

REPORT ON MACHINERY

No. 2389

TUE. 30 MAY. 1916

Received at London Office

PHILADELPHIA

Date of writing Report 12.5.16 When handed in at Local Office 12.5.16 Port of **PHILADELPHIA**

Date, First Survey **Camden N-J.** Last Survey **July 3rd 1916**

Name of vessel **S.S. BRISTOL** (Number of Visits **2971**)

Builder **Camden** By whom built **New York S B Co** Tons **241**

Engines made at **Camden N-J.** By whom made **do** when made **1916-2**

Boilers made at **-do-** By whom made **do** when made **1916-2**

Registered Horse Power **390** Owners **Coastwise Transportation Co** Port belonging to **Roseton**

Is Refrigerating Machinery fitted for cargo purposes **no** Is Electric Light fitted **yes**

GINES, &c.—Description of Engines **Triple** No. of Cylinders **3** No. of Cranks **3**

Dia. of Cylinders **23 3/4, 38 3/2, 6 7/8** Length of Stroke **45** Revs. per minute **76** Dia. of Screw shaft **3 5/8** Material of screw shaft **W.H. Steel**

Is 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 **yes**

Is the propeller boss **yes** If the liner is in more than one length are the joints burned **no** 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 **fitted close** If two liners are fitted, is the shaft lapped or protected between the liners **yes** Length of stern bush **5' 0 3/8"**

Dia. of Tunnel shaft **12.07** Dia. of Crank shaft journals **12.7** Dia. of Crank pin **13 1/2** Size of Crank webs **25 1/2, 8 3/2** Dia. of thrust shaft under bars **13 1/2** Dia. of screw **16.0** Pitch of Screw **16.6** No. of Blades **4** State whether moceable **yes** Total surface **74 sq ft**

No. of Feed pumps **2** Diameter of ditto **4** Stroke **18** Can one be overhauled while the other is at work **yes**

No. of Bilge pumps **2** Diameter of ditto **4 1/2** Stroke **18** Can one be overhauled while the other is at work **yes**

No. of Donkey Engines **4** Sizes of Pumps **2, 8 1/2, 18, 10, 7 1/2, 2, 1 1/2, 1 1/2, 1 1/2** No. and size of Suctions connected to both Bilge and Donkey pumps **6, 7, 8**

Engine Room **4 - 3 1/2** In Holds, &c. **two 3 1/2" each. F Peak 1-5" G Peak 1-3"**

No. of Bilge Injections **1** sizes **4"** Connected to condenser, or to circulating pump **no** 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 the sluices on Engine room bulkheads always accessible **none**

Are all connections with the sea direct on the skin of the ship **yes** Are they Valves or Cocks **valves**

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**

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**

Dates of examination of completion of fitting of Sea Connections **yes** of Stern Tube **yes** Screw shaft and Propeller **yes**

Is the Screw Shaft Tunnel watertight **no tunnel** Is it fitted with a watertight door **yes** worked from **no**

BOILERS, &c.—(Letter for record **T**) Manufacturers of Steel **North Bros. Louisville**

Total Heating Surface of Boilers **5406 sq ft** Is Forced Draft fitted **yes** No. and Description of Boilers **2 Single ended, multi-tubular**

Working Pressure **190 lb** Tested by hydraulic pressure to **275 lb** Date of test **11.11.15** No. of Certificate **111**

Can each boiler be worked separately **yes** Area of fire grate in each boiler **64 sq ft** No. and Description of Safety Valves to each boiler **2 Dried Spring** Area of each valve **9.6** Pressure to which they are adjusted **190 lb by U.S.** Are they fitted with easing gear **yes**

Smallest distance between boilers or uptakes and bunkers **2.10** Mean dia. of boilers **15.7** Length **11-5 9/16** Material of shell plates **Steel**

Thickness **7/16** Range of tensile strength **28, 32, 40, 45** Are the shell plates welded or flanged **no** Descrip. of riveting: cir. seams **lap d.T.**

Seams **DRS T.R.** Diameter of rivet holes in long. seams **1 7/16** Pitch of rivets **9 5/16** Lap of plates or width of butt straps **20 1/4**

Percentages of strength of longitudinal joint **90.1** Working pressure of shell by rules **189 lb** Size of manhole in shell **16 x 12**

Length of compensating ring **37.32** No. and Description of Furnaces in each boiler **3 Morrison** Material **S** Outside diameter **4.4 3/8**

Length of plain part **top 1 1/2, bottom 1 1/2** Thickness of plates **crown 7/16, bottom 5/16** Description of longitudinal joint **welded** No. of strengthening rings **none**

Working pressure of furnace by the rules **216 lb** Combustion chamber plates: Material **S** Thickness: Sides **5/8** Back **3/4** Top **5/8** Bottom **5/16**

Pitch of stays to ditto: Sides **6 3/8 x 6 7/8** Back **6 3/4 x 7** Top **6 3/8 x 7 3/4** If stays are fitted with nuts or riveted heads **nut** Working pressure by rules **258 lb**

Material of stays **iron** Diameter at smallest part **1.81** Area supported by each stay **47.25** Working pressure by rules **258 lb** End plates in steam space: **3**

Material **Steel** Thickness **1 9/32** Pitch of stays **7 1/2 x 16** How are stays secured **D. N.** Working pressure by rules **261 lb** Material of stays **Steel**

Diameter at smallest part **2 3/8** Area supported by each stay **281** Working pressure by rules **240 lb** Material of Front plates at bottom **Steel**

Thickness **3/4** Material of Lower back plate **Steel** Thickness **7/16** Greatest pitch of stays **14 1/4** Working pressure of plate by rules **303 lb**

Diameter of tubes **2 3/4** Pitch of tubes **3 3/4 x 4** Material of tube plates **Steel** Thickness: Front **3/4** Back **2 5/16** Mean pitch of stays **all tubes leaded**

Pitch across wide water spaces **13 1/4** Working pressures by rules **243 lb** Girders to Chamber tops: Material **Steel** Depth and thickness of girder at centre **9 1/2 x 2** Length as per rule **38** Distance apart **7 3/4** Number and pitch of stays in each **5-6 3/8**

Working pressure by rules **229 lb** Superheater or Steam chest; how connected to boiler **none** Can the superheater be shut off and the boiler worked **yes**

Material of shell plates **Steel** Description of longitudinal joint **lap d.T.** Diam. of rivet **1 7/16**

Pitch of rivets **9 5/16** Working pressure of shell by rules **189 lb** Diameter of flue **16** Material of flue plates **Steel** Thickness **5/16**

Stiffened with rings **yes** Distance between rings **12** Working pressure by rules **216 lb** End plates: Thickness **5/16** How stayed **yes**

Working pressure of end plates **216 lb** Area of safety valves to superheater **9.6** Are they fitted with easing gear **yes**

IS A DONKEY BOILER FITTED? *no*

If so, is a report now forwarded?

SPARE GEAR. State the articles supplied:— *stated to have been supplied.*

*One 1/2 set piston springs & bolts for each piston.
Two crankhead crank pin & main bearing bolts nuts
One set coupling bolts nuts. One set valves for all pumps
One set of link hoses for valve gear. One cyl relief valve
complete. one propeller blade.*

The foregoing is a correct description,

New York Shipbuilding Company

Hallagour

Manufacturer.

Dates of Survey while building
{ During progress of work in shops - -
{ During erection on board vessel - - -
Total No. of visits

during construction

Is the approved plan of main boiler forwarded herewith *yes*

Is the approved plan of donkey boiler forwarded herewith *yes*

Dates of Examination of principal parts—	Cylinders	Slides	Covers	Pistons	Rods
Connecting rods	Crank shaft	Thrust shaft	Tunnel shafts	Screw shaft	Propeller
Stern tube	Steam pipes tested	Engine and boiler seatings	Engines holding down bolts		
Completion of pumping arrangements	<i>during construction</i>		Boilers fixed	Engines tried under steam	
Main boiler safety valves adjusted	Thickness of adjusting washers				
Material of Crank shaft	<i>Steel</i>	Identification Mark on Do.	Material of Thrust shaft	<i>Steel</i>	Identification Mark on Do.
Material of Tunnel shafts	Identification Marks on Do.		Material of Screw shafts	<i>Steel</i>	Identification Marks on Do.
Material of Steam Pipes	<i>Copper. Solid drawn</i>		Test pressure	<i>380#</i>	

Is an installation fitted for burning oil fuel *no* Is the flash point of the oil to be used over 150°F.

Have the requirements of Section 49 of the Rules been complied with

Is this machinery duplicate of a previous case *no* If so, state name of vessel

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

The foregoing particulars are stated by the builder as being a correct record of the material & dimensions as fitted on this vessel. Attached are copies of the U.S. Govt. Surveyor's results of testing boiler shell plates & butt straps.

The main boiler steam pipes were tested by the U.S. Govt. Surveyor by hyd test as required by U.S. Govt. & found satisfactory at 275#

The materials and workmanship are of good quality and the machinery is in my opinion eligible for the work of L.M.C 2.16 when the safety valves are adjusted under steam to the working pressure.

Fee arranged.

The amount of Entry Fee ...	£ 15: 00	When applied for.	19
Special ...	£ 135: 00	When received.	<i>2/19/18</i>
Donkey Boiler Fee ...	£ :		
Travelling Expenses (if any) £	:		

Robert Haig
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping

Committee's Minute *TUE JUN. 18. 1918*
Assigned *See NYK rph No. 13969 + 15020*

