

Engines - Requisition (P. A. N. 117658)

pt. 4a.

REPORT ON MACHINERY.

No. 110.

REC'D NEW YORK SEP 15 1920

Received at London Office

29th OCT 1919

Date of writing Report 10 Sept 1919 When handed in at Local Office 11 Sept 1919 Port of Philadelphia
No. in Survey held at Erie Pa + Hog Island Pa. Date, First Survey 22 Aug Last Survey 10 Sept 1919
Reg. Book. 56 "CANTIGNY" (Number of Visits 47)
on the 56 Tons { Gross 4556 Net 4500

Master Built at Philadelphia By whom built American International Corp. When built 1920
Engines made at Erie Pa By whom made General Electric Co. when made 1919.
Boilers made at Bagone. N.J. By whom made Babcock & Wilcox Co. when made 1920.
Registered Horse Power 1200 Owners Emergency Fleet Corporation Port belonging to Philadelphia
Shaft Horse Power at Full Power 6000 Is Refrigerating Machinery fitted for cargo purposes No. Is Electric Light fitted Yes.

URBINE ENGINES, &c. Description of Engines Seared Turbines (Curtis) No. of Turbines Two.
Diameter of Rotor Shaft Journals, H.P. AFT END 7" L.P. AFT 7" Diameter of Pinion Shafts (3) 7-8-7. 7-9-7 + 8-9-8-8"
Diameter of Journals (3) 7, 7, 8" Distance between Centres of Bearings 3-8, 3-8, 3-8" Diameter of Pitch Circle 8-4" 9-4" 9-7-5"
Diameter of Wheel Shaft 17-19-17" Distance between Centres of Bearings 5-5-5" Diameter of Pitch Circle of Wheel 6-10-12"
Width of Face 3-3-3/8" Diameter of Thrust Shaft under Collars 14-1/4" as per rule 16-1/4.
No. of Screw Shafts 6 Diameter of same as per rule 14-1/8. as fitted 14-1/8. 17-5/8. Diameter of Propeller 18-6" Pitch of Propeller 17-0"
No. of Blades 4 State whether Moveable Yes. Total Surface 106-40 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 H.P. 3836 L.P. 3428 Propeller 100.

ARTICULARS OF BLADING.

STAGE	H.P. PITCH			L.P. PITCH			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	3/4"	2'-11 1/2"	1	2-3/40"	2'-8"	1	3/4"	2'-11 1/2"	1
2ND	1 1/4"	"	1	"	"	1	1 1/4"	"	1 Intermediate
3RD	1-1/40"	3'-0 3/4"	1	4-1/70"	3'-11 1/2"	1	1 1/4"	"	1
4TH	1-6/60"	3'-1 1/2"	1	7-5	4'-2"	1	2-1/8"	2'-11"	1 Intermediate
5TH	"	"	"	"	"	"	3-3"	"	1
6TH	"	"	"	"	"	"	"	"	"
7TH	"	"	"	"	"	"	"	"	"
8TH	"	"	"	"	"	"	"	"	"

No. and size of Feed pumps 2 - 14x9x2 1/2 SIMPLEX.
No. and size of Bilge pumps 1-10x12x12. 1-6x5 1/4x6. 1-8x8x12. 1-12x8 1/2x12. DUPLEX.
No. and size of Bilge suction in Engine Room 4 - 3 1/2".
In Holds, &c. No 1-2-3-4, each 2-3 1/2. No 5-6, each 1-3 1/2.

No. of Bilge Injections 1 sizes 1 1/4" Connected to condenser, or to circulating pump No. 5
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 None. How are they protected Yes.
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 Main deck level.

BOILERS, &c. (Letter for record 17410) Manufacturers of Steel

Total Heating Surface of Boilers 5706 Is Forced Draft fitted yes. No. and Description of Boilers 6 W.T. 13 See letter 31/12/20
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 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
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 Thickness of plates crown Description of longitudinal joint No. of strengthening rings bottom
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 *Forster* Date of Approval of Plan *New York* Tested by Hydraulic Pressure to *400*
Date of Test *18-6-19* 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 *207* Is Easing Gear fitted *No*

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

SPARE GEAR. State the articles supplied:—*One complete set of bearings for Turbines & Reduction Gears. One high speed (High pressure side) Pinion. One high speed (Low pressure side) pinion. One spare set of bolts for Turbines & Gears as required by the Rules. One complete set of packings for High & Low Pressure Turbines. One set of Thrust Bearing rings for each Turbine. 2 Propeller blades. 1 Set of valves for Feed, Bilge and Lubricating oil pumps. 1 Bucket and rod for Lubricating oil pump. 1 spare spring of each size used. 2 Thrust shoes. 2 Thermometer for Lubricating oil. 1 set of coupling bolts. Assorted bolts and nuts. Iron of various sizes.*

The foregoing is a correct description,

For Second Turbine only.

*General Electric Co.
per Ed. Williams*

Manufacturer.

10/9/19

*C. B. Bookwalter
American International S. B. Co.
Hog Island*

Dates of Survey while building
During progress of work in shops --- *Aug 22nd to Sept 2nd 1919*
During erection on board vessel --- *Aug 22nd to Sept 2nd 1919*
Total No. of visits *44*

Is the approved plan of main boiler forwarded herewith? *✓*

Dates of Examination of principal parts—Casings *22-8-19* Rotors *22-8-19* Blading *22-8-19* Gearing *22-8-19*

Rotor shaft *22-8-19* Thrust shaft *3-1-20* Tunnel shafts *3-1-20* Screw shaft *26-7-19* Propeller *26-7-19*

Stern tube *24-9-19* Steam pipes tested *26-7-19* Engine and boiler seatings *19-5-19* Engines holding down bolts *21-12-19*

Completion of pumping arrangements *16-5-20* Boilers fixed *31-5-20* Engines tried under steam *16-8-20*

Main boiler safety valves adjusted *19-5-20* Thickness of adjusting washers *check nuts*

Material and tensile strength of Rotor shaft *Nickel steel 80000# G. S. Specification M-504* Identification Mark on Do. *G.D.*

Material and tensile strength of Pinion shaft *quenched & tempered carbon steel 80000# Gen Electric Spec N-731* Identification Mark on Do. *G.D.*

Material of Wheel shaft *Steel* Identification Mark on Do. *G.D.* Material of Thrust shaft *Steel* Identification Mark on Do. *640 J.S.*

Material of Tunnel shafts *Steel* Identification Marks on Do. *641.645 J.S.* Material of Screw shafts *Steel* Identification Marks on Do. *561 J.S.*

Material of Steam Pipes *Solid drawn Steel* Test pressure *400 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? *✓* If so, state name of vessel

General Remarks (State quality of workmanship, opinions as to class, &c.)

These Engines have been built under Special Survey. The materials and Workmanship employed in their manufacture so far as could be seen are sound and good. They have been tested in the shop under steam. The Engines will be eligible in my opinion to have the record of I.L.M.C. (with date) when satisfactorily installed in vessel and examined under working conditions. This machinery has been well fitted on board the vessel and tried under full power with satisfactory results. In my opinion this vessel is eligible for record + I.L.M.C. 8-20. with notation Fitted for oil fuel. Flash point above 150°F.

The amount of Entry Fee ... \$:
Special ... \$ 250.00 :
Donkey Boiler Fee ... £ :
Travelling Expenses (if any) \$ 32.00 :
When applied for, *12 Sept 1919*
When received, *4.10.1920 WPR*

*J. H. Carey
J. Robinson & G. Drummond
Engineer Surveyors to Lloyd's Register of Shipping.*

Committee's Minute New York SEP 21 1920

Assigned to L.M.C. 820
Subject