

Rpt. 4.

REPORT ON MACHINERY

No. 2356

MAR 1916

Date of writing Report 24. 2. 1916 When handed in at Local Office 29. 2. 1916 Port of **PHILADELPHIA.**No. in Survey held at **Wilmington Del** Date, First Survey **April 7. 15** Last Survey **July 10. 1916**Reg. Book. **41** on the **S.S. GOLD SHELL** (Number of Visits **41**)Master **Frederick Bone** Built at **Wilmington** By whom built **Harlan & Hollingsworth Corp** When built **1916. 2**Engines made at **Wilmington** By whom made **Harlan & Hollingsworth Corp** when made **1916. 2**Boilers made at **Wilmington** By whom made **do** when made **1916-2**Registered Horse Power **-** Owners **Shell Company of California** Port belonging to **Wilmington Del**Nom. Horse Power as per Section 28 **550** Is Refrigerating Machinery fitted for cargo purposes **no** Is Electric Light fitted **yes**ENGINES, &c.—Description of Engines **Triple** No. of Cylinders **3** No. of Cranks **3**Dia. of Cylinders **27. 45. 74** Length of Stroke **48** Revs. per minute **70** Dia. of Screw shaft **5 1/2** as per rule **5 1/2** as fitted **5 1/2** Material of screw shaft **as per rule**Is the screw shaft fitted with a continuous liner the whole length of the stern tube **no** 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 **protected by brass casing** Length of stern bush **5. 6**Dia. of Tunnel shaft **13 1/2** as per rule **13 1/2** as fitted **13 1/2** Dia. of Crank shaft journals **14 1/2** as per rule **14 1/2** as fitted **14 1/2** Dia. of Crank pin **14 1/2** Size of Crank webs **28 1/2 x 9** Dia. of thrust shaft under collars **14 1/2** Dia. of screw **17. 9** Pitch of Screw **17. 0** No. of Blades **4** State whether moveable **yes** Total surface **100 sq ft**No. of Feed pumps **2** Diameter of ditto **8 x 10 1/2** 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 **3** Sizes of Pumps **8 x 6 x 12, 8 x 8 1/2 x 12, 10 x 12 x 12** No. and size of Suctions connected to both Bilge and Donkey pumpsEngine Room **3- 3 1/2, 1- 3, 1- 4 1/2** In Holds, &c. **Forepeak 1- 3 1/2, Afterpeak 1- 3 1/2**W.T. flat in No 1 hold **two 2**No. of Bilge Injections **1** sizes **9** Connected to condenser, or to circulating pump **yes** Is a separate Donkey Suction fitted in Engine room & size **yes - 4 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 **yes**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 **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**How are they protected **none**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 **20. 11. 15** of Stern Tube **20. 11. 15** Screw shaft and Propeller **20. 11. 15**Is the Screw Shaft Tunnel watertight **no tunnel** Is it fitted with a watertight door **worked from**MATERIALS, &c.—(Letter for record **S**) Manufacturers of Steel **Luke's Iron & Steel Co. Conventville**Total Heating Surface of Boilers **8332** Is Forced Draft fitted **yes** No. and Description of Boilers **3 Single ended**Working Pressure **180 lbs** Tested by hydraulic pressure to **270 lbs** Date of test **Dec 20. 15** No. of Certificate **80**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 Wick Spring** Area of each valve **9. 6** Pressure to which they are adjusted **180 lbs** Are they fitted with easing gear **yes**Smallest distance between boilers or uptakes and bunkers **3. 0** Mean dia. of boilers **15. 6** Length **11. 7** Material of shell plates **steel**Thickness **1/32** Range of tensile strength **28. 32 lbs** Are the shell plates welded or flanged **no** Descrip. of riveting: cir. seams **dr lap**g. seams **135. T. R** Diameter of rivet holes in long. seams **1/8** Pitch of rivets **8 1/4** Lap of plates on width of butt straps **19 1/4**Percentages of strength of longitudinal joint **99.** Working pressure of shell by rules **192 lbs** Size of manhole in shell **16 x 2**Size of compensating ring **36 x 31 1/2 x 1/32** No. and Description of Furnaces in each boiler **3. Mannon** Material **steel** Outside diameter **49**Length of plain part **top 19** Thickness of plates **bottom 3/32** Description of longitudinal joint **welded** No. of strengthening rings **none**Working pressure of furnace by the rules **193 lbs** Combustion chamber plates: Material **steel** Thickness: Sides **2 1/2** Back **2 1/2** Top **2 1/2** Bottom **2 1/2**Pitch of stays to ditto: Sides **7 1/2 x 7 1/2** Back **7 1/2 x 7 1/2** Top **9 x 7 1/2** If stays are fitted with nuts or riveted heads **riveted** Working pressure by rules **196 lbs**Material of stays **steel** Diameter at smallest part **1/2** Area supported by each stay **56. 25** Working pressure by rules **216 lbs** End plates in steam space: Material **steel** Thickness **1/8** Pitch of stays **7 1/2 x 1/6 1/2** How are stays secured **N + W** Working pressure by rules **196 lbs** Material of stays **steel**Diameter at smallest part **2 3/4** Area supported by each stay **289** Working pressure by rules **214 lbs** Material of Front plates at bottom **steel**Thickness **8** Material of Lower back plate **steel** Thickness **7/8** Greatest pitch of stays **3 1/2 x 7 1/2** Working pressure of plate by rules **389 lbs**Diameter of tubes **2 1/2** Pitch of tubes **3 1/4 x 3 1/2** Material of tube plates **steel** Thickness: Front **5/8** Back **3/32** Mean pitch of stays **10 3/8**Pitch across wide water spaces **3 1/2 x 9. 4 1/2** Working pressures by rules **251 lbs** Girders to Chamber tops: Material **steel** Depth and thickness of girder at centre **9 1/4 x 1 1/8** Length as per rule **33** Distance apart **9** Number and pitch of stays in each **3- 7 1/2**Working pressure by rules **226 lbs** Superheater or Steam chest; how connected to boiler **none** Can the superheater be shut off and the boiler worked **yes**Material **-** Diameter **-** Length **-** Thickness of shell plates **-** Material **-** Description of longitudinal joint **-** Diam. of rivet **-** Pitch of rivets **-** Working pressure of shell by rules **-** Diameter of flue **-** Material of flue plates **-** Thickness **-** End plates: Thickness **-** How stayed **-** Working pressure of end plates **-** Area of safety valves to superheater **-** Are they fitted with easing gear **-**

IS A DONKEY BOILER FITTED? *no*

If so, is a report now forwarded? *✓*

SPARE GEAR. State the articles supplied:—

*1 Lail shaft, 1 section crank shaft, 1 piston and
1 valve spindle, 1 air pump rod, 1 bilge pump ram, 2 crank pin
brasses, 2 crosshead brasses, 1 eccentric strap, 2 crosshead
crank pin & 2 main bearing bolts. And nuts, 1 set coupling
bolts & nuts, 1 set feed bilge also 1 set valves for all auxiliaries
a quantity of bolts & inserted nuts.*

The foregoing is a correct description,
HARLAN & HOLLINGSWORTH CORPORATION,

By H. C. Smith
Vice President.

Manufacturer.

Dates
of Survey
while
building

During progress of
work in shops --
During erection on
board vessel --
Total No. of visits

April 7. 15. 21. June 2. 7. 24. July 8. 16. 21. 29. Aug 5. 10. Sept. 10. 17. 22. 29. Oct 7. 11. 18. 19. 25. 28
Nov 23. 26. Dec 1. 7. 20. 27. 1915. Jan 5. 14. 18. 27. Feb 2. 7. 10. 1916.

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

Dates of Examination of principal parts—Cylinders *16. 7. 15* Slides *16. 7. 15* Covers *16. 7. 15* Pistons *28. 10. 15* Rods *28. 10. 15*
Connecting rods *28. 10. 15* Crank shaft *16. 7. 15* Thrust shaft *28. 10. 15* Tunnel shafts *✓* Screw shaft *28. 10. 15* Propeller *28. 10. 15*
Stern tube *5. 11. 15* Steam pipes tested *14. 14. 16* Engine and boiler seatings *5. 1. 16* Engines holding down bolts *5. 1. 16*
Completion of pumping arrangements *10. 2. 16* Boilers fixed *5. 1. 16* Engines tried under steam *10. 2. 16*
Main boiler safety valves adjusted *7. 2. 16* Thickness of adjusting washers *F 16. F 3. A 5. P 3. F 2. A 3. S 3. F 3. A 2*
Material of Crank shaft *steel* Identification Mark on Do. *1232* Material of Thrust shaft *steel* Identification Mark on Do. *1232*
Material of Tunnel shafts *none* Identification Marks on Do. *✓* Material of Screw shafts *steel* Identification Marks on Do. *1232*
Material of Steam Pipes *steel* Test pressure *540 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 *yes*

If so, state name of vessel *S. S. Lihue Shell. Philad 2307*

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

*The machinery of this vessel has been constructed
fitted on board under Special Survey the workmanship
is sound & good. The Dull oil fuel system has been fitted.
The machinery has all been tried under steam
found to work well & is in my opinion eligible
for the record + LMC 2.16, fitted for oil fuel 2.16. flash point
over 150°F. in the Register Book.*

It is submitted that
this vessel is eligible for
THE RECORD. + LMC. 2.16. F.D.

Fitted for oil fuel 2.16. F.P. above 150°F.

The amount of Entry Fee ... \$ 15. 00: When applied for, 23. 2. 1916
Special ... \$ 237. 50:
Donkey Boiler Fee ... £ - - - : When received, 1. 3. 1916
Travelling Expenses (if any) \$ 24. 65:

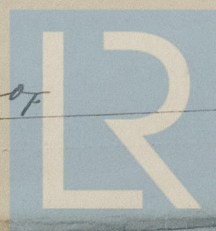
Committee's Minute

Assigned

*1 + LMC 2.16 F.D.
fitted for oil fuel 2.16 F.P. above 150°F*

MACHINERY CERTIFICATE
WRITTEN.

647 14/1/16



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Foundation