

# REPORT ON MACHINERY.

REC'D NEW YORK April 10-1918

Received at London Office

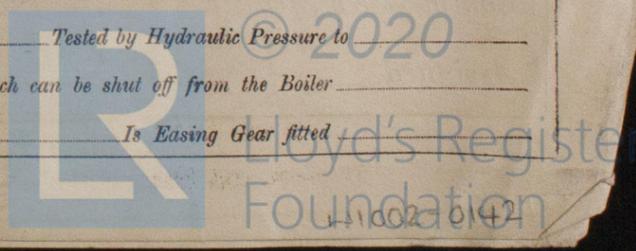
Date of writing Report 19 When handed in at Local Office 19 Port of Philadelphia, Pa.  
 No. in Survey held at Chester, Pa. Date, First Survey Jan 8<sup>th</sup> 1917 Last Survey March 29 1918  
 Reg. Book. on the S.S. "Sabine Sun" (Number of Visits 39)  
 Master J. Olsen Built at Chester By whom built Sun Shipbuilding Co. Tons { Gross / Net }  
 Engines made at Chester By whom made Sun Shipbuilding Co. when made 1918  
 Boilers made at Chester By whom made " when made 1918  
 Registered Horse Power Owners United States Shipping Board Port belonging to Philadelphia  
 Nom. Horse Power as per Section 28 532 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 24 x 45 1/2 x 46 Length of Stroke 51 Revs. per minute 68 Dia. of Screw shaft as per rule 15.35 Material of 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  
 in the propeller boss Yes If the liner is in more than one length are the joints burned ✓ 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 ✓ If two  
 liners are fitted, is the shaft lapped or protected between the liners ✓ Length of stern bush 64  
 Dia. of Tunnel shaft as per rule 13.96 Dia. of Crank shaft journals as per rule 14.66 Dia. of Crank pin 15 1/2 Size of Crank webs 10 3/4 Dia. of thrust shaft under  
 collars 15 Dia. of screw 18-0 Pitch of Screw 14-0 No. of Blades 4 State whether moveable Yes Total surface 98  
 No. of Feed pumps 2 Diameter of ditto 4 1/2 Stroke 22 1/2 Can one be overhauled while the other is at work Yes  
 No. of Bilge pumps 2 Diameter of ditto 4 1/2 Stroke 22 1/2 Can one be overhauled while the other is at work Yes  
 No. of Donkey Engines 4 Sizes of Pumps 1-14 x 10, 1-12 x 8, 1-6 x 5 1/2 x 6 No. and size of Suctions connected to both Bilge and Donkey pumps  
 In Engine Room 5-3 1/2, 1-5 In Holds, &c. 2-4 from Eng room tank  
2-3 from Cofferdams.  
 No. of Bilge Injections 1 sizes 10 Connected to condenser, or to circulating pump Yes Is a separate Donkey Suction fitted in Engine room & size 1-5  
 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 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 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 None Is it fitted with a watertight door ✓ worked from ✓

**BOILERS, &c.**—(Letter for record S) Manufacturers of Steel Lukens Steel Co.  
 Total Heating Surface of Boilers 4331 Is Forced Draft fitted Yes No. and Description of Boilers 3 S.E. Scotch  
 Working Pressure 190 Tested by hydraulic pressure to 285 Date of test 28-11-14 No. of Certificate 156  
 Can each boiler be worked separately Yes Area of fire grate in each boiler Oil burner No. and Description of Safety Valves to  
 each boiler 2 direct spring Area of each valve 9.62 Pressure to which they are adjusted 190 Are they fitted with easing gear Yes  
 Smallest distance between boilers or uptakes and bunkers or woodwork 3-0 Mean dia. of boilers 15-3 Length 11-5 Material of shell plates S  
 Thickness 1 15/32 Range of tensile strength 60000/41680 Are the shell plates welded or flanged No Descrip. of riveting: cir. seams DL  
 long. seams T.R.D.B.S. Diameter of rivet holes in long. seams 1 1/16 Pitch of rivets 8 1/16 End width of butt straps 20 3/4  
 Per centages of strength of longitudinal joint rivets 94.6 Working pressure of shell by rules 204 Size of manhole in shell 12 x 16  
 Size of compensating ring flanged No. and Description of Furnaces in each boiler 3 Morrison Material S Outside diameter 49 1/4  
 Length of plain part top 5 1/4 Thickness of plates crown 5 7/8 Description of longitudinal joint Welded No. of strengthening rings ✓  
 Working pressure of furnace by the rules 204 Combustion chamber plates: Material S Thickness: Sides 5/8 Back 5/8 Top 5/8 Bottom 15/16  
 Pitch of stays to ditto: Sides 4 x 4 1/8 Back 4 x 4 Top 4 1/8 x 4 1/8 If stays are fitted with nuts or riveted heads both Working pressure by rules 250  
 Material of stays Iron Area at smallest part 1.694 Area supported by each stay 54 Working pressure by rules 236 End plates in steam space:  
 Material S Thickness 1 1/8 Pitch of stays 16 3/4 x 15 1/2 How are stays secured D. nuts Working pressure by rules 196 Material of stays S  
 Area at smallest part 5.93 Area supported by each stay 259.6 Working pressure by rules 234 Material of Front plates at bottom S  
 Thickness 1 Material of Lower back plate S Thickness 1 1/16 Greatest pitch of stays 4.18 x 4 Working pressure of plate by rules  
 Diameter of tubes 2 1/2 OD Pitch of tubes 3 3/4 x 3 1/2 Material of tube plates S Thickness: Front 1 Back 3/4 Mean pitch of stays 9  
 Pitch across wide water spaces 13 Working pressures by rules 212 Girders to Chamber tops: Material S Depth and  
 thickness of girder at centre 2. (9 1/4 x 4 1/8) Length as per rule 35 Distance apart 4 5/8 Number and pitch of stays in each 4-4 1/8  
 Working pressure by rules 234 Steam dome: description of joint to shell \_\_\_\_\_ % of strength of joint \_\_\_\_\_  
 Diameter \_\_\_\_\_ Thickness of shell plates \_\_\_\_\_ Material \_\_\_\_\_ Description of longitudinal joint \_\_\_\_\_ Diam. of rivet holes \_\_\_\_\_  
 Pitch of rivets \_\_\_\_\_ Working pressure of shell by rules \_\_\_\_\_ Crown plates \_\_\_\_\_ Thickness \_\_\_\_\_ How stayed \_\_\_\_\_

**SUPERHEATER.** Type \_\_\_\_\_ Date of Approval of Plan \_\_\_\_\_ Tested by Hydraulic Pressure to \_\_\_\_\_  
 Date of Test \_\_\_\_\_ Is a Safety Valve fitted to each Section of the Superheater which can be shut off from the Boiler \_\_\_\_\_  
 Diameter of Safety Valve \_\_\_\_\_ Pressure to which each is adjusted \_\_\_\_\_ Is Easing Gear fitted \_\_\_\_\_

As approved. Plate. Angles. 3x4 x 3 1/2 L  
 x 3.53 x 40 L  
 4 x 9 x 73 1/2 I  
 in their  
 40-144.  
 given as it  
 Water Capacity. Tons. 222. 56.5 551.6  
 5.18.27  
 23.22.30  
 1.4.5.  
 103



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

SPARE GEAR. State the articles supplied:— 1 Crosshead box with bolts and nuts. 1 Crank pin box with bolts and nuts. 1 Set of Coupling bolts. 2 Main bearing bolts and nuts. 1 Set of Lead and Bilge Pump valves. 1 Set of Rings for Main Engine Pistons. Assorted bolts and nuts. Iron of various sizes. 1 Crank shaft. 1 Tail shaft. 2 Propeller blades. 1 Set Metallic packing. 6 set of air pumps valves. 12 Condenser Tubes. 12 Boiler tubes (plan). 6 Boiler tubes (stay). 1 Set piston rings. (See Machine). 1 Set Dynamo brushes. 1/2 set of valves for each size of Donkey Pump.

The foregoing is a correct description,

Robert. Hay *Super Shipbuilding Co*  
Manufacturer.

Dates of Survey while building: During progress of work in shops -- Jan 8. 22. 25. 29. Feb 12. 21. Mar 12. 19. 28. Apr. 5. 11. 19. 30. May 9. 14. 21. 27. June 18. 24. July 2. 9. 25. Aug 24. 29. Sept 24. 29. During erection on board vessel -- Nov 23. 24. 28. 1918 Jan 3. 25. Feb 15. 25. March 4. 12. 24. Total No. of visits 39

Is the approved plan of main boiler forwarded herewith  Copy  " " " donkey " " "

Dates of Examination of principal parts—Cylinders 28-3-14. Slides 14-4-14. Covers 14-4-14. Pistons 24-4-14. Rods 19-3-14. Connecting rods 19-3-14. Crank shaft 5-3-14. Thrust shaft 20-8-14. Tunnel shafts 20-8-14. Screw shaft 14-5-14. Propeller 25-1-18. Stern tube 25-1-18. Steam pipes tested 15-2-18. Engine and boiler seatings 25-1-18. Engines holding down bolts 25-1-18. Completion of pumping arrangements 25-2-18. Boilers fixed 12-3-18. Engines tried under steam 14-3-18. Completion of fitting sea connections 25-1-18. Stern tube 25-1-18. Screw shaft and propeller 25-1-18. Main boiler safety valves adjusted 15-3-18. Thickness of adjusting washers checked nuts. Material of Crank shaft S Identification Mark on Do. 2253WJS Material of Thrust shaft S Identification Mark on Do. 2253WJS Material of Tunnel shafts S Identification Marks on Do. 2253WJS Material of Screw shafts S Identification Marks on Do. 2253WJS. Material of Steam Pipes Steel. Test pressure 60 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 "Hester Sun".

General Remarks (State quality of workmanship, opinions as to class, &c. The machinery of this vessel has been constructed under special survey in accordance with the rules. The workmanship and materials are good. The Machinery has been fitted on board the vessel and tried under steam with satisfactory results. It is submitted that this vessel be eligible for a record of + LMC 3-18 in the Register Book, and to have the notation, Fitted for Oil Fuel, flash point above 150°F.

It is submitted that this vessel is eligible for THE RECORD. + LMC 3. 18. F.D.

Fitted for oil fuel 3. 18. F.P. above 150°F.

The amount of Entry Fee ... £# 15.00 : When applied for, Special ... £# 233.00 : 19. Donkey Boiler Fee ... £ : When received, Travelling Expenses (if any) £# 9.00 : 22.6.18

Committee's Minute New York APR 16 1918

Assigned + LMC 3. 18. Fitted for oil fuel 3. 18. F.P. above 150°F. Elec. Light

MACHINERY CERTIFICATE WRITTEN 10-5-18



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Lloyd's Register Foundation

Rpt. 13.

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DESCRIPTION

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