2ND "	6.25	3'-9"	1				3.275	3'-3"	1
3RD "	1.25	3'-10 1/2"	1						
4TH "	2.5	4'-0"	1						
5TH "	6.0	4'-2"	1						
6TH "									
7TH "									
8TH "									

No. and size of Feed pumps *Two 10"x6"x24"*  
No. and size of Bilge pumps *Two 12"x8 1/2"x12" and 10"x12"x12"*  
No. and size of Bilge suction in Engine Room *Two 3 1/2" dia, thrust recess 1-2 1/2", fire room 2-3 1/2"*  
*In Holds, &c. No 1 Two-3 1/2", No 2 Two-3 1/2", No 3 Two-3 1/2", No 4 No-3 1/2", No 5 No-3 1/2", Tunnel well one-3 1/2"*  
No. of Bilge Injections *one* sizes *10"* Connected to condenser, or to circulating pump *no* 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 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 *Upper engine platform*

SEE REPORT 5  
BOILERS, &c.—(Letter for record *S*) Manufacturers of Steel  
Total Heating Surface of Boilers *8700* Is Forced Draft fitted *yes* No. and Description of Boilers *3 Watertube Boilers*  
Working Pressure *250* Tested by hydraulic pressure to *250* Date of test *1919* No. of Certificate *1*  
Can each boiler be worked separately *yes* Area of fire grate in each boiler *100 sq ft* No. and Description of Safety Valves to each boiler *one* Area of each valve *100 sq ft* Pressure to which they are adjusted *250* Are they fitted with easing gear *yes*  
Smallest distance between boilers or uptakes and bunkers or woodwork *12"* Mean dia. of boilers *36"* Length *12'* Material of shell plates *steel*  
Thickness *3/16"* Range of tensile strength *50,000* Are the shell plates welded or flanged *yes* Descrip. of riveting: cir. seams *yes*  
long. seams *yes* Diameter of rivet holes in long. seams *1/4"* Pitch of rivets *2"* Lap of plates or width of butt straps *1"*  
Per centages of strength of longitudinal joint *85%* rivets *85%* Working pressure of shell by rules *250* Size of manhole in shell *18"* plates *85%*  
Size of compensating ring *18"* No. and Description of Furnaces in each Boiler *one* Material *steel* Outside diameter *36"*  
Length of plain part *12'* top *12'* Thickness of plates *3/16"* bottom *3/16"* Description of longitudinal joint *butt* No. of strengthening rings *1*  
Working pressure of furnace by the rules *250* Combustion chamber plates: Material *steel* Thickness: Sides *3/16"* Back *3/16"* Top *3/16"* Bottom *3/16"* Working pressure by rules *250*  
Pitch of stays to ditto: Sides *12"* Back *12"* Top *12"* If stays are fitted with nuts or riveted heads *yes* Working pressure by rules *250* End plates in steam space *yes*  
Material of stays *steel* Diameter at smallest part *1/2"* Area supported by each stay *100 sq ft* Working pressure by rules *250* Material of stays *steel*  
Material *steel* Thickness *3/16"* Pitch of stays *12"* How are stays secured *with nuts* Working pressure by rules *250* Material of Front plates at bottom *steel*  
Diameter at smallest part *1/2"* Area supported by each stay *100 sq ft* Working pressure by rules *250* Working pressure of plate by rules *250*  
Thickness *3/16"* Material of Lower back plate *steel* Thickness *3/16"* Greatest pitch of stays *12"* Working pressure of plate by rules *250* Mean pitch of stays *12"*  
Diameter of tubes *1 1/2"* Pitch of tubes *12"* Material of tube plates *steel* Thickness: Front *3/16"* Back *3/16"* Mean pitch of stays *12"*  
Pitch across wide water spaces *12"* Working pressures by rules *250* Girders to Chamber tops: Material *steel* Depth and thickness of girder at centre *12"* Length as per rule *12'* Distance apart *12'* Number and pitch of stays in each *12"*  
Working pressure by rules *250* Steam dome: description of joint to shell *butt* % of strength of joint *85%* Diameter of rivet holes *1/4"* Pitch of rivets *2"*  
Thickness of shell plates *3/16"* Material *steel* Description of longitudinal joint *butt* Diameter of rivet holes *1/4"* Pitch of rivets *2"*  
Working pressure of shell by rules *250* Crown plates: Thickness *3/16"* How stayed *with stays*



