

# REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

22 FEB 1950

Date of writing Report 14/2 1950 When handed in at Local Office 15/2 1950 Port of Amsterdam

No. in Survey held at Amsterdam Date, First Survey 12-1-50 Last Survey 15-1-50 1950  
Reg. Book. (Number of Visits.....)

10848 on the Tanker "Gladys Moller" Tons { Gross 10712  
Net 6408

Built at Chester Pa By whom built San L. B. & Ryd Co Yard No. 476 When built 1945

Owners Moller Line Ltd Port belonging to London

Electrical Installation fitted by Premmed by Builders Contract No. \_\_\_\_\_ When fitted 1945

Is vessel fitted for carrying Petroleum in bulk yes Is vessel equipped with D.F. yes E.S.D. yes Gy.C. yes Sub.Sig. no

Have plans been submitted and approved yes (typical plans of 12 tankers for 2.8 P 3-phase 3-wire (a.c.)  
System of Distribution For special service 2-wire (a.c.) Voltage of supply for Lighting 110  
Heating galley 220 Power 440 Direct or Alternating Current, Lighting A.C. Power A.C. If Alternating Current state periodicity 60 Prime Movers, \_\_\_\_\_

has the governing been tested and found as per Rule when full load is suddenly thrown on and off yes Are turbine emergency governors fitted with a trip switch as per Rule yes D.C. Generators, are they compound wound \_\_\_\_\_, are they level compounded under working conditions yes, if not compound wound state distance between generators \_\_\_\_\_ and from switchboard \_\_\_\_\_ Where more than one generator is fitted are they arranged to run in parallel no, are shunt field regulators provided yes Is the compound winding connected to the negative or positive pole negative Have machines over 100 kw. been inspected by the Surveyors during manufacture and testing no Have certificates of test for machines under 100 kw. been supplied no and the results found as per rule \_\_\_\_\_ Are the lubricating arrangements and the construction of the generators as per rule yes Position of Generators E.R. Starting Platform \_\_\_\_\_, is the ventilation in way of generators satisfactory yes are they clear of inflammable material yes, if situated near unprotected combustible material state distance from same horizontally \_\_\_\_\_ and vertically \_\_\_\_\_, are the generators protected from mechanical injury and damage from water, steam and oil yes, are the bedplates and frames earthed yes and the prime movers and generators in metallic contact yes Switchboards, where are main switchboards placed E.R. Starting Platform against forward bulkhead \_\_\_\_\_ are they in accessible positions, free from inflammable gases and acid fumes yes, are they protected from mechanical injury and damage from water, steam and oil yes, if situated near unprotected combustible material state distance from same horizontally \_\_\_\_\_ and vertically \_\_\_\_\_, what insulation material is used for the panels dead front switchboard Insulation material appears to be American long asbestos type \_\_\_\_\_, if of synthetic insulating material is it an Approved Type \_\_\_\_\_, if of semi-insulating material (slate or marble) are all conducting parts insulated therefrom as per Rule \_\_\_\_\_ Is the frame effectually earthed yes Is the construction as per Rule yes, including accessibility of parts yes absence of fuses on the back of the board yes except inherent fuses \_\_\_\_\_, individual fuses to pilot and earth lamps, voltmeters, etc., yes locking of screws and nuts yes labelling of apparatus and fuses yes fuses on the "dead" side of switches yes Description of Main Switchgear for each generator and arrangement of equaliser switches Triple pole circuit breaker for A.C. generator D.P. circuit breaker for D.C. generator \_\_\_\_\_ and for each outgoing circuit Triple pole & Double pole circuit breakers

Are compartments containing switchboards composed of fire-resisting material or lined as per Rule yes Instruments on main switchboard 14  
ammeters 5 voltmeters 1 synchronising devices. For compound machines in parallel is the ammeter connected on the pole opposite to the equaliser connection \_\_\_\_\_ Earth Testing, state means provided Earth indicating lamps on D.C. & A.C. systems  
Switches, Circuit Breakers and Fuses, are they as per Rule American type \_\_\_\_\_, are the fuses an approved type American standard type \_\_\_\_\_, are all fuses labelled as per Rule yes If circuit breakers are provided for the generators, at what overload current did they open when tested not tested are the reversed current protection devices connected on the pole opposite to the equaliser connection \_\_\_\_\_, have they been tested under working conditions, and at what current did they operate \_\_\_\_\_ Joint Boxes, Section Boards and Distribution Boards, is the construction and position as per Rule all American type  
Cables, are they insulated and protected as per the appropriate Tables of the Rules American Standard cables \_\_\_\_\_, if otherwise than as per Rule are they of an approved type yes state maximum fall of pressure between bus bars and any point under maximum load \_\_\_\_\_, are the ends of all cables having a sectional area of 0.04 square inch and above provided with soldering sockets mechanical clamps \_\_\_\_\_ Are paper insulated and varnished cambric insulated cables sealed at the ends yes



with insulating compound or waterproof insulating tape yes. Are all the cable runs in accessible positions, not exposed to drip or accumulation of water or oil, high temperatures or risk of mechanical damage yes, are cables laid under machines or floorplates yes, if so, are they adequately protected yes. Are cables in machinery spaces, galleys, laundries, etc., lead covered yes or run in conduit conduit. State how the cables are supported and protected all cables h. l. & - on deck installed under gangway in conduit; in machinery spaces clipped to saddles or direct to structure; in accommodation etc. clipped to saddles or direct to structure.

Are all lead sheaths, armouring and conduits effectually bonded and earthed yes. Refrigerated chambers, are the cables and fittings as per Rule —. Are all cables passing through decks and watertight bulkheads provided with deck tubes or watertight glands yes, where unarmoured cables pass through beams, etc., are the holes effectively bushed — and with what material —. Alternative Lighting, are the groups of lights in the engine and boiler rooms arranged as per Rule yes. Emergency Supply, state position Emergency generator and main board at top of E.R. and method of control generator starts automatically on failure of main supply. Navigation Lamps, are they separately wired yes controlled by separate double pole switches yes and fuses yes. Are the switches and fuses in a position accessible only to the officers on watch yes, is an automatic indicator fitted yes. Secondary Batteries, are they constructed and fitted as per Rule yes, are they adequately ventilated yes what is the battery capacity in ampere hours approx. 200 amp. hours.

Fittings, are all fittings on weather decks, in stokeholds and engine rooms and wherever exposed to drip or condensed moisture, weatherproof yes. Are fittings installed where readily combustible materials or inflammable or explosive dust or gases are likely to be present yes, if so, how are they protected in flame proof fittings. and where are the controlling switches fitted in accommodation above, are all fittings suitably ventilated yes, are all fittings and accessories constructed and installed as per Rule yes. Searchlight Lamps, No. of 2, whether fixed or portable portable, are their fittings as per Rule yes. Heating and Cooking, is the general construction as per Rule yes, are the frames effectually earthed yes, are heaters in the accommodation of the convection type yes. Motors, are all motors constructed and installed as per Rule American Standard and placed in well-ventilated compartments in which inflammable gases cannot accumulate and free from damage from water, steam and oil yes, if situated near unprotected combustible material state minimum distance from same horizontally — and vertically —. Are motors coupled to oil fuel transfer and unit pressure pumps capable of being stopped from a position accessible in the event of fire in the pump compartment yes. Have motors of 100 BHP and over been inspected by the Surveyors during manufacture and testing no. Have certificates of test for motors under 100 BHP intended for essential services been supplied and the results found as per Rule no. Control Gear and Resistances, are they constructed and fitted as per Rule yes. Lightning Conductors, where required are they fitted as per Rule —. Ships carrying Oil having a Flash Point less than 150° F. Have all the special requirements of the Rules for such ships been complied with yes, are all fuses of the cartridge type yes are they of an approved type American type. Are the fittings for pump rooms, tween deck spaces, etc., in accordance with the special requirements for such ships yes. Are the cables lead covered as per Rule yes. Spare Gear, if the vessel is for open sea service have spares been provided as per Rule yes, are they suitably stored in dry situations yes. Insulation Tests, has the insulation resistance of all circuits and apparatus been tested and found satisfactory yes.

#### PARTICULARS OF GENERATING PLANT.

DESCRIPTION OF GENERATOR.	No. of	RATED AT				DRIVEN BY	WHERE DRIVEN BY AN INTERNAL COMBUSTION ENGINE.	
		Kilowatts.	Volts.	Ampères.	Revs. per Min.		Fuel Used.	Flash Point of Fuel.
MAIN ...	2	400 (500kVA)	450 AC 642	1100	1200	2 sets each driven by steam turbine		
	2	75	115 AC 600	1100	1200			
	2	55	115 AC 440	1100	1200			
EMERGENCY ...	1	75 (90kVA)	450 AC 110	900	1200	Diesel Engine	Diesel oil	above 150° F
ROTARY TRANSFORMER								

#### GENERATOR CABLES.

DESCRIPTION.	KILOWATTS.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (feet plus return feet).	INSULATED WITH.	HOW PROTECTED.
		No. in Parallel Per Pole.	Sectional Area or No. and Dia. of Strands.	In the Circuit.	Rule.			
MAIN GENERATOR ...	400	1	1.000.000	642	115	40	V.C.	h. l. & a.
" " EQUATOR ...	75	1	1.000.000	600	115	45	"	"
" " ...	55	1	750.000	440	592	45	"	"
EMERGENCY GENERATOR ...	75	1	1.000.000	110	150	30	"	"
ROTARY TRANSFORMER: MOTOR								
" " GENERATOR ...								

\* = exits for propulsion unit

#### MAIN DISTRIBUTION CABLES.

DESCRIPTION.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (feet plus return feet).	INSULATED WITH.	HOW PROTECTED.
	No. in Parallel Per Pole.	Sectional Area or No. and Dia. of Strands.	In the Circuit.	Rating.			
AUX. SWITCHBOARDS AND SECTION BOARDS ...							
Machine Shop Power Panel (440V)	1	10.400	9.3	25	120	V.C.	h. l. & a.
Galley Power (440V supply to 15 kVA board)	1	66.400	10.5	23.4	45	"	"
" " 220V " from trans.	1	300.000	10.5	23.4	150	"	"
More connection	1	650.000	10.5	23.4	45	"	"
440V supply to 15 kVA lighting trans.	1	66.400	10.5	23.4	100	"	"
220V " from 15 kVA trans. to install.	1	450.000	10.5	23.4	15	"	"

#### LIGHTING AND HEATING, ETC., CABLES.

WIRELESS ...	1	33.400	15	55	300	V.C.	h. l. & a.
NAVIGATION LIGHTS ...	1	10.400	15	25	150	"	"
LIGHTING AND HEATING ...							
Midship and Forecastle lighting	1	66.400	20	23	400	"	"
Port & Star Deck accommodation	1	33.400	20	55	70	"	"
Upper Deck accommodation	1	66.400	25	23	100	"	"
Engine Room lighting	1	33.400	15	23	40	"	"
Boiler Room	1	10.300	12	47	80	"	"
Subsidiary heater	1	6.530	3.4	110	75	"	"
Main Motor heater	1	6.530	13	110	2.4	"	"
Generator	1	6.530	13	110	30	"	"

#### MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED.	No.	B.H.P.						
E. R. Vent Fans	4	2	1	6530	3.4	10	60	V.C. h. l. & a.
Air compressor	1	5	1	6530	7.2	10	30	"
Vacuum Pumping gear	1	3	1	6530	4.5	10	20	"
Eng. Room Bilge Pumps	2	10	1	10400	15.7	25	110	"
Main shaft turning gear	1	5	1	6530	7.2	10	100	"
Main propulsion motor for	1	15	1	16500	21	3.4	75	"
Subsidiary service pump	2	5	1	6530	7.2	10	20	"
Subsidiary separator	1	2	1	6530	3.1	10	120	"
Fine and Bottomwater pumps	2	60	1	66400	10.5	23	60	"
Main condensate pumps	2	25	1	16300	32	4.7	50	"
Aux. circulating pump	1	30	1	33100	38.9	55	90	"
Aux. condensate pump	1	15	1	16500	19	3.4	50	"
Under circulating pump	1	10	1	10400	15.7	25	60	"
Evaporator Feed Pumps	2	1	1	6530	1.7	10	90	"
Refrigerant Vent Fans	2	2	1	6530	3.1	10	50	"
Refr. compressor	2	7.5	1	6530	9.0	10	115	"
Refr. circulating pumps	1	1	1	6530	1.55	10	150	"
Refrigerant pump	1	7.5	1	6530	10.3	10	115	"
Drinking Water Pump	1	15	1	16500	19.5	3.4	90	"
Large Pumps	3	100	1	450.000	24.8	30.0	60	"
Shipping Pumps	2	50	1	66.400	23	23	45	"
Fuel oil transfer pumps	2	20	1	16500	25	3.4	50	"
Heating gear motor	2	30	1	33100	39	45.5	115	"
Fuel oil pump	1	7.5	1	6530	10.5	10	45	"
Forced draught Fan	3	50/120	1	66400	63/29	23	80	"



The Electrical Equipment is installed in accordance with the approved plans and the requirements of the Rules.  
All Insulated Conductors are guaranteed to have been tested at the maker's works as specified in the Rules.  
The foregoing is a correct description.

Electrical Engineers.

Date

#### COMPASSES.

Minimum distance between electric generators or motors and standard compass

Minimum distance between electric generators or motors and steering compass

The nearest cables to the compasses are as follows:—

A cable carrying ..... Amperes ..... feet from standard compass ..... feet from steering compass.

A cable carrying ..... Amperes ..... feet from standard compass ..... feet from steering compass.

A cable carrying ..... Amperes ..... feet from standard compass ..... feet from steering compass.

Have the compasses been adjusted with and without the electric installation at work at full power

Has the effect of switching on and off circuits, motors and other electro-magnetic apparatus within the vicinity of the compasses been noted

The maximum deviation due to electric currents was found to be ..... degrees on ..... course in the case of the standard compass, and ..... degrees on ..... course in the case of the steering compass.

Builder's Signature.

Date

Is this installation a duplicate of a previous case? Yes, other T-2 Tankers so, state name of vessel

Plans. Are approved plans forwarded herewith ..... If not, state date of approval

Certificates. Are certificates of test for motors engaged on essential services and generators forwarded herewith

General Remarks (State quality of workmanship, whether insulation tests, etc., have been made, opinions as to class, etc.)

The electrical equipment of this vessel appears to have been installed in accordance with the typical plans of T-2 Tankers and American practice. The details given in this report were obtained from these plans and from personal observation on board. It was noted that lighting sub-circuits are controlled by single pole switches. The waterproof lighting fittings in the tween-deck space above the oil tanks have been replaced by Flameproof fittings. The <sup>circuits of the</sup> pilot (running) lamps of the motors have been connected to a 24 volt transformer.

The whole installation is examined and insulation tests have been carried out with satisfactory results. At the conclusion the equipment is tried out under working conditions and found good.

The installation appears to be in good condition and although not strictly in accordance with the Rules, it is, in my opinion, eligible to be accepted for classification.

Total Capacity of Generators 805 Kilowatts.

(The 2- 15 H.P. exciters are not included.)

The amount of Fee ... £300.- : When applied for, 2.2.2.1950

Travelling Expenses (if any) £40 :- : When received, 19.5.50

Committee's Minute ENR 14 APR 1950

Assigned

Noted sub 3/4/50

Mouth (H.V.D. 64115)  
Surveyor to Lloyd's Register of Shipping.