

REPORT ON MACHINERY.

No. 17415  
3518

Received at London Office

Date of writing Report *Nov 6 1919* When handed in at Local Office *Nov 6 1919* Port of *New York N.Y.*  
No. in Survey held at *Schenectady N.Y.* Date, First Survey *Feb 24* Last Survey *Nov 6 1919*  
Reg. Book. *S.S. Daniel Webster* (Number of Visits *31*) Tons { Gross *8289.24*  
on the *S.S. Daniel Webster* Net *6147.0*

Master *J.W. Nichols* Built at *Gloucester* By whom built *Pusey & Jones Co* When built *1919*  
Engines made at *Schenectady N.Y.* By whom made *General Electric Co.* when made *1919*  
Boilers made at *Bayonne N.J.* By whom made *Babcock & Wilcox Co* when made *1919*  
Registered Horse Power Owners *U.S. Shipping Board* Port belonging to *Gloucester City N.J.*  
Shaft Horse Power at Full Power *3000* Is Refrigerating Machinery fitted for cargo purposes *No* Is Electric Light fitted *Yes*

URBINE ENGINES, &c.—Description of Engines *Grand Turbine gas 2559* No. of Turbines *One*  
Diameter of Rotor Shaft Journals, H.P. *8"* L.P. *✓* Diameter of Pignon Shaft *7"*  
Diameter of Journals *H.S.P. 4"* Distance between Centres of Bearings *H.S.P. 33"* Diameter of Pitch Circle *H.S.P. 7.833"*  
Diameter of Wheel Shaft *16 1/2"* Distance between Centres of Bearings *L.S.P. 45 1/2"* Diameter of Pitch Circle of Wheel *L.S.P. 10.75"*  
Width of Face *20.5"* Diameter of Thrust Shaft under Collars *14"* Diameter of Tunnel Shaft *as per rule 13.2"*  
No. of Screw Shafts *one* Diameter of same *as per rule 14.5"* Diameter of Propeller *17 1/2"* Pitch of Propeller *13.4"*  
No. of Blades *4* State whether Moveable *Yes* Total Surface *84.4 sq ft* 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 *3374.5* Propeller *90*

ARTICULARS 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.
ST EXPANSION	1.0"-1.75"	2'-11 1/2"	2						1.125"-1.75"	2'-3"	2
ND	.875"	3'-8"	1						3.5"	2'-3"	1
RD	1.75"	3'-10 1/2"	1								
TH	3.25"	4'-0"	1								
TH	7.125"	4'-2"	1								
TH											
TH											
TH											

To. and size of Feed pumps *2 @ 12" x 8" x 24"*  
To. and size of Bilge pumps *2 @ 10" x 8 1/2" x 10"*  
To. and size of Bilge suction in Engine Room *1 Blk Room 4-3/2 11 spec 3 1/2*  
In Holds, &c. *2-3/2 in each hold*

To. of Bilge Injections *1* sizes *10"* Connected to condenser, or to circulating pump *Is a separate Donkey Suction fitted in Engine Room & size 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*  
That pipes are carried through the bunkers *Bilge pipes* How are they protected *Steel covering*  
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 *top platform*

BOILERS, &c.—(Letter for record *S*) Manufacturers of Steel *Central Iron & Steel Co*  
Total Heating Surface of Boilers *8706 sq ft* Is Forced Draft fitted *Yes* No. and Description of Boilers *3 Babcock & Wilcox*  
Working Pressure *205 lbs* Tested by hydraulic pressure to *400 lbs* Date of test *2-10-19* No. of Certificate *378*  
In each boiler be worked separately *Yes* Area of fire grate in each boiler *87.5 sq ft* No. and Description of Safety Valves to *Are they fitted with easing gear*  
Each boiler *double spring loaded* Area of each valve *7.06 sq ft* Pressure to which they are adjusted *210 lbs* Are they fitted with easing gear *Yes*  
Smallest distance between boilers or uptakes and bunkers or woodwork \_\_\_\_\_ Mean dia. of boilers \_\_\_\_\_ Length \_\_\_\_\_ Material of shell plates \_\_\_\_\_  
Thickness \_\_\_\_\_ Range of tensile strength \_\_\_\_\_ Are the shell plates welded or flanged \_\_\_\_\_ Descrip. of riveting: cir. seams \_\_\_\_\_  
g. seams \_\_\_\_\_ Diameter of rivet holes in long. seams \_\_\_\_\_ Pitch of rivets \_\_\_\_\_ Lap of plates or width of butt straps \_\_\_\_\_

Water \_\_\_\_\_ Centages of strength of longitudinal joint \_\_\_\_\_ Working pressure of shell by rules \_\_\_\_\_ Size of manhole in shell \_\_\_\_\_  
\_\_\_\_\_ of compensating ring \_\_\_\_\_ No. and Description of Furnaces in each Boiler \_\_\_\_\_ Material \_\_\_\_\_ Outside diameter \_\_\_\_\_  
\_\_\_\_\_ of plain part \_\_\_\_\_ Thickness of plates \_\_\_\_\_ Description of longitudinal joint \_\_\_\_\_ No. of strengthening rings \_\_\_\_\_  
Working pressure of furnace by the rules \_\_\_\_\_ Combustion chamber plates: Material \_\_\_\_\_ Thickness: Sides \_\_\_\_\_ Back \_\_\_\_\_ Top \_\_\_\_\_ Bottom \_\_\_\_\_  
\_\_\_\_\_ 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 \_\_\_\_\_ Thickness \_\_\_\_\_ Pitch of stays \_\_\_\_\_ How are stays secured \_\_\_\_\_ Working pressure by rules \_\_\_\_\_ 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 \_\_\_\_\_ Pitch of tubes \_\_\_\_\_ Material of tube plates \_\_\_\_\_ Thickness: Front \_\_\_\_\_ Back \_\_\_\_\_ Mean pitch of stays \_\_\_\_\_  
\_\_\_\_\_ 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 \_\_\_\_\_





SUPERHEATER. Type *Loose* Date of Approval of Plan *New York* Tested by Hydraulic Pressure to *600 lbs*  
Date of Test *2-10-19* Is a Safety Valve fitted to each Section of the Superheater which can be shut off from the Boiler *Yes*  
Diameter of Safety Valve *1 1/2"* Pressure to which each is adjusted *210 lbs* Is Easing Gear fitted *Yes*

IS A DONKEY BOILER FITTED? *None* If so, is a report now forwarded?

SPARE GEAR. State the articles supplied:— *2 studs nuts for each size of rotor bearing; 2 studs nuts main gear bearing; 2 studs nuts pinion bearing; 1 set of coupling bolts; 20 of total run of bolts nuts for each gear case joint & turbine casing joint; 2 thermometers for oil cooling system; 1 set of bearing bushes for gear wheel, rotor & pinion shaft; 2 set of packing rings for each gland of rotor shaft complete; 1 set of turbine thrust collar; 1 set of feed valve pump valves; 1 set of valves for lubricating oil pump; a quantity of assorted bolts nuts; bars & plates of mild steel; 2 ordinary thrust collar; 2 propeller blades*

The foregoing is a correct description,

*General Electric Co.*  
*per S. A. Burg*

Manufacturer.

*Chief Engineer*

Dates of Survey while building  
During progress of work in shops - - *7-11-17: 23-11-17: 6-12-17: 18-12-17: 7-2-18: 28-3-18: 4-4-18: 6-4-18*  
During erection on board vessel - - *6-6-18: 17-7-19: 29-7-19: 18-9-18*  
Total No. of visits *31*  
Is the approved plan of main boiler forwarded herewith *Yes*

Dates of Examination of principal parts—Casings *18-9-18* Rotors *18-9-18* Blading *6-6-18* Gearing *23-11-18*  
Rotor shaft *7-17-19* Thrust shaft *3-6-19* Tunnel shafts *14-10-19* Screw shaft *7-10-19* Propeller *7-10-19*  
Stern tube *4-8-19* Steam pipes tested *15-10-19* Engine and boiler seatings *26-8-19* Engines holding down bolts *7-10-19*  
Completion of pumping arrangements *31-10-19* Boilers fixed *26-8-19* Engines tried under steam *31-10-19*  
Main boiler safety valves adjusted *31-10-19* Thickness of adjusting washers *Lock nuts*  
Material and tensile strength of Rotor shaft *Dist 80,000 lbs. 1" minimum* Identification Mark on Do. *T.G.D.*  
Material and tensile strength of Pinion shaft *" 85,000 "* Identification Mark on Do. *T.G.D.*  
Material of Wheel shaft *Dist* Identification Mark on Do. *T.G.D.* Material of Thrust shaft *Steel* Identification Mark on Do. *J.R.*  
Material of Tunnel shafts *Steel* Identification Marks on Do. *J.R.* Material of Screw shafts *Steel* Identification Marks on Do. *W.C.*  
Material of Steam Pipes *Steel* Test pressure *630 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 *Yes* If so, state name of vessel *"Abraham Lincoln"*

General Remarks (State quality of workmanship, opinions as to class, &c. *These engines have been constructed under special survey in accordance with the approved plans. The materials and workmanship are sound and good. The engines have been forwarded to Percy Jones Esq. Gloucester, N.Y. to be fitted on board. Philadelphia. The machinery and boilers of this vessel have been securely fitted on board and proved satisfactory under steam trial. It is submitted that the vessel be eligible for a record of + LMC-1. Fitted for oil fuel-11-19 Flash point above 150°F. in the Register Book*

The amount of Entry Fee ... £ *15.00* When applied for, *19*  
Special ... *Phila* £ *84.50* When received, *29/11/20*  
Donkey Boiler Fee ... £ *10.00*  
Travelling Expenses (if any) £ *10.00*

Committee's Minute *New York NOV 25 1919*

Assigned *+ LMC 11.19*

*J. H. D. Stewart*  
Engineer Surveyors to Lloyd's Register of Shipping.  
*J. Adamson*