

Rpt. 4a.

REPORT ON MACHINERY.

No. 17019

REC'D NEW YORK Sept 15-1919
Date of writing Report 21st Aug 1919 When handed in at Local Office 21st Aug 1919 Port of New York N.Y.
No. in Survey held at Schenectady N.Y. Date, First Survey 21st Aug 1919 Last Survey 21st Aug 1919
Reg. Book. (Number of Visits 38.)
on the STEAMER ...

Master ... Built at ... By whom built ... When built 1919
Engines made at Schenectady N.Y. By whom made General Electric Co. when made 1919
Boilers made at ... By whom made ... when made 1919
Registered Horse Power ... Owners ... Port belonging to ...
Shaft Horse Power at Full Power 2500 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted

TURBINE ENGINES, &c.—Description of Engines Grand turbine 13579. No. of Turbines 1
Diameter of Rotor Shaft Journals, H.P. 8" L.P. 4" Diameter of Pinion Shaft 4"
Diameter of Journals 4.10" Distance between Centres of Bearings 4.38" Diameter of Pitch Circle 4.57.888" L.S.P. 11.442.
Diameter of Wheel Shaft 14" Distance between Centres of Bearings L.S.P. 62 1/4" Diameter of Pitch Circle of Wheel 4.54.055.
Width of Face 20.44" Diameter of Thrust Shaft under Collars 13.35" Diameter of Tunnel Shaft as per rule 12.48" as fitted 12.625"
No. of Screw Shafts 2 lines Diameter of same as per rule 14" as fitted 14.5" Diameter of Propeller 17'0" Pitch of Propeller 13'9"
No. of Blades 4 State whether Moveable no Total Surface 98.8 sq 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 3234 Propeller 90

PARTICULARS OF BLADING.

	H. P.			L. P.			ACTIVE ASTERN.		
	HEIGHT OF BLADES.	PITCH DIAMETER AT TIP.	NO. OF ROWS.	HEIGHT OF BLADES.	PITCH DIAMETER AT TIP.	NO. OF ROWS.	HEIGHT OF BLADES.	PITCH DIAMETER AT TIP.	NO. OF ROWS.
1ST EXPANSION	75-125	2'-11 1/2"	2				8125-1.5	2'-2"	2
2ND	625	3'-9"	1				3.375	2'-3"	1
3RD	1.25	3'-10 1/2"	1						
4TH	2.5	4'-0"	1						
5TH	6.0	4'-2"	1						
6TH									
7TH									
8TH									

No. and size of Feed pumps Two 10" x 6" x 24" ✓
No. and size of Bilge pumps Two 12" x 8 1/2" x 12" and 10" x 12" x 12" ✓
No. and size of Bilge suction in Engine Room Two 3 1/2" dia, thrust pieces 1-2 1/2", fire room 2-3 1/2"
In Holds, &c. No 1 Two 3 1/2", No 2 2 1/2", No 3 Two 3 1/2", No 4 Two 3 1/2", No 5 one 3 1/2", Tunnel well one 3 1/2" ✓
No. of Bilge Injections one sizes 10" 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 bunks none ✓ 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 Upper engine platform ✓
SEE REPORT 5.

BOILERS, &c.—(Letter for record S) Manufacturers of Steel
Total Heating Surface of Boilers 8700 Is Forced Draft fitted yes No. and Description of Boilers 3 Watertube Boilers
Working Pressure 200 Tested by hydraulic pressure to Date of test No. of Certificate
Can each boiler be worked separately Area of fire grate in each boiler No. and Description of Safety Valves to each boiler
Area of each valve Pressure to which they are adjusted Are they fitted with easing gear
Smallest distance between boilers or uptakes and bunks 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
long. seams Diameter of rivet holes in long. seams Pitch of rivets Lap of plates or width of butt straps
Per centages of strength of longitudinal joint rivets Working pressure of shell by rules Size of manhole in shell plates
Size of compensating ring No. and Description of Furnaces in each Boiler Material Outside diameter
Length of plain part top crown Thickness of plates bottom 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 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 Yoster Date of Approval of Plan In New York office Tested by Hydraulic Pressure to 400 lbs
Date of Test 2/5/19 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" Pressure to which each is adjusted 300 lbs Is Easing Gear fitted yes

IS A DONKEY BOILER FITTED? no If so, is a report now forwarded? ✓

SPARE GEAR. State the articles supplied:— Two bolts and nuts or studs for each rotor bearing, gear and pinion bearings; one set of coupling bolts for each size used; 20 of total number of bolts and nuts for each gear joint and turbine casing joint; two chronometers for oil circulating system; one complete set of bearing bushes for rotor, pinion and gear shafts; complete set of packing sleeves for turbine head and diaphragm; two main thrust shoes; one set of thrust rings for turbine; one set of feed pump valves; one set of bilge pump valves; one set of lubricating oil pump valves; one bucket and rod for lubricating oil pump; one emergency governor complete, quantity of assorted bolts, studs and nuts, bars and plates of mild steel; one high speed pinion shaft; one propeller; 14 boiler tubes, 15 hipplers, 15 hand hole doors; 38 condenser tubes; one set of boiler feed check valves and two safety valve springs.

The foregoing is a correct description,

General Electric Co.
per S. A. Berg

Manufacturer.

Dates of Survey while building
During progress of work in shops -- 5.4.19: 11.4.19: 1.5.19: 21.4.19: 23.4.19: 12.5.19.
During erection on board vessel --- 14, 17, 24. April 1, 4, 7, 14, 15, 23, 29. May 2, 5, 12, 19, 27. June 2, 9, 17, 23, 25, 29.
Total No. of visits 38. Is the approved plan of main boiler forwarded herewith no

Dates of Examination of principal parts—Casings 5.4.19 Rotors 21.4.19 Blading 1.5.19 Gearing 23.4.19

Rotor shaft 1.5.19 Thrust shaft 2/5/19 Tunnel shafts 2/5/19 Screw shaft 4/4/19 Propeller 4/4/19

Stern tube 17/6/19 Steam pipes tested 21/7/19 Engine and boiler seatings 7/4/19 Engines holding down bolts 15/7/19

Completion of pumping arrangements 13/8/19 Boilers fixed 2/5/19 Engines tried under steam 13/8/19

Main boiler safety valves adjusted 7/8/19 Thickness of adjusting washers lock nuts

Material and tensile strength of Rotor shaft Steel 80,000 lbs. 27" diameter Identification Mark on Do. 25

Material and tensile strength of Pinion shaft " 85,000 " Identification Mark on Do. 25

Material of Wheel shaft Steel Identification Mark on Do. 25 Material of Thrust shaft steel Identification Mark on Do. T. H.

Material of Tunnel shafts steel Identification Marks on Do. T. H. Material of Screw shafts steel Identification Marks on Do. T. H.

Material of Steam Pipes steel Test pressure 600 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 S. Casper & previous vessels.

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 Hog Island to be fitted on board.

The boiler and machinery of the vessel have been examined and found satisfactory. It is submitted that the vessel is fit to receive the engines and to be fitted on board.

The amount of Entry Fee ... £ 1/2 Special 250.00 Donkey Boiler Fee ... £ 1/2 Travelling Expenses (if any) £ 1/2
When applied for, 19.
When received, 23/9/19
Wm. Stewart & T. A. G. Jones
Engineer Surveyors to Lloyd's Register of Shipping.

Committee's Minute New York SEP - 9 1919

Assigned + Lm.C. 8.19 Subject



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