

## REPORT ON MACHINERY

No. 964

SAT. 10 JAN. 1917

REC'D NEW YORK Dec. 14 1917  
Received at London Office  
Date of writing Report 6 Dec 1917 When handed in at Local Office 6 Dec 1917 Port of Boston  
No. in Survey held at Quincy, Mass Date, First Survey 8 May 1916 Last Survey 28 Nov 1917  
Reg. Book. 9 on the steel twin screw steamer '265' ex F. J. LUCKENBACH (Number of Visits 20)  
Tons Gross 8074 Net 5123  
Master Built at Quincy, Mass. By whom built Bethlehem Shipbuilding Corporation Fore River Plant When built Nov 1917  
Engines made at Quincy By whom made D- when made 1917  
Boilers made at Phoenixville, Pa By whom made Heine Safety Boiler Co. when made 1917  
Registered Horse Power 1008 NHP Owners U.S. Shipping Board Port belonging to Boston  
Shaft Horse Power at Full Power 4500 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted yes

## TURBINE ENGINES, &amp;c.—Description of Engines

Curtis turbines geared

No. of Turbines 2

Diameter of Rotor Shaft Journals, 8" Diameter of Pinion Shaft 1st speed 4" 2nd Speed 9" with 6" hole  
Diameter of Journals (1st) 6" (2nd) 9" Distance between Centres of Bearings (1st) 32" (2nd) 40" Diameter of Pitch Circle (1st) 7" (2nd) 11 27"  
Diameter of Wheel Shaft (1st) 5 3/4" (2nd) 12" Distance between Centres of Bearings (1st) 41" (2nd) 40" Diameter of Pitch Circle of Wheel (1st) 52" (2nd) 47 6"  
Width of Face (1st) 10" (2nd) 12" Diameter of Thrust Shaft under Collars 1 1/2 12 1/4" Diameter of Tunnel Shaft as per rule 11 3" as fitted 11 1/2"  
No. of Screw Shafts 2 Diameter of same as per rule 1 3/8" as fitted 1 3/8" Diameter of Propeller 14-6" Pitch of Propeller 14-4"  
No. of Blades 3 State whether Moveable No Total Surface 74 ft Diameter of Rotor 34 3/8-43-43 1/2-44 1/2-44 3/8" as stern 38"  
Thickness at Bottom of Groove, H.P. As per L.P. approved Astern plan Revs. per Minute at Full Power, Turbine 3430 Propeller 109

## PARTICULARS OF BLADING.

STAGE	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	5 1/2 + 1 1/2	36 7/8 + 37 1/2	2				1" + 2"	41 1/2 + 42 1/2	2
2ND	1"	46 1/2	1						
3RD	1 1/2"	47 3/4	1						
4TH	2 3/4"	51	1						
5TH	4 1/2"	54 3/4	1						
6TH									
7TH									
8TH									

No. and size of Feed pumps Two 14" x 10" x 24" simple case  
No. and size of Bilge pumps Bilge 6 x 7 1/2 x 6 General Service 12 x 8 1/2 x 12 Deck Service 7 1/2 x 5 x 6 All dup case pumps  
No. and size of Bilge suction in Engine Room 4 - 3 1/2"

In Holds, &amp;c. 2-3 1/2" in each hold except No 4 hold

which has 1-3 1/2"  
No. of Bilge Injections 1 sizes 10" Connected to condenser, or to circulating pump pump Is a separate Donkey Suction fitted in Engine Room & size yes 2-4"  
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 yes Are they Valves or Cocks Valves + cocks  
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 No bunkers Oil fuel fitted How are they protected  
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 shelter deck

## BOILERS, &amp;c.—(Letter for record 15) Manufacturers of Steel

Worth Bros

Total Heating Surface of Boilers 15520 Is Forced Draft fitted yes No. and Description of Boilers 4 Heine Water Tube Boilers  
Working Pressure 195 lbs Tested by hydraulic pressure to 2" 450 lbs Date of test 24-26 Oct 1917 No. of Certificate 19-20  
Can each boiler be worked separately yes Area of fire grate in each boiler Oil fired No. and Description of Safety Valves to each boiler 2 spring loaded Area of each valve 9 62 sq" Pressure to which they are adjusted 195 lbs Are they fitted with easing gear yes  
Smallest distance between boilers or uptakes and bunkers or woodwork about 4 feet Mean dia. of boilers 54 Length 17' 4" Material of shell plates steel  
Thickness 11/16" Range of tensile strength 55000/72000 Are the shell plates welded or flanged no Descrip. of riveting: cir. seams D.R. lap  
long. seams T.R. D.B.S Diameter of rivet holes in long. seams 1 1/16 Pitch of rivets 7 3/4 Lap of plates or width of butt straps 11 1/2 x 18 3/16  
Per centages of strength of longitudinal joint rivets 111 plates 86.3 Working pressure of shell by rules 267 lbs Size of manhole in steel 15 x 11  
Size of compensating ring Flanged No. and Description of Furnaces in each Boiler Material Outside diameter  
Length of plain part top Thickness of plates crown Description of longitudinal joint No. of strengthening rings  
bottom Thickness of plates bottom  
Working pressure of furnace by the rules Combustion chamber plates: Material Thickness: Sides Back Top Bottom  
Pitch of stays to ditto: Sides Back Top If stays are fitted with nuts or riveted heads Working pressure by rules  
Material of stays Diameter at smallest part Area supported by each stay Working pressure by rules End plates in steam space  
Material Steel Thickness 3/4 Pitch of stays Dished ends How are stays secured Working pressure by rules 225 Material of stays  
Diameter at smallest part Area supported by each stay Working pressure by rules Material of Front plates at bottom Steel  
Thickness 3/4 Material of Lower back plate Steel Thickness 3/4 Greatest pitch of stays 4 3/8 x 7 1/2 Working pressure of plate by rules 408 lbs  
Diameter of tubes 3 1/2 Pitch of tubes 7 1/4 x 7 Material of tube plates steel Thickness: Front 3/4 Back 3/4 Mean pitch of stays 7 1/8  
Pitch across wide water spaces Working pressures by rules 283 lbs 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 None % 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



Superheaters were made opposite tank to boiler & vessel sailed without the  
SUPERHEATER. Type Not fitted Date of Approval of Plan ✓ Tested by Hydraulic Pressure to ✓

Date of Test ✓ Is a Safety Valve fitted to each Section of the Superheater which can be shut off from the Boiler ✓  
Diameter of Safety Valve ✓ Pressure to which each is adjusted ✓ Is Easing Gear fitted ✓

IS A DONKEY BOILER FITTED?

No

If so, is a report now forwarded? ✓

SPARE GEAR. State the articles supplied:—

1 Turbine thrust shoe, 1 complete set of Turbine bearings, 1 complete set of labyrinth packing rings, 1 complete set of bearings for 1st speed pinion & wheels, 1 complete set of bearings for 2nd speed pinions & wheels. One set of line shaft coupling bolts, Spare impeller & shaft, circulating pump, spare buckets, rods & parts for air pump, feed & bilge pumps, lubricating oil pumps, oil cooler, & spare parts for all other pumps including fuel oil pumps. 2 Cast Iron Propellers, 1 Propeller shaft, 30 Condenser tubes, 35 Boiler tubes, one set feed check valves, spare oil burners etc. Assorted nuts, bolts & iron.

The foregoing is a correct description.

Bethlehem Shipbuilding Corporation, Fore River Plant Manufacturer.

St. Nicholas June 1898

1916 May 8 June 2, 5, 12, 14 July 6, 11, 14, 17, 19, 21 Aug 2, 8, 10, 11, 15, 19, 24, 29 Sept 5, 21, Oct 3, 5, 19, 25, 31 Nov 1, 20 Dec 11, 23, 24  
Dates of Survey while building { During progress of work in shops - - 1917 Jan 4, 9, 11, 13, 23 Feb 3, 7, 23 March 9, 19, 27 April 2, 10, 13, 28 May 1, 17, 28 June 1, 11, 20 July 3, 9, 19, Aug 2, 20, 27 Sept 4  
During erection on board vessel - - - Sept 8, 19, 12, 18, 28 Oct 2, 5, 10, 15, 19, 22, 23, 24, 26 Nov 1, 6, 13, 20, 23, 26, 28  
Total No. of visits 80 Is the approved plan of main boiler forwarded herewith Copy ✓

Dates of Examination of principal parts—Casings 4 Jan 1917 Rotors 1 June 1917 Blading 2 Aug 1917 Gearing 2 Aug 1917

Rotor shaft 2 April 1917 Thrust shaft 27 Aug 1917 Tunnel shafts 27 Aug 1917 Screw shaft 17 May 1917 Propeller 12 Sept 1917

Stern tube 8 Sept 1917 Steam pipes tested 22 Oct 1917 Engine and boiler seatings 3 July 1917 Engines holding down bolts 19 Oct 1917

Completion of pumping arrangements 20 Nov 1917 Boilers fired 26 Oct 1917 Engines tried under steam 28 Nov 1917

Main boiler safety valves adjusted 26 Nov 1917 Thickness of adjusting washers Starb<sup>1/4</sup> Starb<sup>1/2</sup> Starb<sup>3/4</sup> Centre 5 1/4 Port Centre 5 1/4 Port 8 1/8

Material and tensile strength of Rotor shaft Nickel steel 80,000 lbs Identification Mark on Do. 167

Material and tensile strength of Pinion shaft & 1st speed Wheel Shafts D<sup>2</sup> Identification Mark on Do. 167

Material of Wheel shaft Steel Identification Mark on Do. 167 Material of Thrust shaft Steel Identification Mark on Do. 167

Material of Tunnel shafts Steel Identification Marks on Do. 167 Material of Screw shafts Steel Identification Marks on Do. 167

Material of Steam Pipes Steel ✓ Test pressure 700 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 No ✓ If so, state name of vessel ✓

General Remarks (State quality of workmanship, opinions as to class, etc. The drums & headers of the water tube boilers

were built at Phenixville, Pa & they were riveted together, the tubes fitted & the boilers tested on board the vessel.

The machinery & boilers of this vessel have been built & fitted on board in

accordance with the Rules & approved plans & the workmanship & material are good. They have

been satisfactorily tried under steam, at sea, & in my opinion, they are now in good & safe

working condition & eligible to receive the notations + LMC 11.17, FD & 'FITTED FOR

OIL FUEL 11.17 F.P. ABOVE 150°F in the Register Book, subject to the water tube boilers

being annually surveyed.

It is submitted that this vessel is eligible for THE RECORD. + LMC 11.17. F.D.

2 Steam Turbines geared to 2 Screw Shafts. Fitted for oil fuel 11.17. F.P. above 150°F. Subject to the Water Tube boilers being Annually Surveyed

The amount of Entry Fee ... £ \$15.00 When applied for, 11 Dec 1917

Special 3/4. ... £ 216.00 When received, 1st Feb 1918

Donkey Boiler Fee ... £ Travelling Expenses (if any) £

Committee's Minute New York DEC 18 1917

Assigned + Lmc 11.17 Fitted for oil fuel 11.17 F.P. above 150°F.

Subject Elec Light

MACHINERY CERTIFICATE WRITTEN 10-1-18

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