

# REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

30 SEP 1946

Received at London Office.....

Date of writing Report 17.9.1946 When handed in at Local Office 8 SEP 1946 Port of Sunderland.

No. in Survey held at Sunderland. Date, First Survey 1-7-46 Last Survey 23-9-1946  
Reg. Book. 85884 on the M.V. "BRITISH MARSHAL" (Number of Ticks 13)

Tons { Gross 858.2 Net 491.8

Built at Sunderland. By whom built Wm Dobson & Sons. Yard No. 737 When built 1946

Owners The British Tanker Coy. Ltd Port belonging to London.

Electrical Installation fitted by Campbell & Isherwood Ltd Contract No. 737 When fitted 1946.

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. R.A.P.R. - Yes

Have plans been submitted and approved. Yes System of Distribution Two wire insulated Voltage of supply for Lighting 110

Heating - Power 110 Direct or Alternating Current, Lighting Yes Power Yes If Alternating Current state periodicity. - 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. - Generators, are they compound wound. Yes, 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. Yes, 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. - Have certificates of

test for machines under 100 kw. been supplied. Yes and the results found as per rule. Yes Are the lubricating arrangements and the construction

of the generators as per rule. Yes Position of Generators No. 1 & 2. Engine Room End of Main Engine level. No. 3

on Tank Deck; 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. on Tank Deck above No. 1 & 2. generators.

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. Dry "Kindsange" if of synthetic insulating material is it an Approved Type. Yes, 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, 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. a triple pole (one pole

for equaliser) air-break circuit-breaker fitted with oil & time-lag, & R/O Current

Tripping devices.

and for each outgoing circuit. a double pole double-throw quick-break trip switch and

double pole fuse.

Are compartments containing switchboards composed of fire-resisting material or lined as per Rule. Yes Instruments on main switchboard. 3

ammeters. 3 voltmeters. - synchronising devices. For compound machines in parallel is the ammeter connected on the pole opposite to the

equaliser connection. Yes Earth Testing, state means provided. E lamps connected to E through fuses.

Switches, Circuit Breakers and Fuses, are they as per Rule. Yes, are the fuses an approved type. Yes, 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. 20% are the reversed current

protection devices connected on the pole opposite to the equaliser connection. Yes, have they been tested under working conditions, and at what current

did they operate. 15% Joint Boxes, Section Boards and Distribution Boards, is the construction and position as per Rule. Yes

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. -

state maximum fall of pressure between bus bars and any point under maximum load. 2.6 lb., are the ends of all cables having a sectional area of 0.01

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. State how the cables are supported and protected. all feeds are V.C.L.R.B. clipped to bulk or perforated metal tray. In accommodation L.C. cables on the surface & protected by wood or metal guards where necessary.

Are all lead sheaths, armouring and conduits effectually bonded and earthed. yes. Refrigerated chambers, are the cables and fittings as per Rule. yes

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. yes and with what material. lead. Alternative Lighting, are the groups of lights in the engine and boiler rooms arranged as per Rule. yes Emergency Supply, state position. 8-12V. lights placed in engine room & locker room. and method of control. battery - with 20-25V relay operating on failure of main supply or E.C. fuses. 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. 2 of 80 AH.

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. Wiggin flameproof lighting fittings installed in stokeholds and about decks.

and where are the controlling switches fitted. in officers quarters, are all fittings suitably ventilated. yes, are all fittings and accessories constructed and installed as per Rule. yes. Searchlight Lamps, No. of - , whether fixed or portable - , are their fittings as per Rule - . Heating and Cooking, is the general construction as per Rule - , are the frames effectually earthed - , are heaters in the accommodation of the convection type - . 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 - . Have motors of 100 BHP and over been inspected by the Surveyors during manufacture and testing. - . Have certificates of test for motors under 100 BHP intended for essential services been supplied and the results found as per Rule. yes. 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. yes. 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	3	30	110	275	640	Single Cylinder Vertical Steam Engines		
EMERGENCY								
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. Sq. ins. or sq. mm.	In the Circuit.	Rule.			
MAIN GENERATOR	No. 1. 30	1	37/083	275	296	46	V.C.	L.C.A.B.
" " EQUALISER		1	19/083	191	23	23	"	"
" " Equaliser	No. 2. 30	1	37/083	275	296	48	"	"
" " Equaliser	No. 3. 30	1	19/083	191	24	24	"	"
" " Equaliser		1	37/083	275	296	136	"	"
" " Equaliser		1	19/083	191	28	28	"	"
EMERGENCY GENERATOR								
ROTARY TRANSFORMER: MOTOR								
" " GENERATOR								

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. Sq. ins. or sq. mm.	In the Circuit.	Rule.			
AUX. SWITCHBOARDS AND SECTION BOARDS							
Midship Section Board 'A'	1	37/072	65	246	560	V.C.	L.C.A.B.
Off	1	19/044	50	87	134	"	"
Vent Fans " " 'B'	1	19/0612	76	135	304	"	"
" " " 'C'	1	19/083	76	191	560	"	"
Engine Room Lighting S.B. 'E'	1	19/044	50	87	70	"	"
Workshop S.B. 'E'	1	19/052	56	104	156	"	"
Galley Principals S.B. 'D'	1	19/044	48	87	132	"	"

LIGHTING AND HEATING, ETC., CABLES.

WIRELESS	1	19/044	25	87	560	V.C.	L.C.A.B.
NAVIGATION LIGHTS	1	7/044	8	42	560	"	"
LIGHTING AND HEATING							
Accommodation Light Post - off 'B'	1	7/044	11.6	42	78	V.C.	L.C.
" " " " " " " "	1	7/044	10.5	42	70	"	"
Galley & Hospital Light Post	1	7/044	4	42	230	"	"
Accommodation Upper Deck Post	1	7/044	14.2	42	70	"	"
" " " " " " " "	1	7/044	14	42	60	"	"
Forecastle Lighting - off 'A'	1	7/044	2.5	42	420	"	L.C.A.B. and L.C.
Engine Room Light Post	1	7/044	12	42	40	"	L.C.
" " " " " " " "	1	7/044	12.9	42	30	"	"
Stokehold Light	1	7/044	6.5	42	60	"	"
Upper Bridge Deck Light	1	7/044	17.2	42	92	"	"
Bridge Deck Light	1	7/044	8.3	42	120	"	"
Headlight Light	1	7/044	10.8	42	150	"	"
Wheelhouse Light	1	7/044	6.5	42	100	"	"
Machinery Space Light - off Main Board	1	19/044	39	87	48	"	L.C.A.B.
Galley Island	1	7/022	13	28	200	"	"

MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED.	No.	B.H.P.						
Engine Room Vent Fan - Post.	1	3	1	7/044	26	42	32	V.C. L.C.B.
" " " " " " " "	1	3	1	7/044	26	42	72	"
" " " " " " " "	1	3	1	7/044	26	42	120	"
Brake Winch - Post	1	2	1	7/044	18	42	60	"
" " " " " " " "	1	2	1	7/044	18	42	132	"
Vent Fan - Post	1	3	1	7/044	26	42	40	"
" " " " " " " "	1	3	1	7/044	26	42	48	"
" " " " " " " "	1	1/2	1	3/029	5	5	40	V.I.R.
Brake Winch - Post	1	2	1	7/044	18	42	140	V.C.
" " " " " " " "	1	2	1	7/044	18	42	64	"
Crane Motor	1	2	1	7/044	18	42	240	"
Priming Pump	1	1.75	1	7/044	15/20	42	180	"
Oil Purifier No. 1	1	2	1	7/044	18	42	36	"
" " " " " " " "	1	2	1	7/044	18	42	36	"
Grinder	1	1.5	1	7/044	16	42	65	"
Workshop Motor	1	4	1	7/044	35	75	50	"
Air Conditioning Fan.	1	1/2	1	3/029	5	5	50	V.I.R.
Compressor	1	1 1/2	1	7/044	15	42	40	V.C.
Galley Island	1	5	1	2/002	4	5	60	PYRO

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.

CAMPBELL & ISHERWOOD, LTD.

PER *W. H. ...*

Electrical Engineers.

Date *19th September 1946.*

COMPASSES.

Minimum distance between electric generators or motors and standard compass *10'*

Minimum distance between electric generators or motors and steering compass *16'*

The nearest cables to the compasses are as follows:—

A cable carrying *.15* Ampères *in the* feet from standard compass *6'* feet from steering compass.

A cable carrying *.15* Ampères *6* feet from standard compass *on the* 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 *yes*

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

The maximum deviation due to electric currents was found to be *nil* degrees on *west* course in the case of the

standard compass, and *nil* degrees on *every* course in the case of the steering compass.

For and on behalf of

WILLIAM DOXFORD & SONS, Limited. Builder's Signature.

Date *25/9/46*

Is this installation a duplicate of a previous case *yes* Managing Director, If so, state name of vessel *M.V. British Major*

Plans. Are approved plans forwarded herewith *no*. If not, state date of approval *5.12.3.46. D.28.2.46*

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

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

*The electrical equipment of this vessel has been installed under special survey in accordance with the approved plans and the Society's "Rules for Electrical Equipment": The materials used are of good quality and design and the workmanship is good: upon completion the equipment was operated on load with satisfactory results, and the insulation resistance of each circuit was measured and found good: This equipment is in my opinion suitable for a classed vessel.*

*Notes  
 Thu 7.10.46*

Total Capacity of Generators *(3x30) 90* Kilowatts.

The amount of Fee ... £ *31.10.0.* When applied for, *25 SEP 1946*

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

*S. A. ...*

Surveyor to Lloyd's Register of Shipping.

*FIL 11 OCT 1946*

Committee's Minute .....

Assigned *See F.E. mch. rpt.*

5th Ed. 1939—Transfer. (MADE AND PRINTED IN ENGLAND.)  
 (The Surveyors are requested not to write on or below the space for Committee's Minutes.)

ML-D



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