

# REPORT ON MACHINERY.

NEW YORK Nov 25-1919

Received at London Office

Date of writing Report Nov 20 1919 When handed in at Local Office

Port of Philadelphia Pa

No. in Survey held at Chester Pa

Date, First Survey July 16 1918 Last Survey Nov 4 1919

Reg. Book. on the Steel Screw Steamer "SUNSHINE"

(Number of Visits 44)

Master S.N. Groves Built at Chester Pa By whom built Sun Ship Bldg Co

Tons Gross 6664 Net 4148 When built 1919

Engines made at Chester Pa By whom made Sun Ship Bldg Co

when made 1919

Boilers made at Chester Pa By whom made Sun Ship Bldg Co

when made 1919

Registered Horse Power Owners The 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 24 4 1/2 7 1/2 Length of Stroke 51 Revs. per minute 72 Dia. of Screw shaft as per rule 11 1/2 as fitted 11 7/8 Material of screw shaft 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

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 Yes

are fitted, is the shaft lapped or protected between the liners No Length of stern bush 5'-4"

Dia. of Tunnel shaft as per rule 13.96 as fitted 14.25 Dia. of Crank shaft journals as per rule 14.66 as fitted 15 Dia. of Crank pin 15.5 Size of Crank webs 10 1/4 x 16 Dia. of thrust shaft under

bars 15 Dia. of screw 18 Pitch of Screw 17 No. of Blades 4 State whether moveable Yes Total surface 98

No. of Feed pumps 2 Diameter of ditto 14 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 over leaf Sizes of Pumps No. and size of Suctions connected to both Bilge and Donkey pumps

Engine Room 7 Boiler room 6 - 3 1/2 In Holds, &c. 1 - 3" in aft cofferdam 2 - 2 1/2" in package freight

No. of Bilge Injections 1 sizes 10" Connected to condenser, or to circulating pump pump Is a separate Donkey Suction fitted in Engine room & size Yes - 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 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 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 8-9-19 of Stern Tube 19-9-19 Screw shaft and Propeller 19-9-19

Is the Screw Shaft Tunnel watertight Yes Is it fitted with a watertight door No worked from No

MANUFACTURERS, &c.—(Letter for record Yes) Manufacturers of Steel Lukens S & S Co

Total Heating Surface of Boilers 9198 Is Forced Draft fitted Yes No. and Description of Boilers 3 SE Scotch

Working Pressure 190 Tested by hydraulic pressure to 285 Date of test 12-3-19 No. of Certificate 304

Can each boiler be worked separately Yes Area of fire grate in each boiler 69 No. and Description of Safety Valves to

each boiler 2 Spring Loaded 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 24 Mean dia. of boilers 13 1/2 - 11 3/2 Length 12 - 1 3/8 Material of shell plates Steel

Thickness 1 1/2 Range of tensile strength 60,000 Are the shell plates welded or flanged No Descrip. of riveting: cir. seams DRL

seams TRBS Diameter of rivet holes in long. seams 19/16 Pitch of rivets 9 1/16 Lap of plates or width of butt straps 22 3/4

Percentages of strength of longitudinal joint rivets 93.77 plate 84.22 Working pressure of shell by rules 208 Size of manhole in shell 12" x 16"

No. of compensating ring Flange No. and Description of Furnaces in each boiler 3 Monson Material Steel Outside diameter 52 1/4

Thickness of plates top 7/8 bottom 5/8 Description of longitudinal joint Weld No. of strengthening rings 1

Working pressure of furnace by the rules 192.7 Combustion chamber plates: Material Steel Thickness: Sides 3/32 Back 2 1/32 Top 3/32 Bottom 1"

Thickness of stays to ditto: Sides 8 1/2 x 6 1/2 Back 8 3/4 x 5 1/2 Top 8 1/2 x 8 3/8 If stays are fitted with nuts or riveted heads Riveted heads Working pressure by rules 200

Material of stays W.I Diameter at smallest part 1.99 Area supported by each stay 74.35 Working pressure by rules 201 End plates in steam space:

Material Steel Thickness 1 1/8 Pitch of stays 6 7/8 x 1 7/8 How are stays secured D-Nuts Working pressure by rules 190.5 Material of stays Steel

Material at smallest part 5.93 Area supported by each stay 29.42 Working pressure by rules 236 Material of Front plates at bottom Steel

Thickness 1 Material of Lower back plate Steel Thickness 1 1/16 Greatest pitch of stays 1 1/4 Working pressure of plate by rules 220

Diameter of tubes 2 1/2 Pitch of tubes 3 3/4 x 3 3/2 Material of tube plates Steel Thickness: Front 1 Back 3/4 Mean pitch of stays 9

Thickness 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 3/8 Number and pitch of stays in each 4-8 1/2

Working pressure by rules 247 Superheater or Steam chest; how connected to boiler Can the superheater be shut off and the boiler worked

separately 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

Are they fitted with rings Distance between rings Working pressure by rules 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 crank, 1 tail shaft, 2 propeller blades, 1 eccentric, 1 set rings for each piston, 2 top & bottom end bolts & nuts, 1 set top & bottom end braces, 2 main bearing bolts & nuts, 1 set coupling bolts, 1 set suction & discharge valves for bilge and feed pumps, 25 boiler tubes, 12 condenser tubes, 50 funnels, a quantity of assorted bolts & nuts of various sizes.

The foregoing is a correct description,

Robert H. Aug

Manufacturer.

Dates of Survey while building: During progress of work in shops - July 16, Aug 2-21, Sept 13-18-23, Oct 4-15-23-30, Nov 6-20, Dec 5-11-13-21, Jan 6-7-13-15, Feb 3-6-13-21, Mar 12, April 18, 1918; During erection on board vessel - May 13, June 18, July 7, Aug 11-20-29, Sept 2-4-8-19-21, Oct 15-21-27-31, Nov 7; Total No. of visits: 44

Is the approved plan of main boiler forwarded herewith? Yes

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

Dates of Examination of principal parts: Cylinders 5-12-18, Slides 5-12-18, Covers 5-12-18, Pistons 6-11-18, Rods 13-12-18, Connecting rods 6-1-19, Crank shaft 6-1-19, Thrust shaft 6-6-19, Tunnel shafts 6-6-19, Screw shaft 13-5-19, Propeller 13-5-19, Stern tube 21-8-18, Steam pipes tested 21-10-18, Engine and boiler seatings 7-7-18, Engines holding down bolts 15-10-19, Completion of pumping arrangements 7-11-19, Boilers fixed 31-10-19, Engines tried under steam 7-11-19, Main boiler safety valves adjusted 31-10-19, Thickness of adjusting washers Locknuts

Material of Crank shaft Steel, Identification Mark on Do. 3500 W.S.S., Material of Thrust shaft Steel, Identification Mark on Do. 603 F.H.O. 1005 J.M., Material of Tunnel shafts Steel, Identification Marks on Do. 3499 J.M., Material of Screw shafts Steel, Identification Marks on Do. 2998 W.S.S.

Material of Steam Pipes Seamless Steel, Test pressure 600 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. "SUN BEAM"

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

Bilge pump engine 6"x5 1/4"x6", Donkey pump 14"x10"x12", For bilge pump 9"x8 1/2"x10", Transfer pumps (2) 10"x6"x10", aux feed pump 6"x4"x6", 10"x8"x24", Fresh water & Condensate each 5 1/4"x4 3/4"x5", main ship Bilge pump 6"x5 1/4"x6". The machinery of this vessel has been constructed under Special Survey, in accordance with the approved plans. The workmanship & materials are good.

The machinery has been securely fitted on board the vessel, tried under steam with satisfactory results.

It is submitted that the vessel be eligible for a record of + L.M.C 11-19 fitted for fuel oil 11-19, flash point above 150°F in the Register Book.

It is submitted that this vessel is eligible for THE RECORD + L.M.C 11-19 F.D. FITTED FOR OIL FUEL 11-19. F.P. ABOVE 150°F.

The amount of Entry Fee ... \$15:00: When applied for, Special ... \$253:00: Nov 21 1919, Donkey Boiler Fee ... £: When received, Travelling Expenses (if any) \$10:00: 23/11/19

Wm. Runham

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

Committee's Minute New York NOV 25 1919

Assigned + L.M.C. 11.19

MACHINERY CERT. WRITTEN 9/12/19



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