

REPORT ON OIL ENGINE MACHINERY.

No. 8037

Date of writing Report 30 April 41 When handed in at Local Office 5 May 41 Port of Philadelphia Received at London Office 9 JUL 1941
 No. in Survey held at Lechester Pa Date, First Survey Nov 15 1940 Last Survey 19 March 1941
 Reg. Book. M ATLANTIC SUN Number of Visits 22

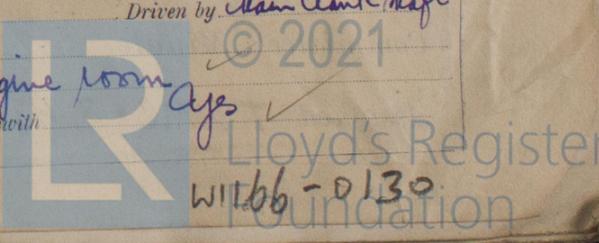
on the Triple Screw vessel ATLANTIC SUN Tons ^{Gross} 11375 _{Net} 6891
 Built at Lechester Pa By whom built Sum 813 7 D D Co Yard No. 212 When built 1941
 Engines made at " By whom made " Engine No. " When made "
 Donkey Boilers made at Barnet N.J By whom made Foster Wheeler Corporation Boiler No. " When made "
 Brake Horse Power 7100 Owners Sum Oil Co Port belonging to Philadelphia
 Nom. Horse Power as per Rule 1590 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes
 Trade for which vessel is intended Carrying Petroleum in bulk.

IL ENGINES, &c. Type of Engines Sum-Detroit - Opposed piston 2 or 4 stroke cycle 2 Single or double acting Single
 Maximum pressure in cylinders 600 lbs Diameter of cylinders 32" Length of stroke 15 1/4 140" No. of cylinders 5 No. of cranks 6
 Mean Indicated Pressure 96.5 lb Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 47" ^{51 3/4" over centre webs} 65" between centres Is there a bearing between each crank Yes
 Revolutions per minute 94 Flywheel dia. None Weight " Means of ignition Compression Kind of fuel used Bunker "C"
 Crank Shaft, ^{Solid forged} dia. of journals as per Rule 24" ^{Semi built} as fitted 24" Crank pin dia. 24 1/2" Crank Webs Mid. length breadth 148" ^{46 3/4"} Thickness parallel to axis 10 17/16 13 1/2"
 Flywheel Shaft, diameter as per Rule " as fitted " Intermediate Shafts, diameter as per Rule 19.008" as fitted 23" Thrust Shaft, diameter at collars as per Rule 20" as fitted 23"
 Tube Shaft, diameter as per Rule " as fitted " Screw Shaft, diameter as per Rule 20.708" as fitted 21 5/8" Is the Hub shaft fitted with a continuous liner Yes
 Bronze Liners, thickness in way of bushes as per Rule 735" as fitted 1 1/16" Thickness between bushes as per Rule " as fitted " Is the after end of the liner made watertight in the propeller boss Yes
 If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner 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 Yes Is an approved Oil Gland or other appliance fitted at the after end of the tube Yes
 If so, state type Man bronze Length of Bearing in Stern Bush next to and supporting propeller 9-6 1/2"

Propeller, dia. 21'-8" Pitch 17' 0" No. of blades 4 Material Man bronze whether Moveable No Total Developed Surface 145.3 sq. feet
 Method of reversing Engines Piding cam shaft Is a governor or other arrangement fitted to prevent racing of the engine when disconnected Yes Means of lubrication Yes
 Thickness of cylinder liners 1 1/8" Are the cylinders fitted with safety valves Yes Are the exhaust pipes and silencers water cooled or lagged with non-conducting material Yes
 If the exhaust is led overboard near the waterline, what means are arranged to prevent water from being syphoned back to the engine 2 feet water for cooling
 Cooling Water Pumps, No. 2 feet water for main engines Is the sea suction provided with an efficient strainer which can be cleared within the vessel Yes
 Bilge Pumps worked from the Main Engines, No. " Diameter " Stroke " Can one be overhauled while the other is at work Yes
 Pumps connected to the Main Bilge Line { No. and Size 1-12" X 8 1/2" X 12" hor duplex How driven Steam 1 centrifugal 200 galls per min motor

Is the cooling water led to the bilges No If so, state what special arrangements are made to deal with this water in addition to the ordinary bilge pumping arrangements Yes
 Ballast Pumps, No. and size 1-12" X 8 1/2" X 12" hor duplex 1-10" X 7" X 10" Power Driven Lubricating Oil Pumps, including Spare Pump, No. and size 2-7 1/2" X 9" X 12"
 Are two independent means arranged for circulating water through the Oil Cooler Yes Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge pumps, No. and size:—In Machinery Spaces 8-3 1/2" 1-2" Lub oil pump cofferdam 6-3" in ER 1-4" In Pump Room 1-4"
 Holds, &c. 4-2 1/2" 2-2" Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size 1-14" 2-4" according to plan
 Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes Yes Are the Bilge Suctions in the Machinery Spaces Yes
 Are they fitted with Valves or Cocks Yes Are they fixed sufficiently high on the ship's side to be seen without lifting the platform plates Yes
 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 below meets pool at ship side
 What pipes pass through the bunkers 1-14" bilge suction from cofferdam How are they protected By pipe tunnel
 What pipes pass through the deep tanks Forward bilge & ballast suction Have they been tested as per Rule Yes
 Are all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times Yes
 Is the arrangement of valves and their connections such as to prevent the possibility of water passing from the sea or from water tanks into the cargo or machinery spaces, or from one compartment to another Yes Is the Shaft Tunnel watertight None Is it fitted with a watertight door Yes worked from Yes

On a wood vessel, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork Yes
 Main Air Compressors, No. 3 No. of stages 3 Diameters 5 1/2" X 3" Stroke 5 1/2" X 5" Driven by motor Elec
 Auxiliary Air Compressors, No. 1 No. of stages 2 Diameters 5" X 2" Stroke 5" Driven by motor Elec
 Small Auxiliary Air Compressors, No. 1 No. of stages 2 Diameters 5" X 3" Stroke 3 1/2" Driven by motor Elec
 What provision is made for first Charging the Air Receiver By starting emergency compressor & then aux air compressor.
 Charging Air Pumps, No. 1 Diameter 8 1/4" Stroke 58" Driven by Main crank shaft
 Auxiliary Engines crank shafts, diameter as per Rule Steam turbine as fitted Yes No. " Position Engine room Is a report sent herewith Yes



AIR RECEIVERS:—Have they been made under survey *Yes* State No. of Report or Certificate *4256 WHR*

Is each receiver, which can be isolated, fitted with a safety valve as per Rule *Yes*
Can the internal surfaces of the receivers be examined and cleaned *Yes* Is a drain fitted at the lowest part of each receiver *Yes*

Injection Air Receivers, No. *-* Cubic capacity of each *-* Internal diameter *-* thickness *-*
Seamless, lap welded or riveted longitudinal joint *-* Material *-* Range of tensile strength *-* Working pressure *-*

Starting Air Receivers, No. *3* Total cubic capacity *486 Cuft* Internal diameter *42"* thickness *1 3/16"*
Seamless, lap welded or riveted longitudinal joint *Welded* Material *Steel* Range of tensile strength *576,600* Working pressure *650 lb*

IS A DONKEY BOILER FITTED? *Yes* If so, is a report now forwarded? *Yes*

Is the donkey boiler intended to be used for domestic purposes only *No*

PLANS: Are approved plans forwarded herewith for Shafting *April 18 1940* Receivers *Nov 3 1939 Oct 25 1939* Separate Fuel Tanks *-*

Donkey Boilers *12 March 1940* General Pumping Arrangements *Oct 15 1940* Pumping Arrangements in Machinery Space *Jan 6 1940*

Oil Fuel Burning Arrangements *-* SPARE GEAR.

Has the spare gear required by the Rules been supplied *Yes*

State the principal additional spare gear supplied
1 Upper & lower piston rods, 1 main piston, 2 piston skirts, 1 engine brake valve complete, 5 hoses for piston water service, 1 complete feed lubricator, 1 fuel oil pump rams & guides, 1 bundle of tubes for lubricating oil cooler.

The foregoing is a correct description
Sun Shipbuilding Corp. Chief Eng. Manufacturer.

Dates of Survey while building
During progress of work in shops-- *1940 Dec 2-19, Jan 6, 18, 27, 28, Feb 5-6-12-13-14, 20, 1941.*
During erection on board vessel-- *Nov 15, Jan 7, 23, Feb 1-11-18-21-25, March 5-19, 1941*
Total No. of visits *22.*

Dates of Examination of principal parts—Cylinders *5 Feb* Covers *5 Feb* Pistons *12 Feb* Rods *12 Feb* Connecting rods *13 Feb*
Crank shaft *18 Jan* Flywheel shaft *14 Jan* Thrust shaft *14 Jan* Intermediate shafts *18 Jan* Tube shaft *-*
Screw shaft *18 Jan* Propeller *18 Jan* Stern tube *7 Jan* Engine seatings *23 Jan* Engines holding down bolts *25 Feb.*
Completion of fitting sea connections *7 Jan* Completion of pumping arrangements *19 March* Engines tried under working conditions *19 March*
Crank shaft, Material *OH Steel* Identification Mark *see firing report* Flywheel shaft, Material *-* Identification Mark *-*
Thrust shaft, Material *"* Identification Mark *9077 JCM* Intermediate shafts, Material *O.H. Steel* Identification Marks *6824 HBC Reg 7021 JK*
Tube shaft, Material *"* Identification Mark *-* Screw shaft, Material *O.H. Steel* Identification Mark *Reg 7022 JK*
Identification Marks on Air Receivers *4256 WHR.*

Is the flash point of the oil to be used over 150° F. *Yes*

Have the requirements of the Rules for oil fuel pipes and tank fittings been complied with *Yes*

Is the vessel (not being an oil tanker) fitted for carrying oil as cargo *Yes* If so, have the requirements of the Rules been complied with *Yes*

If the notation for Ice Strengthening is desired, state whether the requirements in this respect have been complied with *Yes*

Is this machinery duplicate of a previous case *Yes* If so, state name of vessel *AMERICA SUN*

General Remarks (State quality of workmanship, opinions as to class, &c.) *This installation has been constructed under Special Survey, and in accordance with the approved plans, the workmanship & materials are good, the installation has been tried out under full power & found satisfactory. In my opinion this installation is eligible to receive the record of + LMC 3, 41.*

After the trial trip the welded bedplate & entablatures were carefully examined & no signs of fractures or weakness were discovered.

The amount of Entry Fee *\$30 00* Survey of entablatures *65-\$* H. Air Receivers *120\$ 4.00\$ Exp.*
Special ... *\$699 00* When applied for *15 May 1941*
Donkey Boiler Fee *\$230 00* When received, *1941*
Travelling Expenses (if any) *£*

Committee's Minute *NEW YORK MAY 28 1941*
Assigned *+ LMC-3, 41. Oil Eng.*
W. W. Cunham
Engineer Surveyor to Lloyd's Register of Shipping.

