

# REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

6 APR 1951

Date of writing Report **16.3.51** 19... When handed in at Local Office **MAR 29 1951** 19... Received at London Office...  
 No. in Survey held at **Sunderland** Date, First Survey **27.7.50** Last Survey **21.3.51** 19...  
 Reg. Book. (No. of Visits **20**)  
 on the **m.v. "BRITISH BUILDER"** Tons { Gross **8699** Net **5048**  
 Built at **Sunderland** By whom built **Wm. Doxford & Sons Ltd** Yard No. **782** When built **1950** 1951  
 Owners **British Tanker Company** Port belonging to **London**  
 Installation fitted by **Campbell & Isherwood Ltd** When fitted **1950**

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

Plans, have they been submitted and approved **yes** System of Distribution **2-wire ins.** Voltage of Lighting **110**

Heating - Power **110** D.C. or A.C., Lighting **D.C.** Power **D.C.** If A.C. state frequency **-**

Prime Movers, has the governing been found as per Rule when full load is thrown on and off **yes** Are turbine emergency governors fitted with a trip switch **-** Generators, are they compound wound **yes**, and level compounded under working conditions **yes**, if not compound wound state distance between generators **-** and from switchboard **-** Are the generators 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**

Position of Generators **engine room starboard, on raised deck**

is the ventilation in way of generators satisfactory **yes** are they clear of inflammable material and protected from mechanical injury and damage from water, steam and oil **yes** Switchboards, where are main switchboards placed **on angle framework near generators**

are they in accessible positions, free from inflammable gases and acid fumes and protected from mechanical injury and damage from water, steam and oil **yes**, what insulation is used for the panels **Ebony "Sindanyo"**, 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 construction as per Rule, including locking of screws and nuts **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 O/L and R/V current tripping devices.**

and the switch and fuse gear (or circuit breakers) for each outgoing circuit **a double-pole knife switch and fuses.**

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 are the ammeters and reversed current protection devices connected on the pole opposite to the equaliser connection **-** Earth Testing, state means provided **E. lamps**

Switches, Circuit Breakers and Fuses, are they as per Rule **yes**, are the fuses an Approved Type **yes** make of fuses **"ZED"**, are all fuses labelled **yes** If circuit breakers are provided for the generators, at what overload do they operate **12%**, and at what current do the reversed current protective devices operate **15%**

Joint Boxes, Section Boards and Distribution Boards, is the construction as per Rule **yes**

Cables, are they insulated and protected as per Rule **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 **less than 6.0** the ends of all cables having a sectional area of 0.01 square inch and above provided with soldering sockets **yes** Are all paper insulated and varnished cambric insulated cables sealed at the ends **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 any cables laid under machines or floorplates **no**, if so, are they adequately protected **-** Are cables in machinery spaces, galleys, laundries, etc., lead covered **yes** or run in conduit **-** or of the "HR" type **-** State how the cables are supported or protected **main cables from engine room to midship house, V.C.L.C.A.B. on steel channel fixed to underside of fore and aft gangway with cover plate fitted: Accommodation, L.C.B. on the surface and protected where necessary by wood or metal guards.**

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

Alternative Lighting, are the groups of lights in the engine and boiler rooms arranged as per Rule...yes... Emergency Supply, state position skeleton lighting system for machinery spaces from storage batteries near switchboard.

Navigation Lamps, are they separately wired...yes... controlled by separate double pole switches 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... Is an alternative supply provided...yes...

Secondary Batteries, are they constructed and fitted as per Rule...yes... are they adequately ventilated...yes... state battery capacity in ampere hours...45 A.H.

Fittings, are all fittings on weather decks, in stokeholds and engine rooms and wherever exposed to drip or condensed moisture, weatherproof...yes... Are any 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...Wigan flameproof lighting fittings as approved in centrecastle

and where are the controlling switches fitted...in officers quarters... Are all fittings suitably ventilated...yes...

Searchlight Lamps, No. of...2... whether fixed or portable...-... are they of the carbon arc or of the filament type...-

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 and placed in well-ventilated compartments in which inflammable gases cannot accumulate and protected from damage from water, steam and oil...yes...

Are motors coupled to oil fuel transfer and 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 sea 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 an Approved Cartridge Type...yes... make of fuse...ZED... Are the fittings for pump rooms, tween deck spaces, etc., in accordance with the special requirements for such ships...no... Are the cables lead covered as per Rule...yes...

E.S.D., if fitted state maker...Marconi... location of transmitter fwd end E.R.M.P. and receiver ditto, S.

Spare Gear, if the vessel is for open sea service have spares been provided as per Rule and 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	MAKER.	RATED AT			PRIME MOVER.		
			Kilowatts per Generator.	Volts.	Ampères.	Revs. per Min.	TYPE.	MAKER.
MAIN ...	2	S.F.&Eng.Co.Ltd	75	110	681	500	Diesel	Mirrless B.&Day
	1	ditto	30	110	273	500	Steam	S.F.&Eng. Co.Ltd
EMERGENCY ... ROTARY TRANSFORMER							Serials: Gen.41495, Gen.41496, Gen.41064	Eng.32317 (Diesel), Eng.32318 do., Eng.41063 (Steam)

GENERATOR CABLES.

DESCRIPTION.	KILOWATTS.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (lead plus return feet).	INSULATION.	PROTECTIVE COVERING.
		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	75	2	37/.103	681	816	60	V.C.	L.C.B.
" " EQUALISER ...		1	37/.103		408	30	"	"
" " No.2	75	2	37/.103	681	816	84	"	"
" " eq.		1	37/.103		408	42	"	"
" " No.3	30	1	37/.083	273	314	120	"	"
" " eq		1	37/.083		314	60	"	"
EMERGENCY GENERATOR ...								
ROTARY TRANSFORMER: MOTOR								
" " GENERATOR...								

MAIN DISTRIBUTION CABLES (to Section Boards, Distribution Fuse Boards, etc.).

DESCRIPTION.								
Poop Deck Section Panel 'D'	I	19/.052	104	110	60	V.C.	L.C.A.B.	
Upper Deck " " 'K'	I	7/.064	52	80	170	"	"	
Engine Room " " 'G'	I	7/.064	40	80	60	"	"	
Poop Deck " " 'C'	I	7/.064	68	80	62	"	"	
Frig.Machy. " " 'F'	I	7/.044	24	45	312	"	L.C.B.	
Aux.Switchboard Feeder (Radar & W/T)	I	37/.083	70	314	364	"	L.C.A.B.	
" " (Ltg & Power)	I	37/.083	155	314	364	"	"	
Eng. Rm.Switchboard Feeder	I	19/.083	128	202	60	"	"	
Navigating Bridge Section Panel 'A'	I	7/.036	19	28	22	"	L.C.B.	
Bridge Deck Section Panel 'E'	I	7/.036	7	28	20	"	"	
Upper Deck " " 'L'	I	7/.052	40	60	66	"	"	
Bridge Deck " " 'H'	I	7/.052	30	60	30	"	"	

LIGHTING, HEATING, WIRELESS, NAVIGATION LIGHTS, ETC., CABLES.

DESCRIPTION.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (lead plus return feet).	INSULATION.	PROTECTIVE COVERING.
	No. in Parallel per Pole.	Sectional Area or No. and Dia. of Strands. Sq. ins. or sq. mm.	In the Circuit.	Rule.			
Poop Deck DB, 'K-1' off SB - 'K'	I	7/.036	4	28	160	V.C.	L.C.B.
" " " 'K-2' " "	I	7/.036	10	28	100	"	"
" " " 'K-3' " "	I	7/.036	10	28	12	"	"
Upper Deck DB 'K-4' " "	I	7/.036	14	28	130	"	"
" " " 'K-5' " "	I	7/.036	14	28	78	"	"
Eng.Rm.Port DB, 'G-1' off SB - 'G'	I	7/.036	10	28	120	"	L.C.A.B.
" " Star. " 'G-2' " "	I	7/.036	10	28	10	"	"
Boiler Rm. " 'G-3' " "	I	7/.036	10	28	140	"	"
Galley DB, 'C-1' off SB - 'C'	I	7/.036	10	28	260	"	L.C.B.
Navigation, Main Supply from SB - 'A'	I	3/.036	4	10	120	V.I.R.	"
" Alt. " " DB 'L-1'	I	3/.036	-	10	20	"	"
Bridge DB, 'E-1' from SB - 'E'	I	7/.036	9	28	18	V.C.	"
Wheelhouse DB, 'E-2' from 'E'	I	7/.036	7	28	120	"	"
" " 'L-1' " SB - 'L'	I	7/.036	5	28	100	"	"
Navigating Bridge DB, 'L-2' "	I	7/.036	10	28	80	"	"
Upper Bridge " 'L-3' "	I	7/.036	15	28	14	"	"
Bridge Deck Port DB, 'H-1' off 'H'	I	7/.036	15	28	60	"	"
" " Star. " 'H-2' "	I	7/.036	15	28	30	"	"
Forecastle DB.	I	7/.036	5	28	200	"	L.C.A.B.
Gyro Compass Supply	I	7/.036	15	28	120	"	L.C.B.
W/T Supply	I	7/.064	20	80	120	"	"
Echo Sounding Supply	I	7/.036	10	28	120	"	"
Suez Canal Projector (wiring only)	I	7/.064	80	350		"	L.C.A.B.
Section Panels cont.							
Bridge Deck Section SB 'N'	I	7/.052	46	60	30	"	L.C.A.B.
Navigating Bridge Sect. SB 'Q'	I	7/.064	28	80	35	"	"
Mono Pumps Section Panel	I	7/.044	28	45	370	"	"

MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED.	No.	B.H.P.						
Boat Winch Motors	4	7.5	I	7/.064	52	80	av.140	V.C. L.C.B.
Poop Vent Fans	2	2.5	I	7/.052	26	60	2/80	" "
Engineers' Washing Machine	1	.75	I	7/.036	7	28	60	" "
Water Pump Motor	1	1	I	3/.036	7.5	10	280	V.I.R. "
Frig.Compressors	2	4	I	7/.044	34	45	2/30	V.C. "
Forced Draught Fan	1	7	I	7/.064	55	80	145	" "
Galley Supply Fan	1	.5	I	2/0.002	6	5	60	Pyrotanax
" Exhaust "	1	.5	I	2/0.002	6	5	90	" "
Pantry Exhaust Fan	1	.5	I	3/.036	6	10	80	V.I.R. L.C.B.
Midship Vent Fans	2	2.5	I	7/.052	26	60	60	V.C. "
Priming Pump Motor	1	1.5	I	7/.044	13	45	120	" L.C.A.B.
Crane Motor	1	3	I	7/.064	26	80	140	" "
Lathe Motor	1	3.5	I	7/.064	30	80	80	" "
Grinder Motor	1	2	I	7/.036	18	28	90	" "
Oil Purifiers	3	3	I	7/.044	26	45	av.180	" "
Engine Room Vent Fans	2	1.5	I	7/.044	16	45	2/170	" "
S.W.Cooling Pump Motor	1	3	I	7/.044	26	45	80	" "
F.W.Mono Pumps	2	1.5	I	7/.036	11.5	28	2/40	" "
Oil Purifier	1	3	I	7/.052	26	60	90	" "
ditto	1	5	I	7/.052	22	60	90	" "

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.

H. Munn Electrical Contractors. Date 17-3-51

COMPASSES.

Have the compasses been adjusted under working conditions. yes

W. Mansfield Builder's Signature. Date \_\_\_\_\_  
 Director.

Have the foregoing descriptions and schedules been verified and found correct. yes

Is this installation a duplicate of a previous case. yes If so, state name of vessel. m.v. "British Defender"

Plans. Are approved plans forwarded herewith. no If not, state date of approval. 4.4.50

Certificates. Are certificates of test for motors engaged on essential sea 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 pump Room lighting arrangements are in accordance with the Secretary's letter of 5.12.50. The electrical equipment of this vessel has been installed under special survey and with the above qualification, complies with the special requirements of Section 15 of the electrical rules. The arrangements in general principle accord with those shown on the approved plans. The materials and workmanship are good. On completion, satisfactory trials of the equipment were witnessed and the insulation resistance of all circuits was measured and found good. This equipment is in my opinion suitable for a classed vessel.

Noted sub 17/4/51

(2 x 75, 1 x 30)  
 Total Capacity of Generators 180 Kilowatts.

The amount of Fee ... £ 69. 0. 0 :  
 Travelling Expenses (if any) £ : :  
 When applied for, APR - 4 1951  
 When received, 19

B. W. Bram  
 Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRI. 20 APR 1951

Assigned Su F. E. Mchly. sp.

2m.9.40.—Transfer. (MADE AND PRINTED IN ENGLAND.)  
 (The Surveyors are requested not to write on or below the space for Committee's Minutes.)