

REPORT ON MACHINERY.

No. 3140

Received at London Office

REC'D NEW YORK March 13 1919
 Date of writing Report March 13 1919 When handed in at Local Office March 14 1919 Port of Philadelphia
 No. in Survey held at Trenton & Chester Date, First Survey Feb 11 1918 Last Survey March 3 1919
 Reg. Book. S.S. "South Bend" (Number of Visits 4) Tons Gross 8439 Net 5453

Master W. D. Lenz Built at Chester By whom built Penn Ship. Co When built 1918
 Engines made at Trenton By whom made De Laval Steam Turbine Co (27285-89) when made 1918
 Boilers made at Phoenixville, Pa. By whom made Heine Safety Boiler Co when made 1918
 Registered Horse Power Owners United States Shipping Board Port belonging to Washington
 Shaft Horse Power at Full Power 5500 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

TURBINE ENGINES, &c.—Description of Engines De Laval Single Reduction Geared Turbines No. of Turbines 4
 Diameter of Rotor Shaft Journals, H.P. 6" L.P. 6" Diameter of Pinion Shaft 5"
 Diameter of Journals 5" Distance between Centres of Bearings 27 3/8" Diameter of Pitch Circle 5.4"
 Diameter of Wheel Shaft 13 5/8" Distance between Centres of Bearings 60" Diameter of Pitch Circle of Wheel 119.8
 Width of Face 2 @ 29" Diameter of Thrust Shaft under Collars 13.75" Diameter of Tunnel Shaft as per rule 12.1" 12.05"
 No. of Screw Shafts 2 Diameter of same as per rule 12.89" 12.98" Diameter of Propeller 15'-0" Pitch of Propeller 14.6"
 No. of Blades 3 State whether Moveable No Total Surface 62.7" Diameter of Rotor Drum, H.P. L.P. Astern
 Thickness at Bottom of Groove, H.P. L.P. Astern Revs. per Minute at Full Power, Turbine 2440 Propeller 110

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	1.159 32.551 2	1.772 50.081 1	1.668 39.134 2
2ND	1.159 32.551 1	2.166 50.873 1	1.159 39.134 2
3RD	1.159 32.551 1	2.756 52.051 1	1.159 39.134 2
4TH	1.159 32.551 1	3.150 51.573 1	1.159 39.134 2
5TH	1.159 32.551 1	4.015 53.313 1	1.159 39.134 2
6TH	1.159 32.551 1	4.734 54.833 1	1.159 39.134 2
7TH	1.159 32.551 1	6.300 55.743 1	1.159 39.134 2
8TH	1.159 32.551 1		1.159 39.134 2

No. and size of Feed pumps 2 - 15" x 11" x 24"
 No. and size of Bilge pumps 3 - 1-10" x 8 1/2" x 10" 1-7 1/2" x 5" x 6" 1-7 1/2" x 8 1/2" x 6"
 No. and size of Bilge suction in Engine Room 4 Bilge rooms 4 - 3 1/2" & 2 - 2 1/2" in turbine recess
 In Holds, &c. No's 1-2-3-4-5-6 - 2 - 3 1/2" in each
 No 7 hold 1-3 1/2" - No 8 hold 2-3 1/2" Sump wells. 2 - 3 1/2"
 No. of Bilge Injections 2 sizes 10" Connected to condenser, or to circulating pump pump Is a separate Donkey Suction fitted in Engine Room & size 5"
 Are all the bilge suction pipes fitted with roses Yes Are the roses in Engine room always accessible Both
 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 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 Yes Is it fitted with a watertight door Yes worked from Engine room platform & top deck aft.

BOILERS, &c.—(Letter for record S) Manufacturers of Steel World Bros & Co. & Lukens Steel Co.
 Total Heating Surface of Boilers 15520 Is Forced Draft fitted Yes No. and Description of Boilers Four main water tube (Heine) boilers
 Working Pressure 225 lbs Tested by hydraulic pressure to 450 lbs Date of test 11-11-18 No. of Certificate 258
 Can each boiler be worked separately Yes Area of fire grate in each boiler 49 1/2" No. and Description of Safety Valves to each boiler 2 Spring loaded Area of each valve 9.62 Pressure to which they are adjusted 225 lbs Are they fitted with easing gear Yes
 Smallest distance between boilers or uptakes and bunkers or woodwork 54" Mean dia. of drums 4'-6 1/2" Length 17'-4" Material of shell plates S
 Thickness 1/4" Range of tensile strength 58000 to 72000 Are the shell plates welded or flanged No Descrip. of riveting: cir. seams D.L.
 long. seams FAB D B S Diameter of rivet holes in long. seams 1 1/4" Pitch of rivets 7 3/4" Lap of plates or width of butt straps 1-18 1/2" 0-11 1/2"
 Per centages of strength of longitudinal joint rivets H1 plates 84.2 Working pressure of shell by rules 305.6 Size of manhole in shell 15" x 11"
 Size of compensating ring flanged No. and Description of Furnaces in each Boiler 3 Material Outside diameter
 Length of plain part top crown bottom Description of longitudinal joint No. of strengthening rings
 Working pressure of furnace by the rules 305.6 Combustion Chamber plates: Material S Thickness: Sides 3/4" Back 3/4" Top 3/4" Bottom 3/4"
 Pitch of stays to ditto: Sides Back Top If stays are fitted with nuts or riveted heads Riveted Working pressure by rules 418
 Material of stays S Diameter at smallest part 1 1/4" 3/4" hole Area supported by each stay 33.2 sq Working pressure by rules 391.6 End plates in steam space
 Material S Thickness 3/4" Pitch of stays How are stays secured Dished Working pressure by rules 225 lbs Material of stays
 Diameter at smallest part Area supported by each stay Working pressure by rules Material of Front plates at bottom
 Thickness Material of Lower back plate Thickness Greatest pitch of stays Working pressure of plate by rules
 Diameter of tubes 4" 0.0 Pitch of tubes 7 1/2" x 4 1/2" Material of tube plates S Thickness: Front and Back 3/4" Mean pitch of stays 4'-6 1/2" x 7'-2 1/2"
 Pitch across wide water spaces Working pressures by rules Girders to Chamber tops: Material Depth and
 thickness of girder at centre Length as per rule Distance apart Number and pitch of stays in each
 Working pressure by rules 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

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Sun Shipbuilding Co
CHES

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- 2 Ordinary thrust chases
- 1 Cut lances for adjusting blocks
- 1 Bucket & rod for lub 2 for
- Bolt wrench

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