

REPORT ON OIL ENGINE MACHINERY.

No. 5222
17 MAY 1928

Received at London Office

Date of writing Report APR. 15th 1926 When handed in at Local Office APR. 15th 1926 Port of PHILADELPHIA

No. in Survey held at CAMDEN, N. J. Date, First Survey JAN. 6th 1925 Last Survey APR. 15th 1926. Number of Visits 34.

on the ^{Single} _{Twin} _{Triple} Screw vessels "GULFCREST" Tons { Gross 8952, Net 5578.

Master — Built at CAMDEN, N. J. By whom built AMER. BROWN BOVERI ELECT. CORP. Yard No. 304 When built 1926.

Engines made at CAMDEN, N. J. By whom made DO. PORT ENG No 3 STBD. Engine No. 4 When made 1926.

Donkey Boilers made at DO. By whom made DO. Boiler No. — When made 1926.

Brake Horse Power 3000 Owners GULF REFINING CO. Port belonging to PORT ARTUR, TEXAS.

Nom. Horse Power as per Rule 845. Is Refrigerating Machinery fitted for cargo purposes NO. Is Electric Light fitted YES.

OIL ENGINES, &c.—Type of Engines VERTICAL OIL ENGINES 2 or 4 stroke cycle 4 Single or double acting SINGLE

Maximum pressure in cylinders 500 lbs. No. of cylinders 12 No. of cranks 12 Diameter of cylinders 27" Length of stroke 47" Revolutions per minute 110 Means of ignition COMPRESSED AIR Kind of fuel used OIL FUEL

Is there a bearing between each crank YES. Span of bearings (Page 92, Section 2, par. 7 of Rules) 38 3/8" Distance between centres of main bearings 58" Is a flywheel fitted YES. Diameter of crank shaft journals as per Rule 16.65" as fitted 17"

Diameter of crank pins 17" Breadth of crank webs as per Rule 22.61" as fitted 35" Thickness of ditto as per Rule 9.52" as fitted 11.5"

Diameter of flywheel shaft as per Rule 11.368" as fitted 17" Diameter of tunnel shaft as per Rule 11.368" as fitted 12" Diameter of thrust shaft as per Rule 11.936" as fitted 13 1/2"

Diameter of screw shaft as per Rule 13.28" as fitted 14" Is the screw shaft fitted with a continuous liner the whole length of the stern tube YES. If 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 —

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 — If without liners, is the shaft arranged to run in oil —

Type of outer gland fitted to stern tube NONE Length of stern bush 4.8" Diameter of propeller 14'-0" Pitch of propeller 11-3" No. of blades 4 state whether moveable YES. Total surface 63.936 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 29/16" Are the cylinders fitted with safety valves YES. Means of lubrication FORCED. Are the exhaust pipes and silencers water cooled or lagged with non-conducting material LAGGED. If the exhaust is led overboard near the waterline, what means are arranged to prevent water from being syphoned back to the engine EXHAUST LED UP FUNNEL

No. of cooling water pumps THREE 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 1-STEAM 2-MOTOR. Sizes of pumps 1-6"x5 3/4"x6" H.D. and sizes of suction connected to both main bilge pumps and auxiliary bilge pumps:—In engine room 1-6" DIRECT 2-3 1/2" and in holds, etc. 1-3" DRY TANK AFT. No. of ballast pumps 4 How driven STEAM DRIVEN Sizes of pumps 16"x14"x18" DUP.

Is the ballast pump fitted with a direct suction from the engine room bilges NO. State size — Is a separate auxiliary pump suction fitted in Engine Room and size YES. 6" 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 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 —

No. of main air compressors TWO No. of stages THREE Diameters 5 1/2" 20 1/2" 23 1/4" Stroke 20" Driven by MAIN ENGINES

No. of auxiliary air compressors ONE No. of stages THREE Diameters 13 1/2" x 4 1/4" Stroke 8" Driven by STEAM

No. of small auxiliary air compressors ONE No. of stages TWO Diameters 4 1/2" 1 1/2" Stroke 5" Driven by STEAM

No. of scavenging air pumps NONE Diameter — Stroke — Driven by —

Diameter of auxiliary Diesel Engine crank shafts as per Rule — as fitted — Are the air compressors and their coolers made so as to be easy of access YES.

IR RECEIVERS:—No of high pressure air receivers FOUR Internal diameter 14" Cubic capacity of each 7.81 CUB. FT.

material FORGED STEEL Seamless, lap welded or riveted longitudinal joint SEAMLESS. Range of tensile strength Thickness 9/16" working pressure by Rules No. of starting air receivers TWO Internal diameter 6'-5 3/16"

Total cubic capacity 1506 CUB. FT. Material STEEL Seamless, lap welded or riveted longitudinal joint RIVETED. Range of tensile strength 28-32 TONS thickness 1 3/32" Working pressure by rules 361 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	9-9-25	500 lbs.	700 lbs.	L.R.	
" " COVERS (JACKETS)	5-10-25	20 "	60 "	L.R.	
" " JACKETS.....	5-10-25	20 "	60 "	L.R.	
" " PISTON WATER PASSAGES.....	24-8-25	20 "	60 "	L.R.	
MAIN COMPRESSORS—1st STAGE...L.P.	30-4-25	60 "	100 "	L.R.	
" 2nd " ..I.P.	30-4-25	250 "	415 "	L.R.	
" 3rd " ..H.P.	30-4-25	1000 "	1660 "	L.R.	
AIR RECEIVERS—STARTING	6-8-25	350 "	550 "	E.I.E.	
" INJECTION		1000 "	3000 "		
AIR PIPES	16-2-26	125-250 "	250-700 "	L.R.	
FUEL PIPES	3-2-26	1000 "	2000 "	L.R.	
FUEL PUMPS	26-1-26	600 "	1200 "	L.R.	
SILENCER	—	—	—	—	
" WATER JACKET	—	15 "	20 "	—	
SEPARATE FUEL TANKS	—	—	5 "	—	

PLANS. Are approved plans forwarded herewith for shafting (If not, state date of approval)

YES.

Receivers **YES.**

Separate Tanks —

SPARE GEAR ONE CYLINDER COVER COMPLETE WITH VALVES, SEATS, SPRINGS ETC. ONE COMPLETE SET VALVES, SEATS, SPRINGS ETC. FOR MAIN & AUX. ENGINES & FUEL NEEDLE VALVES FOR 6 CYLS. ONE MAIN PISTON & 2 SETS RINGS, ONE SET RINGS FOR AUX. ENG. 2 TOP END, 2 BOT. END BOLTS & NUTS FOR MAIN & AUX. ENGS. 2 MAIN BEARING BOLTS & NUTS FOR MAIN & AUX. ENGS. 8 CRANK SHAFT & 6 LINE SHAFT COUP. BOLTS & NUTS. COMPRESSOR—8 H.P. PISTON RINGS. 6 I.P. & 4 L.P. SET VALVES ETC. FOR MAIN & AUX. COMPRESSORS. COMPLETE SET PARTS FOR FUEL PUMP. MAIN & AUX. VALVES ETC. FOR DAILY FUEL, OIL & WATER CIRCULATING, AND BILGE PUMPS. LARGE QUANTITY OF PIPES

The foregoing is a correct description. OF VARIOUS SIZES, BOLTS, NUTS, ETC.

American Brown Boveri Electrical Corp. *J. G. ...* Manufacturer.

Dates of Survey while building

During progress of work in shops--	1925	JAN. 6, 17, 26	FEB. 13,	MAR. 20,	APR. 2, 7, 18,	MAY 2, 14, 26,	JUN. 17,	JUL. 31,	AUG. 8, 19, 24,
		SEP. 9, 26,	OCT. 5, 8, 17,	NOV. 6, 27,	DEC. 2, 14,				
During erection on board vessel--		DEC. 15,	1926,	JAN. 26,	FEB. 3, 16,	MAR. 2, 4, 24,	APR. 9, 15,		
Total No. of visits		34.							

Dates of Examination of principal parts—Cylinders 15-6-25 Covers 19-8-25 Pistons 24-8-25 Rods 24-8-25 Connecting rods 15-6-25

Crank shaft 14-6-25 Thrust shaft 26-9-25 Turret shafts 26-9-25 Screw shafts 9-9-25 Propellers 9-9-25 Stern tube 25-11-25 Engine seatings 5-10-25

Engines holding down bolts 3-2-26 Completion of pumping arrangements 29-3-26 Engines tried under working conditions 9-4-26

Completion of fitting sea connections 2-12-25 Stern tubes 2-12-25 Screw shafts and propellers 2-12-25

Material of crank shafts **STEEL** Identification Mark on Do. 648 D.M. Material of thrust shaft **STEEL** Identification Mark on Do. 651 D.M.

Material of turret shafts **STEEL** Identification Marks on Do. 651 D.M. Material of screw shafts **STEEL** Identification Marks on Do. 651 D.M.

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

Is this machinery duplicate of a previous case **NO.** If so, state name of vessel —

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

THE ENGINES HAVE BEEN BUILT UNDER SPECIAL SURVEY, THE MATERIALS AND WORKMANSHIP ARE OF GOOD DESCRIPTION, HYDRAULIC TESTS SATISFACTORY, THEY HAVE BEEN FITTED ON BOARD IN A SATISFACTORY MANNER, AND ON COMPLETION WERE TRIED UNDER FULL WORKING CONDITIONS AND FOUND TO WORK SATISFACTORYLY. IN MY OPINION THE MACHINERY IS ELIGIBLE FOR THE RECORD **LMC 4.26**

The amount of Entry Fee ... \$ 30.00

Special ... \$ 586.25

Donkey Boiler Fee ... SEE D.B. Ppt.

Travelling Expenses (if any) \$ 10.00

TWO AIR RECEIVERS \$ 50.00

Committee's Minute NEW YORK MAY 5 1926

When applied for,

28th April 1926

When received,

24-5-26

J. G. ...
Engineer Surveyor to Lloyd's Register of Shipping.

Assigned + LMC. 4.26

CERTIFICATE WRITTEN



Certificate (if required) to be sent to PHILADELPHIA OFFICE

(The Surveyors are requested not to write on or below the space for Committee's Minute.)