

REPORT ON MACHINERY.

No. 3425

Received at London Office

Date of writing Report 8th Sept 1919 When handed in at Local Office 8th Sept 1919 Port of Philadelphia Pa.
 No. in Survey held at Gloucester N.Y. Date, First Survey 25th May 1918 Last Survey 3rd Sept 1919
 Reg. Book. S.S. "Pharon" (Number of Visits 33)

Master Built at Gloucester N.Y. By whom built Pusey & Jones Cold (C6) When built 1919
 Engines made at Peleneckady N.Y. By whom made General Electric Company when made 1918
 Boilers made at Chester Pa By whom made Sun Shipbuilding Co when made 1919
 Registered Horse Power _____ Owners Emergency Fleet Corporation Port belonging to Gloucester City N.Y.
 Shaft Horse Power at Full Power 2400 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted yes

TURBINE ENGINES, &c.—Description of Engines Seared Turbine Turbine 13420 No. of Turbines one
 Diameter of Rotor Shaft Journals, H.P. ✓ L.P. ✓ Diameter of Pinion Shaft ✓
 Diameter of Journals ✓ Distance between Centres of Bearings ✓ Diameter of Pitch Circle ✓
 Diameter of Wheel Shaft ✓ Distance between Centres of Bearings ✓ Diameter of Pitch Circle of Wheel ✓
 Width of Face ✓ Diameter of Thrust Shaft under Collars 13 1/4" Diameter of Tunnel Shaft as per rule ✓
 No. of Screw Shafts one Diameter of same as per rule 13.5 continuation line Diameter of Propeller 16.0" Pitch of Propeller 13.10"
 No. of Blades 4 State whether Moveable yes Total Surface 73 1/2 sq ft projected 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

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									
2ND									
3RD									
4TH									
5TH									
6TH									
7TH									
8TH									

No. and size of Feed pumps 2 @ 12" x 8 1/2" x 18" ✓
 No. and size of Bilge pumps 2 @ 10" x 8 1/2" x 12" ✓
 No. and size of Bilge suction in Engine Room & Blt Room: 4 - 3 1/2" & 1 special 3 1/2" : 2 - 3 1/2" in bunker when used for coal
 In Holds, &c. 1 - 3" in 3rd hold : 2 - 4" in main pump room
 No. of Bilge Injections 1 sizes 12" Connected to condenser, or to circulating pump pump 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 coffee can & tank suction How are they protected heavy steel pipes
 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 none Is it fitted with a watertight door worked from

OILERS, &c.—(Letter for record (+)) Manufacturers of Steel Lubers Steel Co
 Total Heating Surface of Boilers 6203 sq ft Is Forced Draft fitted yes No. and Description of Boilers 2 Single Ended
 Working Pressure 210 lbs Tested by hydraulic pressure to 315 lbs Date of test 19.4.19 No. of Certificate 319
 Can each boiler be worked separately yes Area of fire grate in each boiler 59.125 sq ft No. and Description of Safety Valves to each boiler double spring loaded Area of each valve 9.6" 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 abt 8" Mean dia. of boilers 146 1/2" Length 7146" Material of shell plates 1 1/2"
 Range of tensile strength varies Are the shell plates welded or flanged no Descrip. of riveting: cir. seams
 Working pressure of shell by rules _____ Size of manhole in shell _____
 No. and Description of Furnaces in each Boiler _____ Material _____ Outside diameter _____
 Working pressure of furnace by the rules _____ Combustion chamber plates: Material _____ Thickness: Sides _____ Back _____ Top _____ Bottom _____
 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 _____
 Thickness 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 _____
 Thickness 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 Foster Date of Approval of Plan Plan in New York Tested by Hydraulic Pressure to 645 lb
 Date of Test 17.5.18 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? Yes If so, is a report now forwarded? Yes

SPARE GEAR. State the articles supplied:—2 studs & nuts for each side of rotor bearing: 2 studs & nut main gear bearing: 2 studs & nuts pinion bearing: 1 set of coupling bolts: 1/20 of total number of bolts & nuts for each gear case joint & turbine casing joint: 2 ketometers for oil cooling system: 1 set of bearing bushes for gear wheel, rotor & pinion shafts: 1/2 set packing rings for each gland of rotor shaft complete: 1 set of turbine thrust collars: 1 set of feed & bilge pump valves: 1 set of valves for lubricating oil pump: a quantity of anchor bolts & nuts: bars & plates of mild steel: 1 propeller shaft: 2 propeller blades: 2 ordinary thrustershoes.

The foregoing is a correct description,
A. B. Hoff - Pursey & Jones Co. Manufacturer.
Chief Engineer

Dates of Survey while building { During progress of work in shops -- 1918 1919
 During erection on board vessel --- May 25 Dec 5 Jan 22, 24, 26 Mar 28, 31 Apr 8, 11, 14, 16, 25 May 14, 16, 19, 20, 21, 29 Jun 3, 11, 20, 27 Aug 11, 15.
 Total No. of visits 33 Is the approved plan of main boiler forwarded herewith Yes
 " " " donkey " " " No

Dates of Examination of principal parts—Casings ✓ Rotors ✓ Blading ✓ Gearing ✓
 Rotor shaft ✓ Thrust shaft 24.2.18 Tunnel shafts ✓ Screw shaft 25.4.19 Propeller 16.5.19
 Stern tube 26.3.19 Steam pipes tested 25.7.19 Engine and boiler seatings 26.3.18 Engines holding down bolts 8.8.19
 Completion of pumping arrangements 3.9.19 Boilers fixed 8.8.19 Engines tried under steam 29.8.19
 Main boiler safety valves adjusted 26.9.19 Thickness of adjusting washers lock nuts fitted
 Material and tensile strength of Rotor shaft ✓ Identification Mark on Do. ✓
 Material and tensile strength of Pinion shaft ✓ Identification Mark on Do. ✓
 Material of Wheel shaft ✓ Identification Mark on Do. ✓ Material of Thrust shaft Steel Identification Mark on Do. 2408
 Material of Tunnel shafts None Identification Marks on Do. ✓ Material of Screw shafts Steel Identification Marks on Do. 350
 Material of Steam Pipes Steel Test pressure 630 lbs per sq. in.
 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 S.S. "Bessemer"

General Remarks (State quality of workmanship, opinions as to class, &c.)
The machinery of this vessel has been built under special survey: the material and workmanship being good: securely fitted aboard, & proved satisfactory on steam trial
It is submitted that this vessel be eligible for a record of + L. M. C. 9.19 in the Register Book, also a notation of "Fitted for Oil Fuel 9.19. Flash Point above 150° F."

Certificate (if required) to be sent to... (The Surveyors are requested not to write on or below the space for Committee's Minute.)

The amount of Entry Fee ... \$ 15.00 :
 Due Philadelphia ... \$ 140.66 :
 Special ... \$:
 Due New York ... \$ 70.33 :
 Donkey Boiler Fee ... \$:
 Travelling Expenses (if any) \$ 7.00 :

A. T. Thomas
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute New York SEP 23 1919

Assigned + L.M.C. 9.19

