

INVOICE

TELEPHONE: YUKON 1-2800

Aug. 12 19 63

M Humble Oil & Refining Co., Marine Division

P.O. Box 1512, Houston 1, Texas

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O'BRIEN BROTHERS SHIPYARD CORPORATION

200 EDGEWATER STREET

STATEN ISLAND 5. N. Y.

Our Invoice # 362
Our O.B. Job # 10486

S/S "ESSO GETTYSBURG"

THROTTLE VALVE (303)

Furnish labor and material to remove bonnet, valve and stem from the body of Main Turbine ahead throttle valve. Remove stem and disc from valve cage, clean cage and made free in the way of the above valve disc. Made new klingirite gasket, replace valve and bonnet in the valve body and replace all removals. Test out valve and prove in satisfactory operating order.

All above work completed as specified in overtime while vessel lay at Bayway, N.J.

TOTAL SUM..... \$572.00

Started 7/30/63
Completed 7/31/63

APPROVED

DE LAVAL TURBINE INC.

TRENTON 2, NEW JERSEY, U. S. A.

DATE 6-10-63

SUBJECT SS LSSO GETTYSBURG

LOCAL ADDRESS Hampton Manor Motel
Hampton, Va.

ASSIGNMENT LOCATION N.N.S. & D.D. Co.

MACHINE NO. 651602

TYPE UNIT Turbo Gen.

PLANT PHONE CH 7-1211

COPIES TO: Mr. S. English - Esso Div. Humble Oil, Houston, Texas ✓

FIELD SERVICE ENGINEER Sutherland

COPIES TO: Mr. F.W. Beltz

NATURE OF ASSIGNMENT: Repair of casualty damage

5-30-63 - Holiday observed.

5-31-63 - Tightened up horizontal joint of turbine. Installed new lifting spindles in control valves lifting gear and returned gear to vessel. Checked turbine thrust and left as follows:- Total float .118, off nozzle .048, clearance .007.

6-1-63 - Installed control valves in turbine and adjusted same for .100 lift. Installed governor governor kit supplied by vessel.

6-2-63 - Started unit idling at 1:30 PM, operation smooth and quiet with no load, all temperatures and pressures normal. Unit left idling throughout night at 1200 RPM excitation load only.

6-3-63 - Tested overspeed trip of unit and found trip OK. Trip operates at 1330 RPM. Unit put on line and gears noted as being very noisy under load, all other operation of unit satisfactory, operation smooth and control good. Unit left on line overnight.

6-4-63 - Unit operated throughout night under load and found satisfactory except for gear rattles. Secured unit and rechecked bearings and thrust and found as left. Checked gear and pinion thoroughly and found nothing that should cause noise, contact is very good, no excessively heavy markings found. Rechecked governor and oil pump and found OK. Writer feels that some teeth of gear and pinion have been bent at time of casualty. Recommended that gear and pinion be sent to Trenton for refishing. This is not feasible at this time due to lack of time. One slight mark was noted on gear at time of examination indicating possible crack, this area was dye-checked and found OK.

Unit was passed by U.S.C.G. on this date. Testing overspeed trips and controls.

UNIT #651601 - Test overspeed tripping controls.

6-3-63 - Overspeed trip was tested on this date and failed to operate within required limitations, top speed 1380 RPM.

6-4-63 - Opened overspeed plunger mechanism and found a thin washer had been installed to locate adjusting nut; this washer had fallen in between spring spirals and increased spring tension of plunger. Removed washer and reset plunger to operate at 1340 RPM. Unit passed by U.S.C.G. this date.

G.P. SUTHERLAND

Parts from Ref. Unit # 651632
S.S. Bettysburg, being repaired at Mayport Naval Yard

Parts taken from unit 651639.

- 1 turbine rotor complete - (less coupling).
- 1 GJ-52BZ $\frac{1}{2}$ diaphragm comp. Stage # 7.
- 6 rotor interstage packing for each diaphragm, parts # 45, # 46, # 47, 48, 49, with springs. DWG - F5393
- 1 GJ-385 Bearing pedestal. Part # 42
- 1 GJ-386 Bearing cap. Part # 30.
- 1 Kingsbury thrust assembly, complete, Parts # 25, # 26, # 27, # 28, # 29, and # 40 (2)
- 1 Emergency governor trip complete, parts # 31, # 32, # 33, # 34, # 35, # 36, # 37, # 38, # 39
- 1 Cover plate & thrust gage complete. parts # 33, # 34, # 35, # 36, # 40
- 2 Oil guards part # 5
- 3 GJ-141 labyrinths rings Part # 24
- 2 GJ-141 D. labyrinths rings Part # 9.
- 5 ~~HD-396~~ HD 395 HM $\frac{1}{2}$, Part # 1.
- 1 KD-396 $\frac{1}{2}$ Bearing bushing. Part # 3
- 1 KD-38 P. Bearing cap. Part # 4.
- 3 GJ-141 X $\frac{1}{2}$ labyrinths rings. Part # 11
- 1 Hydraulic trip complete DWG E-53994-1
Part Numbers from DWG F-2393

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O'BRIEN BROTHERS SHIPYARD CORPORATION

200 EDGEWATER STREET

STATEN ISLAND 5, N. Y.

Our Invoice # 363
Our O.B. Job# 10490

S/S "ESSO GETTYSBURG"

FOAM TANK (103)

Furnish labor and material and supply twenty-five (25) clean drums to vessel, pump foam from tank into barrels.

Install six (6) shaped doubler plates approximately 18" x 12" x 3/8" each by cropping saddles and inserting shaped doublers between saddles and bottom of tank. Weld doublers to tank and saddles to doublers. On completion replace part of foam into tank and prove same tight to satisfaction of Chief Engineer. Pump in remainder of foam from barrels into tank and close up in good order. Remove all barrels, pump, hose etc., from vessel and clean up all debris from vessel.

..... \$1512.00

ANCHOR WINDLASS (103)

Furnish labor and material to bend out cold two (2) 2" dia. counterweight bars for anchor chain pawl to clear anchor chains as directed.

..... 175.00

GAS FREE CERTIFICATE (133)

Furnish services of certified chemist to issue gas free certificate for area of welding on foam tank.

..... 75.00

All above work completed as specified in overtime while vessel lay in stream off Stapleton, S.I. and at Bayway, N.J.

TOTAL SUM..... \$1762.00

Started 8/5/63
Completed 8/6/63

APPROVED