

# REPORT ON MACHINERY.

Received at London Office

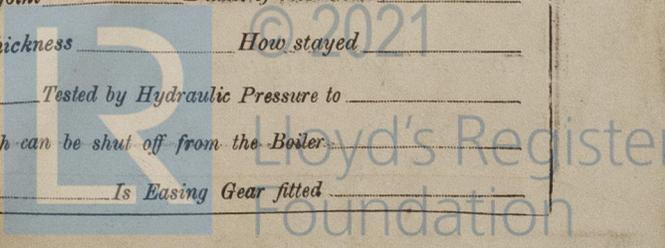
JUN 23 1919

Report of writing Report May 28 1919 When dictated in at Local Office May 29 1919 Port of Philadelphia  
 in Survey held at Wilmington Del Date, First Survey March 20 1918 Last Survey May 23 1919  
 eg. Book. on the Steel Screw Steamer "Moline" (Number of Voids 57)  
 Master Perseus Built at Wilmington Del By whom built Pusey & Jones Tons { Gross 2967.43  
 Engines made at Wilmington Del By whom made Pusey & Jones when made 1918 Net 1760.63  
 Moulders made at Sum Ship Bldg Co By whom made Chester Pa when made 1918  
 Registered Horse Power \_\_\_\_\_ Owners United States Shipping Board Port belonging to Washington  
 Net Horse Power as per Section 28. 332 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

**ENGINES, &c.**—Description of Engines Triple Expansion No. of Cylinders 3 No. of Cranks 3  
 Dia. of Cylinders 19 3/4 - 31 1/2 - 34 1/4 Length of Stroke 36 Revs. per minute 100 Dia. of Screw shaft as per rule 11.47 Material of Steel  
as fitted 12 screw shaft  
 Is the screw shaft fitted with a continuous liner the whole length of the stern tube Yes Is the after end of the liner made water tight  
 the propeller boss Yes If the liner is in more than one length are the joints burned Yes If the liner does not fit tightly at the part  
 between the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive Yes If two  
 liners are fitted, is the shaft lapped or protected between the liners Yes Length of stern bush 4'-6"  
 Dia. of Tunnel shaft as per rule 9.98 Dia. of Crank shaft journals as per rule 10.66 Dia. of Crank pin 11 1/2 Size of Crank webs 23 1/2 x 9 Dia. of thrust shaft under  
as fitted 10.25 as fitted 11.25 11 1/2 23 1/2 x 9  
 No. of blades 4 State whether moccable Yes Total surface 60  
 Dia. of screw 14'-6" Pitch of Screw 10'-9" No. of Feed pumps 2 Diameter of ditto 10 x 6 Stroke 18 Can one be overhauled while the other is at work Yes  
 No. of Bilge pumps 2 Diameter of ditto 4 1/2 x 8 1/2 x 10 Stroke 10 x 8 1/2 x 10 Can one be overhauled while the other is at work Yes  
 No. of Donkey Engines 2 Sizes of Pumps 5 1/4 x 4 3/4 x 5 No. and size of Suctions connected to both Bilge and Donkey pumps  
 Engine Room & Boiler room 4 - 3 In Holds, &c. NOS 1, 2 & 3 - 2 - 3  
No 4 - 1 - 3 1/2 Tunnel well 1 - 2 1/2  
 No. of Bilge Injections 1 sizes 8" Connected to condenser, or to circulating pump Yes 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 the sluices on Engine room bulkheads 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 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  
 How are they protected None  
 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

**BOILERS, &c.**—(Letter for record R) Manufacturers of Steel Lukens S & T Co  
 Total Heating Surface of Boilers 5554 Is Forced Draft fitted Yes No. and Description of Boilers 2 SE Scotch  
 Working Pressure 190 lbs Tested by hydraulic pressure to 285 lbs Date of test 31-7-18 No. of Certificate 218 A  
 Can each boiler be worked separately Yes Area of fire grate in each boiler 61.8 No. and Description of Safety Valves to  
 boiler 2 Spring loaded Area of each valve 9.62 Pressure to which they are adjusted 190 lbs Are they fitted with easing gear Yes  
 Smallest distance between boilers or uptakes and bunkers or woodwork 18" Mean dia. of boilers 15'-4 1/2 Length 11'-5" Material of shell plates Steel  
 Thickness 1 1/32 Range of tensile strength 60000 - 70000 Are the shell plates welded or flanged No Descrip. of riveting: cir. seams DR.L.  
 Material of rivets TR. DBS Diameter of rivet holes in long. seams 1 1/16 Pitch of rivets 8 1/16 Lap of plates or width of butt straps 20 3/4  
 Percentages of strength of longitudinal joint rivets 94.6% Working pressure of shell by rules 204 lbs Size of manhole in shell 12" x 16"  
 plate 83.4%  
 No. of compensating ring Flanged No. and Description of Furnaces in each boiler 3 Monson Material Steel Outside diameter 49 1/4  
 Length of plain part top Yes Thickness of plates crown 7/8 Description of longitudinal joint Weld No. of strengthening rings Yes  
 bottom Yes bottom 1 1/16  
 Working pressure of furnace by the rules 204 lbs Combustion chamber plates: Material Steel Thickness: Sides 7/8 Back 7/8 Top 7/8 Bottom 1 1/16  
 No. of stays to ditto: Sides 7 1/8 x 7 1/8 Back 7 1/8 x 7 Top 7 1/8 x 7 1/4 If stays are fitted with nuts or riveted heads Riveted heads Working pressure by rules 241 lbs  
 Material of stays W-1 Area at smallest part 1.694 Area supported by each stay 52.54 Working pressure by rules 191.9 End plates in steam space:  
 Material Steel Thickness 1 1/8 Pitch of stays 16 3/4 x 15 1/2 How are stays secured D. Nuts Working pressure by rules 196 Material of stays Steel  
 Area at smallest part 5.93 Area supported by each stay 259.6 Working pressure by rules 237 Material of Front plates at bottom Steel  
 Thickness 1" Material of Lower back plate Steel Thickness 1 1/16 Greatest pitch of stays 14 1/4 Working pressure of plate by rules 260  
 Diameter of tubes 2 1/2 Pitch of tubes 3 1/2 x 3 3/4 Material of tube plates Steel Thickness: Front 1" Back 3/4 Mean pitch of stays 10 1/2 x 7 1/2  
 Working pressures by rules 212 lbs Girders to Chamber tops: Material Steel Depth, and  
 thickness of girder at centre 9 1/4 x 1 3/4 Length as per rule 35 Distance apart 7 1/4 Number and pitch of stays in each 4 - 7 1/8  
 Working pressure by rules 237 lbs Steam dome: description of joint to shell \_\_\_\_\_ % of strength of joint \_\_\_\_\_  
 Diameter \_\_\_\_\_ Thickness of shell plates \_\_\_\_\_ Material \_\_\_\_\_ Description of longitudinal joint \_\_\_\_\_ Diam. of rivet holes \_\_\_\_\_  
 No. of rivets \_\_\_\_\_ Working pressure of shell by rules \_\_\_\_\_ Crown plates \_\_\_\_\_ Thickness \_\_\_\_\_ How stayed \_\_\_\_\_

**SUPERHEATER.** Type \_\_\_\_\_ Date of Approval of Plan \_\_\_\_\_ Tested by Hydraulic Pressure to \_\_\_\_\_  
 Material of Test \_\_\_\_\_ Is a Safety Valve fitted to each Section of the Superheater which can be shut off from the Boiler \_\_\_\_\_  
 No. 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:— 2 Main bearing bolts & nuts, 2 connecting rod bolts & nuts for top and bottom ends. 1 set piston rings for M.P. & L.P. pistons. 7 32 & 48 springs for M.P. & L.P. pistons. 1 set valves for all pumps. 12 condenser tubes, 25 ferrules, a quantity of assorted bolts, nuts & studs. 1 set coupling bolts. Iron of various sizes.

The foregoing is a correct description,

The Pusey & Jones Company  
per H. Q. Raymond, C.E. Manufacturer.

Dates of Survey while building  
 During progress of work in shops -- 1918. March 20-24, April 10-18-25, May 6-24, June 5-11-19-27, July 7-8-9-16-17-31, Aug 1-15-22, Sep 7-16, Oct 22-31  
 During erection on board vessel --- 1919. Dec 9-12-18, Jan 3-7-20, Feb 4-10-15-20-25, March 11-18-24, April 2-9-10-15-23, May 1-7-14-15-23  
 Total No. of visits 24 Is the approved plan of main boiler forwarded herewith No

Dates of Examination of principal parts—Cylinders 22-8-18 Slides 13-8-18 Covers 13-8-18 Pistons 9-9-18 Rods 9-9-18  
 Connecting rods 22-8-18 Crank shaft 16-9-18 Thrust shaft 9-12-18 Tunnel shafts 9-12-18 Screw shaft 3-12-18 Propeller 3-12-18  
 Stern tube 18-11-18 Steam pipes tested 10-11-19 Engine and boiler seatings 20-2-19 Engines holding down bolts 3-4-19  
 Completion of pumping arrangements 14-5-19 Boilers fixed 23-4-19 Engines tried under steam 15-5-19  
 Completion of fitting sea connections 6-12-18 Stern tube 18-11-18 Screw shaft and propeller 6-12-18  
 Main boiler safety valves adjusted 14-5-18 Thickness of adjusting washers Locknuts

Material of Crank shaft Steel Identification Mark on Do. 2450 ON 509-468-508 Material of Thrust shaft Steel Identification Mark on Do. 507 FA  
 Material of Tunnel shafts Steel Identification Marks on Do. 912-463 FA Material of Screw shafts Steel Identification Marks on Do. 115 FA  
 Material of Steam Pipes Lap welded steel Test pressure 600 lbs. ✓  
 Is an installation fitted for burning oil fuel. No Is the flash point of the oil to be used over 150°F.

Have the requirements of Section 49 of the Rules been complied with   
 Is this machinery duplicate of a previous case No If so, state name of vessel

General Remarks (State quality of workmanship, opinions as to class, &c.)  
 The machinery of this vessel has been constructed under Special Survey, in accordance with the rules. It has been securely fitted on board the vessel and tried under steam with satisfactory results.  
 It is submitted that the vessel be eligible for record of + LMC 5-19 in the Register Book.

It is submitted that this vessel is eligible for THE RECORD + LMC 5-19 FII.

JWD. Bell. 30.6.19. JPR

Certificates (if required) to be sent to

The amount of Entry Fee	£ \$	:15.00:	When applied for, 19
Special	£ \$	:183.00:	
Donkey Boiler Fee	£	:	When received, 19/11/19
Travelling Expenses (if any)	£ \$	:24.75:	

Wm. Rumbam  
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute New York JUN - 3 1919  
 Assigned + LMC 5-19



MACHINERY CERTIFICATE WRITTEN 27/19