

REPORT ON OIL ENGINE MACHINERY.

No. 3238

SEP 11 1937

Date of writing Report 21st Aug. 37 21st Aug. 37 Port of GALVESTON
 No. in Survey held IN PHOP. Cleveland ship. March 94 May 25 Last Survey June 26 1934
 Reg. Book 39158 on the Single Triple Quadruple Screw vessel "MR MERCURY" Tons Gross 1518.04 Net 1182.00
 Built at Beaumont, Texas. By whom built Pennsylvania Shipyard Inc. No. 116 When built 1934-6
 Engines made at Cleveland, Ohio By whom made Winton Engine Corp. Engine No. 5314 When made 1934
 Donkey Boilers made at Dowdington, Pa. By whom made Dowdington Iron Works Boiler No. — When made 1934
 TOTAL Brake Horse Power 930 Owners Cleveland Tankers, Inc. Port belonging to Wilmington, Del.
 Nom. Horse Power as per Rule 230 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes
 Trade for which vessel is intended For service on the Great Lakes

OIL ENGINES, &c.—Type of Engines Winton Model 158.6 2 or 4 stroke cycle 4 Single or double acting Single
 Maximum pressure in cylinders 700 lbs Diameter of cylinders 14" Length of stroke 16" No. of cylinders 16 No. of cranks 6
 Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 16" Is there a bearing between each crank Yes
 Revolutions per minute 300 Flywheel dia. 36 1/2" Weight 2,000 lbs Means of ignition Comp. Kind of fuel used Diesel oil
 Crank Shaft, dia. of journals 4.94" as per Rule 9" Crank pin dia. 9" Crank Webs 11" Mid. length breadth 4 1/8" Thickness parallel to axis Solid
 as fitted 9" Mid. length thickness 4 1/8" Thickness around eye hole Forged
 Flywheel Shaft, diameter as per Rule Intermediate Shafts, diameter as per Rule Thrust Shaft, diameter at collars as per Rule
 as fitted as fitted none as fitted as fitted
 Tube Shaft, diameter as per Rule Screw Shaft, diameter as per Rule Is the tube shaft fitted with a continuous liner
 as fitted as fitted 7 1/2 to 7 5/8" Is the screw shaft fitted with a continuous liner
 Bronze Liners, thickness in way of bushes as per Rule Thickness between bushes as per Rule Is the after end of the liner made watertight in the
 as fitted 5/8" x 19/32" as fitted as fitted
 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 Two liners, shaft
 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
 shaft No If so, state type at 25 1/3" radius 3.8" Length of Bearing in Stern Bush next to and supporting propeller 2' 9 1/2"
 Propeller, dia. 6' 4" Pitch varies No. of blades Three (3) Material Brass Whether Moveable Yes Total Developed Surface 14.66 sq. feet
 Method of reversing Engines Direct Is a governor or other arrangement fitted to prevent racing of the engine when decoupled Yes Means of lubrication
Forced Thickness of cylinder liners 15/16" Are the cylinders fitted with safety valves Yes Are the exhaust pipes and silencers water-cooled Yes
 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 Exhaust looped upwards
 Cooling Water Pumps, No. 1-2 cyl. D.A. Is the sea suction provided with an efficient strainer which can be cleared within the vessel Yes
120 G.P.M. What special arrangements are made for dealing with cooling water if discharged into bilges none discharging into bilges
 Bilge Pumps worked from the Main Engines, No. none Diameter — Stroke — Can one be overhauled while the other is at work Yes
 INDEPENDENT BALLAST Pumps, No. and Size One - 6" x 5 1/4" x 6" Duplex One Centrifugal Pump
 Pumps connected to the Main Bilge Line How driven Steam pump Force 18. H.P. Petrol motor
 Ballast Pumps, No. and size above two pumps can be used each engine 1-2 cyl. D.A. 30 G.P.M.
Copper down, after Peak & Pump room. Power Driven Lubricating Oil Pumps, including Spare Pump, No. and size with exact connection
 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 2-2 1/2" x 1-5" In Pump Room 1-1 3/4"
 In Holds, &c. none

Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size as above
 Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes Yes Are the Bilge Suctions in the Machinery Spaces
 led from easily accessible mud-boxes, placed above the level of the working floor, with straight tail pipes to the bilges Yes
 Are all Sea Connections fitted direct on the skin of the ship Yes Are they fitted with Valves or Cocks Valved
 Are they fixed sufficiently high on the ship's side to be seen without lifting the platform plates Yes Are the Overboard Discharges 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
 What pipes pass through the bunkers none How are they protected Yes
 What pipes pass through the deep tanks Yes 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 mach. aft Is it fitted with a watertight door — worked from —

Is the wood vessel, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork Yes
 Solid Injection Main Air Compressors, No. one No. of stages Two Diameters 6 1/2" x 2 3/4" Stroke 5 1/2" Driven by 100 B.H.P. oil Eng. 4 S.C.S.A.
 Auxiliary Air Compressors, No. one No. of stages Two Diameters 4" x 3 1/2" Stroke 4" Driven by 5 K.W. oil Eng. 4 S.C.S.A.
 Small Auxiliary Air Compressors, No. — No. of stages — Diameters — Stroke — Driven by —
 Scavenging Air Pumps, No. — Diameter — Stroke — Driven by —

Auxiliary Engines crank shafts, diameter as per Rule No. — Position —
 as fitted Lee Rpt 4c.
 AIR RECEIVERS:—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
 High Pressure 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. Line (6) Total cubic capacity 53.1 Internal diameter 15" thickness HEADS 5/16"
 Seamless, lap welded or riveted longitudinal joint Steel Range of tensile strength 60,000 lbs Working pressure 400
COPPER BRAZED by Rules 400 Actual 400 lbs

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 Yes

Receivers No Yes

Separate Tanks No

Donkey Boilers Yes

General Pumping Arrangements No

Oil Fuel Burning Arrangements Yes

SPARE GEAR.

Has the spare gear required by the Rules been supplied? Yes (For Service on Great Lakes).

State the principal additional spare gear supplied

- 2- Exhaust valves complete with cages and springs etc.
- 2- Injection valves complete with cages, & springs etc.
- 3- Fuel injection valve needles.
- 1- Starting air valve complete with cage, springs, etc.
- 1- Set of piston rings for one piston.
- 1- Set of working parts for one cylinder of fuel pump.
- 1- Set of working parts for one cylinder of lubricating pump.
- 1- wrist pin & bushing.
- 1- Complete crank pin bearing.
- 2- Crank pin bearing bolts and nuts.
- 2- main bearing bolts and nuts.
- 1- Set of cylinder studs & nuts for cylinder heads.
- Assortment of tools, material, etc.
- 2- Spare propellers.

The foregoing is a correct description.

Signed: Winton Engine Mfg. Corp. E.R.B. Manufacturer.

Dates of Survey while building: During progress of work in shops - March 9, 12, 14, 20 and 24. April 11, 12, 15, and 18, 1934 - (13)
During erection on board vessel - May 25, 28, June 5, 9, 16, 21, 23, 24, 25, 26, 1934 - (10)
Total No. of visits 23.

Dates of Examination of principal parts - Cylinders 3/9/34 Covers 3/9-24/34 Pistons 3/9-24/34 Rods 3/9-24/34 Connecting rods 3/9-24/34
Crank shaft 3/9-17/34 Flywheel shaft 3/24/34 Thrust shaft 2/4/34 Intermediate shafts 3/9-24/34 Tube shaft 3/9-24/34
Screw shaft 5/2/34 Propellers 20/4/34 Stern tubes 20-24/4/34 Engine seatings 17/5/34 Engines holding down bolts 9/6/34
Completion of fitting sea connections 17/5/34 Completion of pumping arrangements 23/6/34 Engines tried under working conditions 25-26/6/34
Crank shaft, Material O.H. Steel Identification Mark 11/2/37 1/19/37 Flywheel shaft, Material Identification Mark 3255 3235
Thrust shaft, Material O.H. Steel Identification Mark 4/1/37 W.R. Intermediate shafts, Material Identification Marks 3112, 3113
Tube shaft, Material Identification Mark 2/5/37 G.D. Screw shaft, Material Identification Mark O.H. Steel

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 Main Engines Yes If so, state name of vessel M.Y. AVALON. CLV. Rpt. N° 547.

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

The Subject engines have been built under special survey, and on completion were tested under full and intermediate loads at the Builders Plant. The materials workmanship and tests were found satisfactory. When the engines have been fitted in the vessel, and tried out to the satisfaction of the Society's Surveyor, she will be eligible in my opinion for record + LMC (with date) in the Register Book. Signed G. Drummond.

The whole of the machinery has been efficiently installed & securely fitted in the vessel, tried and tested under working conditions in accordance with the Rules, and found to be in a good and safe condition. In my opinion vessel is eligible to have records + LMC 6,37 (in red) Screw Shaft CL, DB 125 lbs, Exhaust Gal, Lee Clv. Rpt 849, approved plans, & Forging Reports & Certificates, forwarded herewith.

The amount of Entry Fee £ 20.00

When applied for, 16/4/1937

Special Price of Machy. Elect. Fitting £ 177.50

& Donkey Boiler £ 25.62

Travelling Expenses (if any) £

Committee's Minute

Assigned + LMC 6-37 Oil Eng.

Engineer Surveyor to Lloyd's Register of Shipping.



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