

a List of
tpt. 4b

REPORT ON OIL ENGINE MACHINERY.

No. 6112

Received at London Office.....
 Date of writing Report MAY 20th 1930 When handed in at Local Office MAY 20th 1930 Port of PHILADELPHIA
 Date, First Survey FEB. 6th Last Survey MAY 17th 1930
 Number of Visits 40
 Date in Survey held at CHESTER PA.
 Date of Book.....
 Name of vessel M/V WESTERN SUN
 Type of vessel Screw vessel
 Tons { Gross 9089
 Net 5562
 Built at CHESTER, PA. By whom built SUN S. B. & D. Co. Yard No. 123 When built 1930
 Engines made at Do. By whom made Do. Engine No. 7512 When made 1930
 Donkey Boilers made at CHATTANOOGA, TEN. By whom made THE HEDGES-WALSH-WEIDNER Co. Boiler No. When made 1930
 Brake Horse Power 2800 Owners MOTOR TANKSHIP CORP. Port belonging to PHILADELPHIA
 Nom. Horse Power as per Rule 690 Is Refrigerating Machinery fitted for cargo purposes No. Is Electric Light fitted YES
 Trade for which vessel is intended PETROLEUM IN BULK

MAIN ENGINES, &c.—Type of Engines SUN-DOXFORD OPPOSED PISTON 2 or 4 stroke cycle 2 Single or double acting SINGLE
 Maximum pressure in cylinders 600 lbs. Diameter of cylinders 600^{mm} Length of stroke 1160^{mm} x 2 No. of cylinders 4 No. of cranks 12
 Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 2370^{mm} Is there a bearing between each crank YES
 Revolutions per minute 80 Flywheel dia. 2644^{mm} Weight 24,400 lbs. Means of ignition COMP. AIR Kind of fuel used DIESEL OIL
 Crank Shaft, dia. of journals as per Rule APPD. as fitted 440^{mm} Crank pin dia. 470^{mm} Crank Webs Mid. length breadth 310^{mm} Thickness parallel to axis —
 as fitted 440^{mm} Mid. length thickness 197^{mm} shrunk Thickness around eyehole —
 Flywheel Shaft, diameter as per Rule APPD. as fitted 17.3" Intermediate Shafts, diameter as per Rule APPD. as fitted 22" Thrust Shaft, diameter at collars as per Rule APPD. as fitted 17.3"
 Tube Shaft, diameter as per Rule — as fitted — Screw Shaft, diameter as per Rule APPD. as fitted 16¹/₂" Is the { tube screw } shaft fitted with a continuous liner { YES }
 Bronze Liners, thickness in way of bushes as per Rule 15" as fitted 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 —
 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 — Is an approved Oil Gland or other appliance fitted at the after end of the tube
 aft No. If so, state type — Length of Bearing in Stern Bush next to and supporting propeller 6' 0"
 Propeller, dia. 17' 9" Pitch 15' 6" No. of blades 4 Material BRONZE whether Moveable YES Total Developed Surface 106.2 sq. feet
 Method of reversing Engines DIRECT Is a governor or other arrangement fitted to prevent racing of the engine when declutched YES Means of lubrication
FORCED Thickness of cylinder liners 25^{mm} Are the cylinders fitted with safety valves YES Are the exhaust pipes and silencers water cooled or lagged with
 non-conducting material BOTH If the exhaust is led overboard near the waterline, what means are arranged to prevent water from being syphoned back to the engine SMOKESTACK
 Cooling Water Pumps, No. 1 SALT. 2 FRESH 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 —
 Pumps connected to the Main Bilge Line { No. and Size 1 @ 7 1/2" x 8 1/2" x 10" H.A. D.P. 1 @ 4" ROTARY. 1 @ 4" TWO-STAGE CENTRIFUGAL.
 How driven MOTOR & STEAM.
 Ballast Pumps, No. and size 10" x 6" TWO-STAGE CENT. Lubricating Oil Pumps, including Spare Pump, No. and size 2 @ 150 GALS. P.M. EACH.
 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 4 @ 3 1/2" 5 @ 2" In Pump Room —
 Holds, &c. FORE PK. 1 @ 3" AFT. PK. 1 @ 3" CHAIN LOCKER 1 @ 2 1/2" FORE HOLD 1 @ 3"
 Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size 2 @ 5" 1 @ 4"

Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes YES Are the Bilge Suctions in the Machinery Spaces
 and 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 VALVES
 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 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 pass through the bunkers — How are they protected —
 What pipes pass through the deep tanks — Have they been tested as per Rule —
 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 — worked from —
 If a wood vessel, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork —

Main Air Compressors, No. NONE No. of stages — Diameters — Stroke — Driven by —
 Auxiliary Air Compressors, No. ONE No. of stages 3 Diameters 10 1/2" 6 3/4" 3 1/2" Stroke 6" x 5" Driven by STEAM
 Small Auxiliary Air Compressors, No. ONE No. of stages 3 Diameters 11 1/2" 9 3/4" 2 3/4" Stroke 6" Driven by MOTOR
 Scavenging Air Pumps, No. ONE Diameter 62 1/2" Stroke 41" Driven by MAIN ENGINES
 Auxiliary Engines crank shafts, diameter as per Rule APPD. as fitted APPD. Ann. bil. engine (See Elec. Lk. Rpt.)

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. ONE Cubic capacity of each 8 CUB. FT. Internal diameter 11 3/4" thickness 1/2"
 Seamless, lap welded or riveted longitudinal joint SEAMLESS Material STEEL Range of tensile strength 27-32 TNS. Working pressure by Rules 700 lbs.
 Actual 700 lbs.
 Starting Air Receivers, No. TWO Total cubic capacity 300 CUB. FT. Internal diameter 3' 7 1/4" thickness 1 3/4"
 Seamless, lap welded or riveted longitudinal joint T.R. O.B.S. Material STEEL Range of tensile strength 27-32 TNS. Working pressure by Rules 612 1/2 lbs.
 Actual 600 "

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 SEE HULL 120 Receivers SEE HULL 120 Separate Tanks —
(If not, state date of approval)
Donkey Boilers Yes General Pumping Arrangements — 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 PISTON COMPLETE, 1 CYL. RELIEF VALVE COMPLETE, 2 CEN. CON. ROD TOP END, 2 BOT. END BEARINGS, 2 SIDE CON. ROD BOT. END BEARINGS, 1 INT. SECTION FOR CRANK SHAFT, 1 TAIL SHAFT.

The foregoing is a correct description,

Manufacturer.

Dates of Survey while building
During progress of work in shops 1930. FEB. 6, 11, 14, MAR. 7, 10, 11, 13, 14, 15, 17, 18, 19, 21, 22, 24.
During erection on board vessel MAR. 25, 26, 27, 28, APR. 1, 2, 4, 7, 11, 12, 17, 22, 23, 24, 28, 29, 30 MAY. 1, 3, 8, 9, 10, 12.
Total No. of visits 17. 40.

Dates of Examination of principal parts—Cylinders 19.3.30 Covers — Pistons 10.3.30 Rods 10.3.30 Connecting rods 11.3.30

Crank shaft 28.2.30 Flywheel shaft 26.3.30 Thrust shaft 26.3.30 Intermediate shafts 26.3.30 Tube shaft —

Screw shaft 26.3.30 Propeller 24.3.30 Stern tube 3.5.30 Engine seatings 24.4.30 Engines holding down bolts 25.3.30

Completion of fitting sea connections 9.5.30 Completion of pumping arrangements 3.5.30 Engines tried under working conditions 13.5.30

Crank shaft, Material O.H. STEEL Identification Mark 1054 J.M.B. Flywheel shaft, Material O.H. STEEL Identification Mark 1051 L.N.26

Thrust shaft, Material O.H. STEEL Identification Mark L.N. 1051.2633 Intermediate shafts, Material O.H. STEEL Identification Marks 994 L.N.16

Tube shaft, Material — Identification Mark — Screw shaft, Material O.H. STEEL Identification Mark 1043 L.N.16

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? — If so, have the requirements of the Rules been complied with? —

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

Is this machinery duplicate of a previous case? Yes. If so, state name of vessel "CHESTER SUN"

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

THE MACHINERY HAS BEEN BUILT UNDER SPECIAL SURVEY, THE MATERIALS AND WORKMANSHIP ARE OF GOOD DESCRIPTION, HYDRAULIC TESTS SATISFACTORY, IT HAS BEEN FITTED ON BOARD IN A SATISFACTORY MANNER AND ON COMPLETION WAS TRIED UNDER FULL WORKING CONDITIONS AND FOUND SATISFACTORY. IN OUR OPINION IT IS ELIGIBLE FOR THE RECORD OF L.M.C 5.30 AND W.T.D.B 5.

It is submitted that this vessel is eligible for THE RECORD. + L.M.C 5.30 C-L.
O.P. Engines 2 S.C.S.A. 4 Cy. 23 5/8 — 91 5/16
N.H.P. 690 — 2 W.T.D.B — 200 1/2 & 217 1/2

The amount of Entry Fee \$30.00

Special \$570.00 (AS ARRANGED)

Donkey Boiler Fee —

Travelling Expenses (if any) 20.00

Committee's Minute 25 NEW YORK JUN 11 1930

Assigned + L.M.C. 5.30

Oil Engine
C-L

CERTIFICATE WRITTEN.

t. 9a.

rt of PHILADELPHIA.

Continuation of Report No. 6112 dated MAY 20th 1930 on the

M/V "WESTERN SUN"

AUXILIARY MACHINERY. TWO LUBRICATING OIL PUMPS, ROTARY, 150 GALS. P.M.

1- FUEL OIL TRANSFER, STEAM 6" X 5 3/4" X 6". TWO FUEL OIL SERVICE PUMPS, STEAM,

5 1/4" X 3 1/2" X 5". 1- BILGE PUMP, DUP. 7 1/2" X 8 1/2" X 10" STEAM. 1 SALT CIR. VOLUTE

PUMP 700 GALS. P.M. MOTOR-DRIVEN. 1- WATER SERVICE 7 1/2" X 8 1/2" X 10" STEAM.

2 MAIN CARGO PUMPS 18" X 14" X 24" STEAM. 1 PUMP ROOM BILGE PUMP 6" X 5 1/4" X 6" STEAM.

1- BILGE, ROTARY, 150 GALS. P.M. MOTOR-DRIVEN. 1 SAN. WASTE MACHINE PUMP 200 GALS.

P.M. CEN. MOTOR-DRIVEN. 1- FOR PUMP ROOM BILGE 7 1/2" X 8 1/2" X 10" STEAM. 1- SALT WATER

X BILGE CEN. 600 GALS. P.M. MOTOR-DRIVEN. 1- FUEL OIL TRANSFER PUMP 150 GALS. P.M.

MOTOR-DRIVEN. 2 BOILER FEED PUMPS 10" X 7" X 24" STEAM. 1 AUX. CONDENSER.

1- AUX. CONDENSER PUMP, DUP. 12 1/4" X 14" X 12" STEAM. 2 F.W. CIR. PUMPS, VOLUTE,

600 GALS. P.M. MOTOR-DRIVEN. 2- F.W. ROTARY PUMPS, 50 GALS. P.M. MOTOR-DRIVEN.

1- FUEL OIL PURIFIER PUMP, CEN. 100 GALS. P.M. MOTOR-DRIVEN.

2 MAIN CARGO PUMPS 10" X 6" TWO-STAGE, DOUBLE SUCTION BRONZE CEN. PUMPS DRIVEN BY

300 H.P. STEAM TURBINE. 2" TWO-STAGE TURB. DRIVEN CEN. CONDENSATE PUMP. 7 1/2" H.P.

1- 1500 SQ. FT. CONDENSER. AIR EJECTOR. 1 EVACUATOR. W. Buchanan & L. H. Housh

1- TURB. DRIVEN CIRCUL. PUMP 1600 G.P.M.

1- 6" X 5 1/4" X 6" DUP. PUMP ROOM BILGE PUMP.

2- STRIPPER PUMPS, VERT. SIMP 12" X 10" X 24"

Also generator engine



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