

REPORT ON MACHINERY.

No. 2566

REC'D NEW YORK

May 22 1917

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of writing Report 14th May 1917. When handed in at Local Office 15th May 1917. Port of **PHILADELPHIA**

in Survey held at **Wilmington Del.** Date, First Survey 25th Oct 1915 Last Survey 12th May 1917

Book. 55 on the **3/5 "BENJAMIN BREWSTER"** (Number of Vents 49) Gross 5600 Tons Net

Master **C. A. Peters** Built at **Wilmington** By whom built **Harlan & Hollingsworth** When built **1914**

Engines made at **Wilmington** By whom made **Harlan & Hollingsworth** when made **1914**

Boilers made at **Wilmington** By whom made **Harlan & Hollingsworth** when made **1914**

Registered Horse Power Owners **Standard Oil Co of New York**. Port belonging to **Bayonne N.J.**

nom. Horse Power as per Section 28 **528**. 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 **27"-45"-74"** Length of Stroke **48"** Revs. per minute **as per rule 14.8** Material of screw shaft **Steel**

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 **tylo fit** If two

boilers are fitted, is the shaft lapped or protected between the liners **yes** Length of stern bush **5'-6"**

dia. of Tunnel shaft **as per rule 13.38** Dia. of Crank shaft journals **as per rule 14.05** Dia. of Crank pin **14.5"** Size of Crank webs **28x9 1/2** Dia. of thrust shaft under

boilers **14.5"** Dia. of screw **17'-9"** Pitch of Screw **17'-0"** No. of Blades **4** State whether moveable **yes** Total surface **100 sq**

No. of Feed pumps **2** Diameter of ditto **10x8"** Stroke **21"** Can one be overhauled while the other is at work **yes**

No. of Bilge pumps **2** Diameter of ditto **4"** Stroke **26"** Can one be overhauled while the other is at work **yes**

No. of Donkey Engines **10** Sizes of Pumps **see over** No. and size of Suctions connected to both Bilge and Donkey pumps

Engine Room **1-6", 1-3 1/2", 3-3"** In Holds, &c. **No. 1 Cofferdam 1-5", Bunker double bottom**

Bilges **2-3 1/2", 2-2 1/2", No. 3 Cofferdam 2-3 1/2", Forward Cofferdam 1-3 1/2", Dec tank 2-5", Dec tank flat 2-2"** **after Peak 1-3 1/2"**

No. of Bilge Injections **1** sizes **9"** Connected to condenser, or to circulating pump **Is a separate Donkey Suction fitted in Engine room & size 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

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**

What pipes are carried through the bunkers **Suction to No. 3 Cofferdam** How are they protected **Heavy wooden casing**

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 **yes**

BOILERS, &c.—(Letter for record **S.**) Manufacturers of Steel **Lukens I & S Co. Coatesville**

Total Heating Surface of Boilers **7788 sq** Is Forced Draft fitted **yes** No. and Description of Boilers **Two Single ended**

Working Pressure **180 lbs** Tested by hydraulic pressure to **240 lbs** Date of test **16-2-17** No. of Certificate **116**

Can each boiler be worked separately **yes** Area of fire grate in each boiler **70 sq** No. and Description of Safety Valves to

each boiler **2 direct spring** Area of each valve **15.9 sq** Pressure to which they are adjusted **180 lbs** Are they fitted with easing gear **yes**

Smallest distance between boilers or uptakes and bunkers or woodwork **3'-0"** Mean dia. of boilers **18'-1 1/2"** Length **11'-8 1/2"** Material of shell plates **Steel**

Thickness **1 1/8"** Range of tensile strength **28/32** Are the shell plates welded or flanged **no** Descrip. of riveting: cir. seams **DR. Lap**

g. seams **TR. DBS** Diameter of rivet holes in long. seams **1 1/16"** Pitch of rivets **9 3/4"** Lap of plates or width of butt straps **22 1/2"**

Percentage of strength of longitudinal joint **93.6** Working pressure of shell by rules **195 lbs** Size of manhole in shell **16" x 12"**

Size of compensating ring **43" x 39" x 1 1/2"** No. and Description of Furnaces in each boiler **4 horizontal** Material **Steel** Outside diameter **51 1/2"**

Length of plain part **top 19"** Thickness of plates **bottom 32"** Description of longitudinal joint **weld** No. of strengthening rings **yes**

Working pressure of furnace by the rules **184.4** Combustion chamber plates: Material **Steel** Thickness: Sides **32** Back **32** Top **32** Bottom **8**

Pitch of stays to ditto: Sides **7 1/2" x 7 1/2"** Back **7 1/2" x 7 1/2"** Top **8 3/4" x 7 1/2"** If stays are fitted with nuts or riveted heads **riveted heads** Working pressure by rules **196 lbs**

Material of stays **Steel** Area at smallest part **1.521 sq** Area supported by each stay **56.25 sq** Working pressure by rules **216** End plates in steam space:

Material **Steel** Thickness **1 1/2"** Pitch of stays **18" x 18"** How are stays secured **DN & W** Working pressure by rules **184.8** Material of stays **Steel**

Area at smallest part **6.72 sq** Area supported by each stay **324 sq** Working pressure by rules **215.7** Material of Front plates at bottom **Steel**

Thickness **1 1/8"** Material of Lower back plate **Steel** Thickness **1"** Greatest pitch of stays **13"** Working pressure of plate by rules **306**

Diameter of tubes **2 1/2"** Pitch of tubes **3 3/4" x 3 1/2"** Material of tube plates **Steel** Thickness: Front **7/8"** Back **3/4"** Mean pitch of stays **9.125"**

Clearance across wide water spaces **13"** Working pressures by rules **284** Girders to Chamber tops: Material **Steel** Depth and

Thickness of girder at centre **9 1/2" x 1 1/8"** Length as per rule **50"** Distance apart **8 3/4"** Number and pitch of stays in each **3-4 1/2"**

Working pressure by rules **228** Steam dome: description of joint to shell **yes** % of strength of joint **yes**

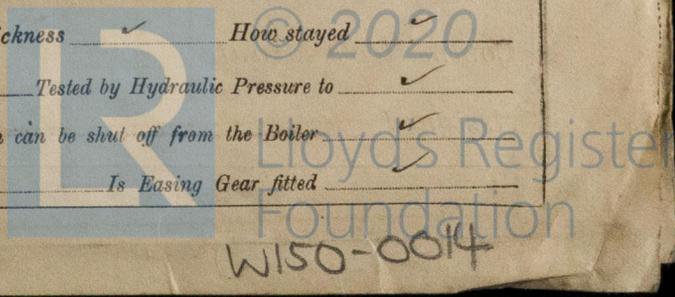
Material **Steel** Thickness of shell plates **yes** Material **yes** Description of longitudinal joint **yes** Diam. of rivet holes **yes**

Pitch of rivets **yes** Working pressure of shell by rules **yes** Crown plates **yes** Thickness **yes** How stayed **yes**

SUPERHEATER. Type **yes** Date of Approval of Plan **yes** Tested by Hydraulic Pressure to **yes**

Date of Test **yes** Is a Safety Valve fitted to each Section of the Superheater which can be shut off from the Boiler **yes**

Material of Safety Valve **yes** Pressure to which each is adjusted **yes** 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:— *1 Tail shaft, 2 propeller blades, 1 section Crank shaft, 1 piston rod, 1 set of piston rings for HP, IP & LP, 1 valve spindle, 1 air pump, 1 bilge pump ram, 1 crank pin box, 2 crosshead pin boxes, 2 crank pins and 2 main bearing bolts, 1 set of coupling bolts & nuts, 1 set of feed, bilge, and air pump valves, 1 set of valves for all auxiliaries, 20 boiler tubes, 20 condenser tubes, a quantity of assorted bolts & iron, and 2 crosshead bolts.*

The foregoing is a correct description,

W. J. Carnes
Chief Engineer N.H. Cople Manufacturer.

Dates of Survey while building: During progress of work in shops -- *1915 Oct 25, Dec 24, 1916 Jan 5, 18, 24, Feb 2, 7, 10, 16, 21, 25, Mar 1, 4, 9, 13, 23, 29, April 4, 10, 18, 28, May 3, 9, 15, 18, 23, 31, June 6, 14, July 6, 12, 19, 24, Aug 19, 21, 31, Sept 5, 15, 20, Oct 5, 11, 17, 20, 24, Nov 1, 8, 15, 23, 28, Dec 6, 13, 22, 29, 1917 Jan 4, 15, 19, 24, 31, Feb 6, 9, 10, 14.*
During erection on board vessel --- *1917 Feb 21, 28, Mar 1, 4, 14, 19, 23, 24, 30, April 4, 11, 17, 30, May 3, 7, 10, 12.*
Total No. of visits *79.* Is the approved plan of main boiler forwarded herewith *copy*
" " " donkey " " " *copy*

Dates of Examination of principal parts—Cylinders *6-7-16* Slides *6-7-16* Covers *6-7-16* Pistons *6-7-16* Rods *12-7-16*
Connecting rods *6-7-16* Crank shaft *6-7-16* Thrust shaft *20-9-16* Tunnel shafts *✓* Screw shaft *31-8-16* Propeller *6-12-16*
Stern tube *25-11-16* Steam pipes tested *23-3-17* Engine and boiler seatings *15-1-17* Engines holding down bolts *7-3-17*
Completion of pumping arrangements *7-5-17* Boilers fixed *28-2-17* Engines tried under steam *10-5-17*
Completion of fitting sea connections *9-2-17* Stern tube *31-1-17* Screw shaft and propeller *31-1-17*
Main boiler safety valves adjusted *3-5-17* Thickness of adjusting washers *A 7/8" F 3/4" A 3/4" F 1/2" P 3/16" S 5/16"*
Material of Crank shaft *Steel* Identification Mark on Do. *1459* Material of Thrust shaft *Steel* Identification Mark on Do. *1441*
Material of Tunnel shafts *✓* Identification Marks on Do. *✓* Material of Screw shafts *Steel* Identification Marks on Do. *1441*
Material of Steam Pipes *Copper* Test pressure *360 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 duplicate of a previous case *✓* If so, state name of vessel *✓*

General Remarks (State quality of workmanship, opinions as to class, &c.)
Pumps 1-8"x8", 1-12"x10"x12", 1-7 1/2"x4 1/2"x10", 2-5 1/4"x3 1/2"x5", 2-10"x6"x10", 1-8"x8 1/2"x12"
1-8"x6"x12", 1-4 1/2"x2 3/4"x4"
The machinery of this vessel has been constructed & fitted on board under Special Survey, the workmanship is sound & good. The Dahl oil fuel system has been fitted. The machinery has all been tried under steam and safety valves adjusted, oil system tried & found to work well and in my opinion eligible for the record of LMC 5-17 fitted for oil fuel 5-17 flash point over 150°F in the Register's Book.

It is submitted that this vessel is eligible for THE RECORD. + LMC 5-17. F.D. Fitted for oil fuel 5-17. FP 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 ...	<i>25</i> 15:00	When applied for,
Special ...	<i>20</i> 232:00	<i>15-5-1917</i>
Donkey Boiler Fee ...	<i>25</i> 25:00	When received,
Travelling Expenses (if any) ...	<i>25</i> 45:00	<i>Wm. R. ...</i>

J.W.D.
31/6/17
Blelock
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute
Assigned + LMC 5-17 Fitted for oil fuel 5-17 F.P. above 150°F. Elec. Light

