

Rpt. 4b

REPORT ON OIL ENGINE MACHINERY.

No. 4376
MUN. REG. 29 1922
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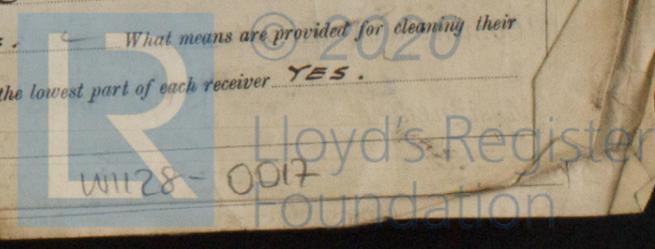
Received at London Office

Date of writing Report MAY 5th 1922. When handed in at Local Office MAY 5th 1922 Port of PHILADELPHIA, PA.
No. in Survey held at PHILADELPHIA, PA. Date, First Survey 6th Aug 1920 Last Survey MAY 4th 1922.
Reg. Book. Number of Visits 148.

on the Single Screw vessel "CALIFORNIAN" Tons Gross 7899
Twin Net 4915
Triple
Master WM. LYONS. Built at CHESTER, PA. By whom built MERCHANT S.B. YARD No. 385 When built 1922
Engines made at PHILADELPHIA By whom made THE WM. CRAMPYNSONS STEEL CO. Engine No. 496 When made 1922
Donkey Boilers made at Do. By whom made Do. Boiler No. 496 When made 1922
Brake Horse Power 2 @ 1750 = 3500 Owners AMERICAN-HAWAIIAN S.S. CO. Port belonging to NEW YORK
Nom. Horse Power as per Rule 856 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted YES

OIL ENGINES, &c.—Type of Engines VERTICAL DIESEL OIL ENGINES or 4 stroke cycle 4 Single or double acting SINGLE
Maximum pressure in cylinders 500 lbs. per sq. in. No. of cylinders 12 (6 port) No. of cranks 12 (6 port) Diameter of cylinders 29 1/8"
Length of stroke 45 1/4" Revolutions per minute 115 Means of ignition AIR COMPRESSION Kind of fuel used CRUDE OIL
(F.R. above 150°F)
Is there a bearing between each crank YES Span of bearings (Page 92, Section 2, par. 7 of Rules) 39 1/8"
Distance between centres of main bearings 59 1/8" Is a flywheel fitted YES Diameter of crank shaft journals as per Rule 17.4"
as fitted 18"
Diameter of crank pins 18" Breadth of crank webs as per Rule 23.14" Thickness of ditto as per Rule 9.74"
as fitted 39" as fitted 11 3/4"
Diameter of flywheel shaft as per Rule 17.4" Diameter of tunnel shaft as per Rule 13.5" Diameter of thrust shaft as per Rule 14.175"
as fitted 18" as fitted 14" as fitted 14 1/2"
Diameter of screw shaft as per Rule 14.4" Is the screw shaft fitted with a continuous liner the whole length of the stern tube NO
as fitted 15"
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 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 — If without liners, is the shaft arranged to run in oil —
Type of outer gland fitted to stern tube — Length of stern bush 66" Diameter of propeller 13'-6"
Pitch of propeller 11'-9" No. of blades 4 state whether moveable NO Total surface 59.35 square feet
Method of reversing DIRECT Is a governor or other arrangement fitted to prevent racing of the engine when declutched YES Thickness of cylinder liners 2.3"
Are the cylinders fitted with safety valves YES Means of lubrication FORCED LUBRICATION 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 siphoned back to the engine EXHAUST
LED UP FUNNEL ABOVE ENGINE CASING No. of cooling water pumps 3 SEA WATER - 1 FRESH WATER Is the sea suction provided with an efficient strainer which can be cleared
within the vessel YES No. of bilge pumps fitted to the main engines NONE Diameter of ditto — Stroke —
Can one be overhauled while the other is at work — No. of auxiliary pumps connected to the main bilge lines THREE How driven ELECTRO-MOTOR
Sizes of pumps TWO 3 PLUNGER, 8 IN. ONE ROTARY No. and sizes of suction connected to both main bilge pumps and auxiliary bilge pumps:—In engine room 5-3 1/2" 3-4"
and in holds, etc. FORD HOLD 8-3 1/2" AFTER HOLD 6-3 1/2" NO. OF BALLAST PUMPS ONE How driven ELECTRO-MOTOR Sizes of pumps ROTARY RING PUMP, 150 TONS
Is the ballast pump fitted with a direct suction from the engine room bilges YES State size 6" Is a separate auxiliary pump suction fitted in
Engine Room and size YES TWO 7" 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 NONE Are all connections with the sea direct on the skin of the ship YES
Are they valves or cocks VALVES Are they fixed sufficiently high on the ship's side to be seen without lifting the floor plates YES
Are the discharge pipes 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 all pipes, cocks, valves and pumps in connection with the machinery 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 Is the screw shaft tunnel watertight YES Is it fitted with a watertight door YES
worked from TOP PLATFORM If a wood vessel, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork
No. of main air compressors ONE EACH ENG. No. of stages THREE Diameters 29 1/2" 26 3/16" 7 3/8" Stroke 13 3/4" Driven by MAIN ENGINES
No. of auxiliary air compressors ONE No. of stages TWO Diameters 18 1/8" 15 1/16" Stroke 10 1/4" Driven by ELECTRO-MOTOR
No. of small auxiliary air compressors ONE No. of stages TWO Diameters 4 3/16" 1 5/16" Stroke 3 1/8" Driven by STEAM ENGINE DIRECT COUPLED
No. of scavenging air pumps NONE Diameter — Stroke — Driven by —
Diameter of auxiliary Diesel Engine crank shafts as per Rule — Are the air compressors and their coolers made so as to be easy of access YES
as fitted SEE NYK RPT.

AIR RECEIVERS:—No. of high pressure air receivers TWO Internal diameter 18" Cubic capacity of each 30700 CUB. INCHES
THREE FOUR 16" 2080 " "
FOUR 8" Range of tensile strength 26-30 TONS
material O.H. STEEL Seamless, lap welded or riveted longitudinal joint SEAMLESS
thickness 7/8" 3/4" 7/16" working pressure by Rules 90.7 ATM. 861 DLG No. of starting air receivers TWO Internal diameter 6'-0"
Total cubic capacity 1600 CUB. FT. Material O.H. STEEL Seamless, lap welded or riveted longitudinal joint RIVETED
Range of tensile strength 60,000 lbs. thickness 1 7/8" Working pressure by rules 358 lbs. 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 YES What means are provided for cleaning their
inner surfaces MANHOLES Is there a drain arrangement fitted at the lowest part of each receiver YES



IS A DONKEY BOILER FITTED? YES.

If so, is a report now forwarded? YES.

HYDRAULIC TESTS:—

DESCRIPTION.	DATE OF TEST.	WORKING PRESSURE.	TEST PRESSURE.	STAMPED.	REMARKS.
ENGINE CYLINDERS					
COVERS	15/9, 20/10, 31/10, 1/12 1921	15 lbs.	142 lbs.	L.R.	
JACKETS	30/9, 28/10, 4/11, 18/11 "	" "	" "	"	
PISTON WATER PASSAGES	4/10, 26/10, 23/11, 1/12 "	" "	" "	"	
MAIN COMPRESSORS—1st STAGE	WATER JACKET 6/10, 7/10 "	" "	" "	"	
2nd	6/10, 7/10 "	" "	" "	"	
3rd	AIR SPACE 1/12, 20/12 "	60 ATM.	90 ATM.	"	
AIR RECEIVERS—STARTING	6-9-21, 10-9-21	25 "	39 "		
INJECTION	21-7-21	65 "	130 "		
AIR PIPES		60 "	90 "	L.R.	
FUEL PIPES	from pumps to valves 28-4-22	75 "	150 "		
FUEL PUMPS	DELIVERY " 28-4-22	75 "	150 "		
SILENCER					
WATER JACKET	14/11, 26/11, 23/11, 9/12 1921.	15 lbs.	50 lbs.		
SEPARATE FUEL TANKS	30-11-21, 2-12-21		10 "		

PLANS. Are approved plans forwarded herewith for shafting HELD FOR SUTAR SHIP Receivers HELD FOR SUTAR SHIP Separate Tanks ✓

SPARE GEAR AS PER RULES, ALSO THE FOLLOWING ADDITIONAL SPARES. ONE TAIL SHAFT, ONE RIGHT AND ONE LEFT HAND PROPELLER, 25 TUBES FOR FRESH WATER COOLER, ONE MAIN ENGINE CYLINDER LINER, ALSO A NUMBER OF SPARES OF MISCELLANEOUS SMALL PARTS.

The foregoing is a correct description,
THE W.M. CRAMP & SONS SHIP & ENGINE BUILDING CO.

John F. Miller
Chief Engineer.

Manufacturer.

Dates of Survey while building	During progress of work in shops--	1920. AUG. 6, SEP. 9, 16, 23, 29, OCT. 6, 13, 31, 29, NOV. 3, 12, 24, DEC. 3, 15, 21, 27. 1921. JAN. 13, 21, FEB. 2, 8, 15, 22.
	During erection on board vessel--	MAR. 7, 10, 22, APR. 5, 13, 21, 25, MAY 9, 10, 20, 26, JUNE 4, 14, 23, 30, JULY 19, 20, 23, 27, 28, AUG. 2, 3, 10, 13, 15, 20, 22, 26, 30, SEP. 1, 6, 7, 8, 10, 12, 15, 17, 19, 24, 29, 30, OCT. 3, 6, 11, 13, 15, 18, 19, 20, 23, 26, 27, 29, 31, NOV. 1, 3, 4, 5, 8, 9, 14, 15, 16, 17, 18, 24, 25, 27.
	Total No. of visits	148.

Dates of Examination of principal parts—Cylinders 26-8-21 Covers 23-11-21 Pistons 1-12-21 Rods 23-6-21 Connecting rods 23-6-21 Crank shaft 12-5-21 Thrust shaft 14-4-20 Tunnel shafts 21-1-21 Screw shaft 10-5-21 Propeller 10-11-21 Stern tube 20-10-21 Engine sealings 11-11-21 Engines holding down bolts 13-2-22, 1-3-22 Completion of pumping arrangements 10-4-22 Engines tried under working conditions 26-4-22 TRIAL TRIP MAY 16. Completion of fitting sea connections 13-12-21 Stern tubes 8-11-21, 30-11-21 Screw shaft and propeller 10-11-21, 13-12-21 Material of crank shaft O.H. STEEL Identification Mark on Do. 3334 R.S. Material of thrust shaft O.H. STEEL Identification Mark on Do. 3349 R.S. Material of tunnel shafts O.H. STEEL Identification Marks on Do. 3353 R.S. 3357 R.S. Material of screw shafts O.H. STEEL Identification Marks on Do. 3672 R.S. Is the flash point of the oil to be used over 150° F. YES.

Is this machinery duplicate of a previous case YES. If so, state name of vessel "WILLIAM PENN"

General Remarks (State quality of workmanship, opinions as to class, &c.)
THE MACHINERY HAS BEEN BUILT UNDER SPECIAL SURVEY, THE MATERIALS AND WORKMANSHIP ARE OF GOOD DESCRIPTION, HYDRAULIC TESTS SATISFACTORY, THE MAIN ENGINES, AUXILIARY MACHINERY AND MOTORS HAVE BEEN SECURED ON BOARD IN A SATISFACTORY MANNER. THE MACHINERY WAS TRIED UNDER FULL WORKING CONDITIONS ON A TWO DAYS TRIAL TRIP, AND WAS FOUND IN GOOD AND SAFE WORKING CONDITION. THE MACHINERY IS ELIGIBLE, IN OUR OPINION, TO BE CLASSED AND TO HAVE RECORD LMC 5-22, FITTED FOR OIL FUEL, F.P. ABOVE 150° F 5-22 IN THE REGISTER BOOK.

The amount of Entry Fee	\$ 30.00	When applied for,
Special	\$ 589.00	May 16 1922
Donkey Boiler Fee	\$ 25.00	When received,
Travelling Expenses (if any)	\$ 20.00	20/5/22

Committee's Minute Tues. 16 May 1922

Assigned MACHINERY LMC-5-22 subject WRITER 29.5.22 + DO-5.22 150lbs issued 24.6.22

Engineers Surveyors to Lloyd's Register of Shipping
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