

Apr 19 1920

Rpt. 4.

# REPORT ON MACHINERY

No. 3767

MON. MAY 3 1920

Received at London Office

Date of writing Report 6 April 1920 When handed in at Local Office 10 April 1920 Port of Philadelphia

No. in Survey held at Chester Date, First Survey Feb 3<sup>rd</sup> 1919 Last Survey April 3<sup>rd</sup> 1920  
Reg. Book. on the S.S. ATLANTIC SUN (Number of Visits 42)

Master John T. Olson Built at Chester By whom built Sun Shipbuilding Co Tons {Gross 6666  
Net 4044 When built 1920

Engines made at Chester By whom made Sun Shipbuilding Co when made 1920

Boilers made at Chester By whom made Sun Shipbuilding Co when made 1920

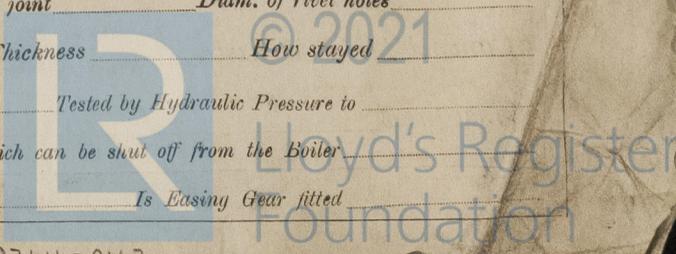
Registered Horse Power \_\_\_\_\_ Owners Sun Company Port belonging to Philadelphia

Nom. Horse Power as per Section 28 612 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 1/2 76 Length of Stroke 51 Revs. per minute 72 Dia. of Screw shaft as per rule 15.45 Material of screw shaft Steel  
 as fitted 15.75 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 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 Yes If two  
 liners are fitted, is the shaft lapped or protected between the liners \_\_\_\_\_ Length of stern bush 5' 4"  
 Dia. of Tunnel shaft as per rule 13.96 Dia. of Crank shaft journals as per rule 14.66 Dia. of Crank pin 16.5 Size of Crank webs 10 1/2 x 52 Dia. of thrust shaft under  
 collars 15 Dia. of screw 18 Pitch of Screw 16.6 No. of Blades 4 State whether moveable Yes Total surface 98.5  
 No. of Feed pumps 2 Diameter of ditto 12 x 8 Stroke 24 Can one be overhauled while the other is at work Yes  
 No. of Bilge pumps 3 Diameter of ditto see over Stroke \_\_\_\_\_ Can one be overhauled while the other is at work Yes  
 No. of Donkey Engines over Sizes of Pumps \_\_\_\_\_ No. and size of Suctions connected to both Bilge and Donkey pumps  
 In Engine Room 50 3/2 10 5 20 4 In Holds, &c. 20 3 from Cofferdam.

**BOILERS, &c.**—(Letter for record 17) Manufacturers of Steel Lukens Steel & Iron Co  
 Total Heating Surface of Boilers 9195 Is Forced Draft fitted Yes No. and Description of Boilers 3 S C Scotch J. S. B.  
 Working Pressure 190 Tested by hydraulic pressure to 295 Date of test 24. 1. 20 No. of Certificate 416  
 Can each boiler be worked separately Yes Area of fire grate in each boiler 69.5 No. and Description of Safety Valves to  
 each boiler 3 1/2 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 20 Mean dia. of boilers 15.11 1/2 Length 12.0 1/2 Material of shell plates Steel  
 Thickness 1 1/2 Range of tensile strength 60000 to 70000 Are the shell plates welded or flanged No Descrip. of riveting: cir. seams DAL  
 long. seams TRDBS Diameter of rivet holes in long. seams 1 9/16 Pitch of rivets 9 7/16 Lap of plates or width of butt straps 27 3/4  
 Per centages of strength of longitudinal joint rivets 93.7 Working pressure of shell by rules 208 Size of manhole in shell 12 x 16  
 plate 84.2 Size of compensating ring Flanged No. and Description of Furnaces in each boiler 3 Morrison Material Steel Outside diameter 52 1/4  
 Length of plain part top \_\_\_\_\_ Thickness of plates crown 5/8 Description of longitudinal joint Weld No. of strengthening rings \_\_\_\_\_  
 bottom \_\_\_\_\_ Working pressure of furnace by the rules 192.7 Combustion chamber plates: Material Steel Thickness: Sides 2 1/2 Back 3/4 Top 2 1/2 Bottom 1  
 Pitch of stays to ditto: Sides 8 1/2 x 6 1/2 Back 8 1/4 x 8 1/2 Top 8 1/2 x 8 1/2 If stays are fitted with nuts or riveted heads Both Working pressure by rules 190.9  
 Material of stays W 1 Area at smallest part 1.997 Area supported by each stay 75.468 Working pressure by rules 195 End plates in steam space:  
 Material Steel Thickness 1 1/8 Pitch of stays 6 7/8 x 16 How are stays secured D nuts Working pressure by rules 210 Material of stays Steel  
 Area at smallest part 6.2126 Area supported by each stay 240 Working pressure by rules 239 Material of Front plates at bottom Steel  
 Thickness 1 Material of Lower back plate Steel Thickness 1 1/8 Greatest pitch of stays 13 Working pressure of plate by rules 245  
 Diameter of tubes 2 1/2 Pitch of tubes 3 1/4 x 3 1/2 Material of tube plates Steel 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 Steel Depth and  
 thickness of girder at centre 10 1/2 x 2 Length as per rule 3.4 Distance apart 8 1/2 Number and pitch of stays in each 4 @ 8 1/2  
 Working pressure by rules 247 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 \_\_\_\_\_



If not, state whether, and when, one will be sent

Is a report also sent on the Hull of the ship?

IS A DONKEY BOILER FITTED? *No*

If so, is a report now forwarded?

SPARE GEAR. State the articles supplied:—

*2 Connecting Rods: top & bottom end bolts & nuts: 2 Main bearing bolts: 1 set of Coupling bolts: 1 Tail shaft: 1 section crank shaft: 1 Eccentric: 1 set of Piston springs for each piston: 1 set of Top & bottom end braces: 1 set of valves for feed & bilge pumps: a quantity of assorted bolts & nuts. Iron & mild steel of various sizes*

The foregoing is a correct description,

*Robert. Hallig*

Manufacturer.

SUN SHIPBUILDING COMPANY

Dates of Survey while building: During progress of work in shops: 1919 Feb 3<sup>rd</sup> Mar 12/25 Apr 4. 14. 29. May 6. 13. 26. Jun 6. 23. July 11. Aug 7. 19. Sep 12. 19. Oct 6. 25. Nov 7. 11. 19. During erection on board vessel: 20. Dec 12. 1920. Jan 5. 13. 15. 16. 21. 22. 24. 30. Feb 3. 9. Mar 1. 5. 12. 19. 25. 30. 31. Apr 3<sup>rd</sup> Total No. of visits: 42

Is the approved plan of main boiler forwarded herewith? *No*

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

Dates of Examination of principal parts—Cylinders 7-8-19 Slides 12-9-19 Covers 14-4-19 Pistons 26-8-19 Rods 19-8-19

Connecting rods 6-10-19 Crank shaft 7-8-19 Thrust shaft 15-1-20 Tunnel shafts 15-1-20 Screw shaft 15-1-20 Propeller 5-3-20

Stern tube 5-3-20 Steam pipes tested 19-3-20 Engine and boiler seatings 5-3-20 Engines holding down bolts 19-3-20

Completion of pumping arrangements 31-3-20 Boilers fixed 25-3-20 Engines tried under steam 31-3-20

Completion of fitting sea connections 5-3-20 Stern tube 5-3-20 Screw shaft and propeller 5-3-20

Main boiler safety valves adjusted 30-3-20 Thickness of adjusting washers *Lock nuts*

Material of Crank shaft *Steel* Identification Mark on Do. *F.H.O. J.M.* Material of Thrust shaft *Steel* Identification Mark on Do. *J.M.*

Material of Tunnel shafts *Steel* Identification Marks on Do. *J.M.* Material of Screw shafts *Steel* Identification Marks on Do. *J.M.*

Material of Steam Pipes *Steel* Test pressure *650 lb*

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? *No* If so, state name of vessel

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

*Pumps: 2 Radijets: Fuel 12x8x24 Ann Fuel 12x8x24 Donkey 14x10x12 Water service & Sanitary 6x5 3/4 x 6 Fresh water 5 1/2 x 4 3/4 x 5 Fuel oil transfer 10x6x10. Cargo bilge 6x5 3/4 x 6 Engine Room bilge 8x5 1/2 x 6. 6x5 3/4 x 6 Pump Room bilge 6x5 3/4 x 6 Condensate 7 1/2 x 5. 10 Fuel oil service 2 D 6x4x6. Evaporator 5 1/4 x 4 3/4 x 5 Cargo oil 2 D 16x14x18 V*

*The Machinery of this vessel has been built under Special Survey in accordance with the approved plans. The Workmanship and materials all good. The machinery has been tried under steam and found satisfactory. It is submitted that the vessel be eligible for a record of + L.M.C. 4-20. and to have notation fitted for oil fuel 4-20 Flash point above 150°F in the Register Book.*

**It is submitted that this vessel is eligible for THE RECORD, + L.M.C. 4-20 F.D.**

**FITTED FOR OIL FUEL 4-20 F.P. ABOVE 150°F**

The amount of Entry Fee ... \$15.00 : When applied for, ...  
Special ... \$253.00 :  
Donkey Boiler Fee ... £ :  
Travelling Expenses (if any) \$10.00 :  
When received, 7/5/20

*J. Adamson*  
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute, New York APR 20 1920

Assigned, + L.M.C. 4-20

MACHINERY WRITTEN 3-5-20

