

REPORT ON MACHINERY.

No. 3425

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. J. 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. J. By whom built Pusey & Jones Co. Ltd (C6) When built 1919
Engines made at Schenectady 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 Steam Corporation Port belonging to Gloucester City N. J.
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 & Blk 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 effluent & 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 Lakers 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 sq in 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 71 1/2" Material of shell plates ✓
Thickness 1 1/2" Range of tensile strength ✓ Are the shell plates welded or flanged ✓ Descrip. of riveting: cir. seams
Long. seams ✓ Diameter of rivet holes in long. seams ✓ Pitch of rivets ✓ Lap of plates or width of butt straps ✓
Percentage of strength of longitudinal joint ✓ Working pressure of shell by rules ✓ Size of manhole in shell ✓
Size of compensating ring ✓ No. and Description of Furnaces in each Boiler ✓ Material ✓ Outside diameter ✓
Length 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 ✓
Pitch of stays to ditto: Sides ✓ Back ✓ Top ✓ Bottom ✓ 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 ✓
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 ✓

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: 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: 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
horseshoes.

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 1, 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. "Benemer"

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.

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 :
When applied for, 1919
When received, Sept 24 1919

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

