

G.E.C. TYPE T2. TANKER TAKE EXTRA COPY

Rpt. 4d. No. 104937
REPORT ON ELECTRIC PROPELLING MACHINERY

Date of writing Report 24th NOVEMBER 1947. When handed in at Local Office 26 NOV 1947. Received at London Office 19 DEC 1947
Port of NEWCASTLE-ON-TYNE. No. in Survey held at WALLSEND-ON-TYNE. Date, First Survey 24th OCTOBER 1947. Last Survey 17th NOVEMBER 1947. No. of Visits EIGHT

Single on Twin Triple Quadruple Screw vessel "Esso LONDON." Tons Gross 10712. Net 6301.
Built at CHESTER Pa. By whom built SUN S.B. & DRY DOCK CO. LTD. Yard No. - When built 1944.
Electrical Machines made at SCHENECTADY, N.Y. By whom made GENERAL ELECTRIC CO. Generator Nos. 5840740. Motor Nos. 6034846. When made 1944.
Shaft Horse Power at Full Power 6000 H.P. AT 90 R.P.M. and 6000 H.P. AT 93 R.P.M. Total Capacity of Generators 5400 Kilowatts.
Machinery Numeral as per Rule - Owners ANGLO-AMERICAN OIL CO LTD. Port belonging to LONDON.
Trade for which Vessel is intended CARRYING PETROLEUM IN BULK.

PLANS.— Have plans of the Machines, Control Gear, Cables and Circuits been submitted and approved. No

STEAM ENGINES.— Type of Engine STEAM TURBINE. No. of Engines ONE. R.P.M. 3600/3715. Is a Governor fitted YES. Is the speed variation as per Rule when load is thrown off YES. Is an Emergency Governor fitted YES. Is it arranged for hand tripping YES. Does it trip the throttle valve YES. If exhaust steam is admitted, is an automatic shut-off fitted - Is provision made for bled steam - and is a non-return or positive shut-off valve fitted - Lubricating Oil.— State means provided for emergency supply STEAM STANDBY LUB. OIL PUMP AND GRAVITY TANK. Is the emergency reserve sufficient to maintain lubrication as per Rule YES. Mechanical Balance.— Are the Engines and Generators balanced so as not to cause appreciable vibration YES.

OIL ENGINES.— Type of Engines - R.P.M. - Is a Governor fitted - Is the speed variation as per Rule when load is thrown off - Is an Emergency Governor fitted - Does it operate as per Rule -

GENERATORS.— Direct or Alternating Current A.C. No. of Generators ONE. If A.C. state frequency at full load 60/62 CYCLES. Kw. per Generator 5400. Volts per Generator 2300/2370. Amps. per Generator 1237/1315. Have certificates of works tests been supplied No and the results found as per Rule - Ventilation.— State how arranged (open or closed system) CLOSED SYSTEM. Are ventilating arrangements satisfactory YES. Heating when Idle.— What provision is made RESISTANCE ENCLOSED. HEATERS. Facilities for Inspection and Repair.— Are these as per Rule YES. Are wear-down gauges supplied YES. Bilges.— Are the arrangements to prevent accumulation of bilge-water under the machines satisfactory YES.

MOTORS.— S.H.P. per Motor at full power 6000. No. of Motors ONE. Single or double unit SINGLE. Volts per Motor 2300. Amps. per Motor 1150. Have certificates of works tests been supplied No and the results found as per Rule - A.C. Motors.— Is provision made for machining the slip rings - Do the Motors remain in synchronism under all normal conditions of running YES. D.C. Motors.— If the system permits overspeeding at light loads are overspeed protection devices fitted -

EXCITATION.— Is power for excitation taken from the ship's Auxiliary Generators YES. If so, state voltage 120 and excitation amperes at full power 692 kilowatts for excitation 45. State excitation arrangements for Propulsion Generators EXCITER WITH ANALOGUE CONTROL DRIVEN BY AUXILIARY ALTERNATOR TURBINE ALTERNATIVELY MANUAL CONTROL OF EXCITATION. and Propelling Motors SAME AS ALTERNATOR. Is an alternative means of excitation provided YES. Have certificates of works tests been supplied No and found as per Rule -

CONTROL.— Position of Main Control Panel FORWARD END OF CONTROL PLATFORM. Does it comply with the requirements regarding position YES, grouping of controls YES, instruments YES, insulating materials (state type used) FLAT FRONTED BOARD, spacing and shielding of live parts YES, accessibility YES, position of fuses YES, locking of screws and nuts YES, labelling YES, fuses for voltmeters, pilot lamps, etc. YES, provision for manual operation of contractors, etc. (state method employed) MECHANICALLY OPERATED BY LEVER AND CAMS. earthing of instrument cases above 250 volts to earth YES, provision of renewable tips on switches subject to arcing YES, capability of withstanding shock and inclination YES, operation with high and low voltage YES, rust proofing of parts YES. Overload and Short Circuit Protection.— State means provided OVERLOAD CURRENT COILS, WHICH TRIP EXCITATION.

At what load is it set to operate 150% FULL LOAD. Has it been tripped by hand when running at full power and found satisfactory YES. Are fuses of an approved type AMERICAN PATTERN.

Earth Detection.— Is the main circuit provided with means for detecting earths YES. Are aural and visual alarms fitted YES. Is main power interrupted by an earth fault YES. If a limiting resistance is in the earth detecting circuit what is the ohmic value CURRENT TRANSFORMER. What earth leakage current is necessary to operate the device - If a switch is used to disconnect the aural signal does it automatically give visual indication YES. Are the excitation circuits provided with means for earth detection YES. Mechanical Protection.— Are circuits above 250 volts to earth protected as per Rule YES.

Bridge or Deck Control.— Is bridge control provided No. If so, from how many stations - can it be operated freely without producing currents or loads in excess of the working capacity of the plant - and without reference to electrical instruments - Is an emergency control provided in the engine room - and can the transfer to this control be made quickly in the engine room - Can the emergency control be rendered mechanically independent of the deck control - Instruments and Gauges.— State Instruments provided for each Generator ONE A.C. VOLTS - ONE A.C. AMPS - HORSE POWER INDICATING METER - ONE KW. HOUR METER - ONE FIELD D.C. VOLTS - ONE FIELD D.C. AMPS. and for each Motor ONE FIELD D.C. VOLTS - ONE FIELD D.C. AMPS. Is an Insulation Tester provided YES.

Discharge Protection.— Are all shunt field circuits protected as per Rule YES. D.C. Systems.— If the Generators are connected in series state means provided to prevent reversal of direction of rotation of the Prime Movers - Are the Propulsion Generators also used alternatively for other purposes YES. If so, is provision made for overload protection, voltage adjustment, etc. YES.

2c.10.46. No TOOLS SUPPLIED. SEVEN TAPPINGS ON TRANSFORMER. VALUES 0.5, 0.6, 0.8, 1.0, 1.5, 2.0 AND 2.5 AMPS.

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Reversing Switches.—If any are provided are they interlocked as per Rule . Resistances.—Are resistances for synchronous motor fields insulated as per Rule . Temperature Alarm.—Are machines with enclosed ventilating system, etc., fitted with temperature alarm. . **CONDUCTORS & CABLES.**—Are all essential Conductors stranded as per Rule . Are the ends of Paper and Varnished Cambric Insulated Cables sealed . Are all Cables carrying A.C. constructed and installed as per Rule . Have all Cables been tested at the makers' works. . **SECONDARY BATTERIES.**—Are Batteries used for starting Main Propulsion Engines. . If so, have full particulars of rating been submitted and approved. . Have they been tested under working conditions and do they give the required number of starts. . Are they installed as per Rule . Are the charging arrangements satisfactory. . **SPARE GEAR.**—If engaged on open sea service has a list of spare gear been submitted and approved. . Is a list of the articles supplied attached to this report. . Are they stored as per Rule . **SPARE GEAR LIST APPROVED BY AMERICAN BUREAU.**

ELECTRIC PROPULSION EQUIPMENT CONDUCTORS.

DESCRIPTION	CONDUCTORS.		TOTAL MAXIMUM CURRENT—AMPERES.*		A.I.E.E. RATING.	MAXIMUM VOLTAGE TO EARTH.	INSULATED WITH.	DI-ELECTRIC THICKNESS.	HOW PROTECTED.
	No. per Pole.	Nominal Area per Pole.	In Circuit.						
			When Running.	When Manoeuvring.					
MAIN GENERATORS 5400 KWS.	2	2 x 1.1781	1500 ✓	-	2 x 890	2300.	V.C.	0.156	ARMoured & BRAIDED.
GENERATOR FIELDS	1	.392	300 ✓	-	444.	600.	V.C.	0.094.	" " "
MAIN MOTORS 6000 HP.	2	2 x 1.1781	1500 ✓	-	2 x 890	2300	V.C.	0.156	" " "
MOTOR FIELDS	1	.392	400	-	444	600	V.C.	0.094	" " "
CONTROL CIRCUITS									
OTHER CIRCUITS:—									

*For field circuits the "Hot" and "Cold" value should be given.

The foregoing is a correct description,

Electrical Engineers.

Date

COMPASSES.—Are Single-Conductor circuits carrying direct current arranged with lead and return Conductors fitted as close to one another as possible

Have tests been made during adjustment of the Compasses to determine the effect of switching the main circuits on and off.

Builders' Signature.

Date

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 ELECTRICAL INSTALLATION TO THE STANDARDS OF THE AMERICAN BUREAU

OF SHIPPING HAS BEEN IN OPERATION FOR APPROXIMATELY THREE YEARS. THE PROPULSION ALTERNATOR, CONTROL GEAR AND MOTOR WERE OPENED UP FOR INSPECTION AND FOUND TO BE IN GOOD ORDER. THE ALTERNATOR ROTOR WAS CLEANED IN WAY OF THE SLIPRINGS AND SHAFT WHERE A DEPOSIT OF CARBON AND OIL HAD COLLECTED. THE MOTOR ROTOR COILS WERE CLEANED AND RE-INSULATED. ON COMPLETION OF CLEANING THE INSULATION RESIDUE WAS TAKEN AND ALL FOUND TO BE SATISFACTORY.

THE MATERIALS USED AND THE WORKMANSHIP ARE SATISFACTORY.

IN MY OPINION THE ELECTRICAL PROPULSION EQUIPMENT OF THIS SHIP, IS IN A SATISFACTORY CONDITION, AND ELIGIBLE TO RECEIVE THE SOCIETY'S CLASSIFICATION OF L.M.C. (WITH DATE) WHEN THE SURVEY OF THE MACHINERY HAS BEEN COMPLETED.

Notes see 14/1/48

The amount of Entry Fee ... £ : : When applied for, 19
 Travelling Expenses (if any) £ : : When received, 19

R. Stone

Surveyor to Lloyd's Register of Shipping.

Date TUES. 20 JAN 1948

Committee's Minute

See Rpt. 9



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