

# REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

22 FEB 1950

Received at London Office

Date of writing Report 14/2.50 When handed in at Local Office 15/2.50 Port of Amsterdam

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

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

Built at Chester Pa By whom built Sun S.B. & Dryd Co Yard No. 476 When built 1945

Owners Moller Line Ltd Port belonging to London

Electrical Installation fitted by Presumed 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 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. 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. 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 instrument 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

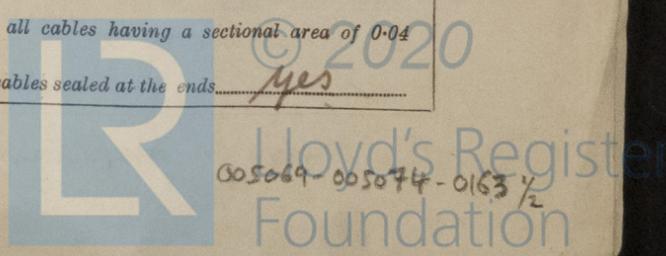
If circuit breakers are provided for the generators, at what overload current did they open when tested. not tested, are the reversed current protection devices connected on the pole opposite to the equaliser connection. have they been tested under working conditions, and at what current did they operate. all American

Joint Boxes, Section Boards and Distribution Boards, is the construction and position as per Rule. American Standard cables

Cables, are they insulated and protected as per the appropriate Tables of the Rules. Yes, 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. mechanical clamps, are the ends of all cables having a sectional area of 0.04 square inch and above provided with soldering sockets. Yes

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. a. - m deck installed under gangway in conduits; in machinery spaces clipped to saddles or direct to structure; in accommodation etc. clipped to saddles or direct to structure.

Are all lead sheaths, armoring 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 effectually 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 yes 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 DC	642	1100	2 sets each driven by steam turbine		
	2	75	115 AC	600	1100			
	2	55	115 AC	440	1100			
EMERGENCY	1	75 (90kVA)	450 DC	110	900	Diesel Engine	Diesel oil	above 150° F
ROTARY TRANSFORMER								

GENERATOR CABLES.

DESCRIPTION.	KILOWATTS.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (lead plus return feet).	INSULATED WITH.	HOW PROTECTED.
		No. in Parallel Per Pole.	Sectional Area or No. and Dia. of Strands.	In the Circuit.	Revs.			
MAIN GENERATOR	400	1	in. hils 1,000,000	642	115	40	V.C.	h. l. a.
" " EQUALIZER	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								

\* = extra for propulsion unit

MAIN DISTRIBUTION CABLES.

DESCRIPTION.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (lead plus return feet).	INSULATED WITH.	HOW PROTECTED.
	No. in Parallel Per Pole.	Sectional Area or No. and Dia. of Strands.	In the Circuit.	Revs. per Min.			
AUX. SWITCHBOARDS AND SECTION BOARDS							
Machinery Shop Power Panel (440V)	1	10,400	93	25	120	V.C.	h. l. a.
Galley Power (440V supply to 15 kVA board)	1	66,400	83	45	45	"	"
" " 220V " from transfer	1	300,000	105	234	150	"	"
More connection	1	650,000	302	45	45	"	"
440V supply to 15 kVA lighting transfer	1	66,400	83	100	45	"	"
220V " from 15 kVA h. transfer to install.	1	450,000	300	15	15	"	"

LIGHTING AND HEATING, ETC., CABLES.

WIRELESS	1	33,400	15	55	300	V.C.	h. l. a.
NAVIGATION LIGHTS	1	10,400	15	15	150	"	"
LIGHTING AND HEATING							
Midship and Forecastle lighting	1	66,400	30	23	400	"	"
Port & Star Deck promm. "	1	33,400	20	55	70	"	"
Upper Deck accommodation "	1	66,400	25	23	100	"	"
Engine Room lighting	1	66,400	15	23	40	"	"
Painter Room "	1	16,300	12	47	80	"	"
Subs. heater	1	6,530	34	10	75	"	"
Main Motor heater	1	6,530	13	10	24	"	"
Generator "	1	6,530	13	10	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 Farming 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	34	75	" "
Subs. oil service pump	2	5	1	6530	7.2	10	20	" "
Subs. oil separator	1	2	1	6530	2.1	10	120	" "
Fine and Waterwash pumps	2	50	1	66400	10.5	83	60	" "
Main condensate pumps	2	15	1	16300	3.2	47	50	" "
Aux. circulating pump	1	30	1	33100	39.9	55	90	" "
Aux. condensate pump	1	15	1	16500	19	34	70	" "
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	60	" "
Refr. compressor	2	7.5	1	6530	9.0	10	115	" "
Refr. circulating pumps	1	1	1	6530	1.55	10	150	" "
Sanitary pump	1	7.5	1	6530	10.5	10	115	" "
Drinking Water Pump	1	75	1	16500	19.5	34	90	" "
Large Pumps	3	100	1	450,000	248	300	60	" "
Shipping Pumps	2	50	1	66,400	63	83	45	" "
Fuel oil transfer pumps	2	20	1	16,500	25	34	50	" "
Steering gear/motor	2	30	1	33,100	39	45.5	115	" "
Fuel oil pump	1	75	1	6530	10.5	10	45	" "
Forced Draft Fan	3	50/120	1	66400	63/29	83	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 ..... Ampères ..... feet from standard compass ..... feet from steering compass.

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

A cable carrying ..... Ampères ..... 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 Tanker 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 Flame proof 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 2-1/2 H.P. exciter are not included.)

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

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

Noted sum 3/4/10.

Mouth (H.V.D. 61115)  
 Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRI 14 APR 1950

Assigned.....

5m. 4.30. — Transfer. (MADE AND PRINTED IN ENGLAND.)  
 (The Surveyors are requested not to write on or below the space for Committee's Minute.)