

# REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office JAN 18 1939

Date of writing Report 10th Jan, 1939 When handed in at Local Office 17 JAN 1939 Port of Sunderland  
 No. in Survey held at Sunderland Date, First Survey 9th Nov., 1938 Last Survey 10th January 1939  
 Reg. Book. Supp. (Number of Visits.....) 18  
 87277 on the M.V. "BRITISH GENIUS" Tons { Gross 8553  
 Net 4961  
 Built at Sunderland By whom built W. Dorrance & Sons, Ltd. Yard No. 644 When built 1939  
 Owners British Tanker Co. Ltd. Port belonging to London  
 Electric Light Installation fitted by The Sunderland Eng. & Eng. Co. Ltd. Contract No. 644 When fitted 1939  
 Is the Vessel fitted for carrying Petroleum in bulk Yes

System of Distribution Double wire volts, Power 110 volts.  
 Pressure of supply for Lighting 110 volts, Heating — Power Direct  
 Direct or Alternating Current, Lighting Direct  
 If alternating current system, state frequency of periods per second —  
 Has the Automatic Governor been tested and found efficient when the whole load is suddenly thrown on or off Yes, are they compound wound Yes  
 Generators, do they comply with the requirements regarding temperature rise Yes, if not compound wound state distance between each generator —  
 are they over compounded 5 per cent. Yes, is an adjustable regulating resistance fitted in  
 Where more than one generator is fitted are they arranged to run in parallel 2 machines arranged to run in parallel  
 Have certificates of test results for machines under 100 kw. been submitted and series with each shunt field Yes  
 approved Yes, certificates submitted Have machines over 100 kw. been inspected by the Surveyors during manufacture and testing Home fitted  
 Have certificates for generators under 100 kw. been supplied and approved Manufacturers' test certificates only supplied  
 Are all terminals accessible, clearly marked, and furnished with sockets Yes, are they so spaced or shielded that they cannot be accidentally earthed,  
 short circuited, or touched Yes, is the ventilation  
 Position of Generators Engine room forward end if situated near unprotected  
 in way of the generators satisfactory Yes, are they clear of all inflammable material Yes and —  
 woodwork or other combustible material, state distance of same horizontally from or vertically above the generators. —  
 are the generators protected from mechanical injury and damage from water, steam or oil Yes, are their axes of rotation fore and aft Yes  
 Earthing, are the bedplates and frames of the generating plant efficiently earthed Yes, are the prime movers and their respective generators  
 in metallic contact Yes Main Switch Boards, where placed on raised platform at forward  
end of engine room. If the generators and main switchboard are not placed in the same compartment, is each generator provided with  
 a fuse on each insulated pole as near as possible to the terminals of the generator, additional to that provided on the main switchboard —  
 Switchboards, are they placed in accessible positions, free from inflammable gases and acid fumes Yes, are they protected from mechanical  
 injury and damage from water, steam or oil Yes, if situated near unprotected woodwork or other combustible material, state distance of same  
 horizontally from or vertically above the switchboards — and —, are they constructed wholly of durable, non-ignitable non-absorbent  
 materials Yes, is all insulation of high dielectric strength and of permanently high insulation resistance —  
 is it of an approved type —, if semi-insulating material is used, are all conducting parts insulated from the slab with mica or micaite or other  
 non-hygroscopic insulating material, and the slab similarly insulated from its framework Yes, is the non-hygroscopic insulating material of an approved  
 type Yes, and is the frame effectively earthed Yes Are the fittings as per Rule regarding: — spacing or shielding of live parts  
 accessibility of all parts Yes, absence of fuses on back of board Yes, temperature rise of  
 omnibus bars Yes, individual fuses to voltmeter, pilot or earth lamp Yes, are moving parts of switches alive in the  
 "off" position Yes, are all screws and nuts securing connections effectively locked Yes, are any fuses fitted on the live side of  
 switches No Main Switchgear, description of switchgear for each generator and each outgoing circuit, and arrangement of equalizer switches  
Double pole oil, time limit & reverse current breakers on main generators; double  
pole knife switches and double pole fuses on auxiliary generators and on outgoing  
circuits; third pole of circuit breakers used for equalizer connection.  
 Are turbine driven generators fitted with emergency trip switch as per rule — Are cubboards or compartments containing switchboards composed of  
 fire-resisting material or lined with approved material — Instruments on main switchboard Twelve ammeters Three  
 voltmeters — synchronising device for paralleling purposes. For compound machines is the ammeter connected on the opposite pole to equaliser connection  
 Earth Testing, state what means are provided at the main switchboard for indicating the state of the insulation of the system  
Yes E lamps coupled to E through switches fuses Switches, Circuit Breakers and Fusible Cut-outs,  
 do these comply with the requirements of the Rules. Yes are the fusible cutouts of an approved type Yes have the reversed

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current protection devices been tested under working conditions *Yes* are all fuses labelled as per rule *Yes*

**Joint Boxes, Section and Distribution Boards,** is the construction, protection, insulation, material, and position of these as per rule *Yes*

**Cables:** Single, twin, concentric, or multicore *Single* are the cables insulated and protected as per Tables IV, V, X, XI, XII or XIII of the Rules *Yes*

If the cables are insulated otherwise than as per Rule, are they of an approved type *Yes* **Fall of Pressure,** state maximum between bus bars and any point of the installation under maximum load *Less than 5.3 volts*

area of 0.04 square inch and above provided with soldering sockets *Yes* **Cable Sockets,** are the ends of all cables having a sectional

If conductors are paper or varnished cambric insulated, is the dielectric at the exposed ends of the conductor protected from moisture by being suitably sealed with insulating compound *Yes* **Paper Insulated and Varnished Cambric Insulated Cables,**

not exposed to drip or accumulation of water or oil, or to high temperature from boilers, steam pipes, uptakes or other hot objects, or to avoidable risk of mechanical damage *Yes* **Cable Runs,** are the cables fixed as far as possible in accessible positions

Are cables in machinery spaces, galleys, lavatories, bathrooms and latrines lead covered or run in conduit *Yes* **Support and Protection of Cables,** state how the cables are supported and protected *L.C.A.B. cables run in galleys, pipelined in the main passageway; L.C.B. cables in a lower part of the main passageway; L.C.B. cables in a lower part of the main passageway*

If cables are run in wood casings, are the casings and caps secured by screws *Yes* **Refrigerated Chambers,** are the cables and fittings in accordance with the special requirements *Yes*

**Joints in Cables,** state if any, and how made, insulated, and protected *None made*

**Watertight Glands and Deck Tubes,** are all cables passing through decks and watertight bulkheads provided with deck tubes or watertight glands *Yes*

**Bushes in Beams and Non-watertight Partitions,** where unarmoured cables pass through beams and non-watertight partitions, are the holes efficiently bushed *Yes* **Earthing Connections,** state what earthing connections are fitted and their respective sectional areas *Lead & fibre*

**Alternative Lighting,** are the groups of lights in the propelling machinery space arranged as per Rule *Yes* **Emergency Supply,** state position and method of control of the emergency supply and how the generator is driven *Emergency lighting for engine room is provided fed from battery located near main switch-board*

**Navigation Lamps,** are these separately wired *Yes* **Secondary Batteries,** are they constructed and fitted as per Rule *Yes*

are the switches and fuses grouped in a position accessible only to the officers on watch *Yes* **Fittings,** are all fittings on weather decks, in stokeholds and engine rooms and wherever exposed to drip or condensed moisture, watertight *Yes*

are any fittings placed in spaces in which goods are liable to be stacked in close proximity to them; if so, how are they protected *Artic" fastlight fittings (2 in number) fitted in pump room L.C.B. cables led in galvanised steel pipe external to pump room where are the controlling switches situated on mesship accommodation*

are all fittings suitably ventilated *Yes* **Heating and Cooking Appliances,** are they constructed and fitted as per Rule *Yes*

**Searchlight Lamps,** No. of *Searchlight* whether fixed or portable *Yes* **Motors,** are their working parts readily accessible *Yes*

are the brushes, brush holders, terminals and lubricating arrangements as per Rule *Yes* **Lighting Conductors,** where lightning conductors are required, are these fitted as per Rule *Yes*

**Ships carrying Oil having a Flash Point less than 150° F.** Have the special requirements of the Rules been complied with regarding switches, joint boxes, section and distribution boards, protection of cables, method of distribution, lead of cables, lights and fittings *Yes*

If portable lamps for use in dangerous spaces are supplied, are they of a self-contained, battery-fed flameproof type approved for use in dangerous spaces *Yes*

**Spare Gear,** if the vessel is for open sea service have spares been supplied as per Rule *Yes*

PARTICULARS OF GENERATING PLANT.										
DESCRIPTION OF GENERATOR.	No. of	RATED AT			Revs. per Min.	DRIVEN BY	WHERE DRIVEN BY AN INTERNAL COMBUSTION ENGINE.			
		Kilowatts.	Volts.	Amps.			Fuel Used.	Flash Point of Fuel.		
MAIN	2	30	110	273	550	Oil	150°F			
AUXILIARY	1	8	110	73	750	Oil	150°F			
EMERGENCY										
ROTARY TRANSFORMER										
GENERATOR, LIGHTING AND HEATING CONDUCTORS.										
DESCRIPTION.	CONDUCTORS.		COMPOSITION OF STRAND.		TOTAL MAXIMUM CURRENT. AMPERES.		Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.	
	No. per Pole.	Total Nominal Area per Pole Sq. Ins.	No.	Diameter.	In Circuit.	Rule.				
MAIN GENERATORS...	2	2 x .075	19	.072	273	157 x 2	44	V.C.	L.C.A.B.	
EQUALISER CONNECTIONS	1	.075	19	.072	—	57	22	V.C.	L.C.A.B.	
AUXILIARY GENERATOR...	1	.04	19	.052	73	104	72	V.C.	L.C.A.B.	
EMERGENCY GENERATOR										
ROTARY TRANSFORMER										
ENGINE ROOM...	1	.007	7	.036	23	24	180	V.I.R.	L.C.A.B.	
BOILER ROOM...	1	.007	7	.036	23	24	180	V.I.R.	L.C.A.B.	
AUXILIARY SWITCHBOARDS	1	.0145	7	.052	16	57	540	V.C.	L.C.A.B.	
NAVIGATION LTA.	1	.007	7	.036	12	24	60	V.I.R.	L.C.A.B.	
CHARGING BOARD	1	.007	7	.036	12	24	60	V.C.	L.C.A.B.	
SEARCHLIGHT FEED	1	.0225	7	.064	60	75	980	V.C.	L.C.A.B.	
ACCOMMODATION S.B. FEED:-	1	.06	19	.064	56.6	135	480	V.C.	L.C.A.B.	
SUPPLY:- F.O.S.L.D.B.	1	.01	7	.036	3.6	31	300	V.I.R.	L.C.A.B.	
APT. MND. H.C.P.	1	.007	7	.036	3.6	31	300	V.I.R.	L.C.A.B.	
ENG. MND. H.C.P.	1	.01	7	.036	3.6	31	300	V.I.R.	L.C.A.B.	
STBD. LTA. D.B.	1	.01	7	.036	3.6	31	300	V.I.R.	L.C.A.B.	
PORT LTA. D.B.	1	.01	7	.036	3.6	31	300	V.I.R.	L.C.A.B.	
APT. ACCOM. S.B. FEED:-	1	.0225	7	.064	28.1	46	180	V.I.R.	L.C.A.B.	
SUPPLY:- F.O.S.L.D.B.	1	.007	7	.036	14.6	24	300	V.I.R.	L.C.A.B.	
STBD. LTA. D.B.	1	.01	7	.036	3.6	31	300	V.I.R.	L.C.A.B.	
WIRELESS	1	.0145	7	.052	20	57	540	V.C.	L.C.A.B.	
SEARCHLIGHT	1	.0225	7	.064	60	75	978	V.C.	L.C.A.B.	
MASTHEAD LIGHT	1	.003	1	.064	36	12.9	500	V.I.R.	L.C.A.B.	
SIDE LIGHTS	1	.003	1	.064	36	12.9	60	V.I.R.	L.C.A.B.	
COMPASS LIGHTS	1	.003	1	.064	36	12.9	40	V.I.R.	L.C.A.B.	
STBD. LIGHTS	1	.003	1	.064	36	12.9	700	V.I.R.	L.C.A.B.	
CARGO LIGHTS										
HEATERS										
MOTOR CONDUCTORS.										
DESCRIPTION.	No. of Motors.	CONDUCTORS.		COMPOSITION OF STRAND.		TOTAL MAXIMUM CURRENT. AMPERES.		Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.
		No. Per Pole.	Total Nominal Area per Pole Sq. Ins.	No.	Diameter.	In Circuit.	Rule.			
BALLAST PUMP										
MAIN BILGE LINE PUMPS										
GENERAL SERVICE PUMP										
EMERGENCY BILGE PUMP										
SANITARY PUMP										
CIRC. SEA WATER PUMPS										
CIRC. FRESH WATER PUMPS										
AIR COMPRESSOR										
FRESH WATER PUMP										
ENGINE TURNING GEAR										
ENGINE REVERSING GEAR										
LUBRICATING OIL PUMPS										
OIL FUEL TRANSFER PUMP										
WINDLASS										
WINCHES, FORWARD										
ENGINE ROOM CRANE	1	1	.01	7	.044	27	31	120	V.I.R.	L.C.A.B.
WINCHES, AFT										
REFRAIG. MAGNY.	1	1	.0225	7	.064	65	75	240	V.C.	L.C.A.B.
STEERING GEAR										
(a) MOTOR GENERATOR										
(b) MAIN MOTOR										
WORKSHOP MOTOR	1	1	.01	7	.044	27	31	180	V.I.R.	L.C.A.B.
VENTILATING FAN ORGANT.	1	1	.0225	7	.064	39	46	120	V.I.R.	L.C.A.B.
ER. AUXILIARIES S.B. FEED:-	1	1	.0145	7	.052	20	57	540	V.C.	L.C.A.B.
SUPPLY:- OIL PURIFIER	1	1	.0045	7	.036	3.6	31	300	V.I.R.	L.C.A.B.
PUMPING PUMP	1	1	.003	1	.064	36	12.9	500	V.I.R.	L.C.A.B.
ER. VENT. FAN	1	1	.003	1	.064	36	12.9	60	V.I.R.	L.C.A.B.
CRANK CASE PUMP	1	1	.003	1	.064	36	12.9	40	V.I.R.	L.C.A.B.
VENT. FAN S.B. FEED:-	1	1	.0145	7	.052	20	57	540	V.C.	L.C.A.B.
SUPPLY:- LEAF S.B. FEED:-	1	1	.0145	7	.052	20	57	540	V.C.	L.C.A.B.
SUPPLY:- 3 FANS	3	1	.0145	7	.052	20	57	540	V.C.	L.C.A.B.



*The foregoing is a correct description.*

Date 11 - 1 - 1939

## COMPASSES.

*The nearest cables to the compasses are as follows :—*

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

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

*Builder's Signature.*

Date 16 Aug. 1952.

Is this installation a duplicate of a previous case no If so, state name of vessel

General Remarks (State quality of workmanship, opinions as to class, etc. The electrical equipment of this vessel has been installed under special survey. The materials used and the workmanship are good. On completion the equipment was run under working conditions, the dynamo engine governors were operated, the overload and reverse current trip mechanisms of the circuit breakers were adjusted and operated, the main switchboard, section boards, distribution boards, switches, fuses, cables, motors and fittings were examined and tested, the insulation resistance of all circuits was measured and the spare gear was checked. The electrical equipment is in my opinion suitable for a classed vessel carrying petroleum in bulk. The vessel is fitted with direction finding equipment and an echo sounding device.

Total Capacity of Generators ..... 68 ..... Kilowatts.

The amount of Fee ... .. £ 29 : 6 : 14 JAN 1939

When received.  
17 JAN 1939  
Travelling Expenses (if any) £ : : *Mr.*

Committee's Minute

FRI 20 JAN 1939

*Assigned*

See F.E. machy rpt

2m, 12.36.—Transfer.

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