

# REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office

AUG 1950

Date of writing Report 22.7.50 19 When handed in at Local Office JUL 28 1950 Port of Sunderland  
 No. in Survey held at Sunderland Date, First Survey 12.4.50 Last Survey 22.7.50 19  
 Reg. Book. (No. of Visits 17)  
 on the m.v. "BRITISH DEFENDER" Tons } Gross 6138  
 Net 3335  
 Built at Sunderland By whom built Wm. Doxford & Sons Ltd Yard No. 779 When built 1950  
 Owners British Tanker Co. 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 two-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 yes 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 6.5 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 desired

by metal or wooden 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 yes



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 main 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 ass approved installed in centrecastle

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

Searchlight Lamps, No. of - , 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...ZEP 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

E.S.D., if fitted state maker...Marconi Location of transmitter...Fwd end of E.Rm. and receiver...ditto

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.	75	110	681	500	Diesel	Mirrless, Bkton & Day
	1	" "	30	110	273	500	Steam	S.F.&Eng.Co.Ltd
EMERGENCY								
ROTAARY TRANSFORMER								

GENERATOR CABLES.

DESCRIPTION.	KILOWATTS.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX LENGTH (lead plus return feet).	INSULA-TION.	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	"	"
" " eq.	No.2... 75	2	37/.103	681	816	84	"	"
" " eq.	No.3... 30	1	37/.103		408	42	"	"
" " eq.		1	37/.083	273	314	120	"	"
" " eq.		1	37/.083		314	60	"	"
EMERGENCY GENERATOR								
ROTAARY 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	69	80	60	"	"	
Frig.Mchy. " " 'F'	I	7/.044	24	45	340	"	L.C.B.	
Aux.Switchboard Feeder(Radar & W/T)	I	37/.083	70	314	360	"	L.C.A.B.	
" " (Ltg & Power)	I	37/.083	155	314	360	"	"	
E.R.Switchboard Feeder	I	19/.083	128	202	60	"	"	
Navigating Bridge Section SB-'A'	I	7/.036	19	28	20	"	L.C.B.	
Bridge Deck Section Panel SB-'E'	I	7/.036	6	28	20	"	"	
Upper Bridge " " SB-'L'	I	7/.052	40	60	66	"	"	
Bridge Deck " " SB-'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).	INSULA-TION.	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 " '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' off SB 'E'	I	7/.036	9	28	18	V.C.	"
Wheelhouse DB, 'E-2' "	I	7/.036	7	28	120	"	"
" " 'L-1' from SB 'L'	I	7/.036	5	28	100	"	"
Navigation Bridge DB, 'L-2' "	I	7/.036	10	28	80	"	"
Upper Bridge DB, '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	"	E.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.
Radar Supply	I	7/.064	45	80	60	"	L.C.B.
Section Panels cont.							
Bridge Deck Section SB-'N'	I	7/.052	46	60	30	"	"
Navigating Bridge SB-'Q'	I	7/.064	28	80	35	"	"
Mono Pumps Section	I	7/.044	23	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	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	PIROTEXAX
" Exh. "	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	180	" "
Engine Room Vent Fans	2	1.5	I	7/.044	16	45	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	42	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.

PER *Thomas Head*

Electrical Contractors.

Date *22 July 1950*

COMPASSES.

Have the compasses been adjusted under working conditions... yes

WILLIAM DOXFORD & SONS, LIMITED.

*J. Ramsay Gibbs*  
 Managing Director

Builder's Signature.

Date *25 July 1950*

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

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

Plans. Are approved plans forwarded herewith... no If not, state date of approval... 4.4.1950

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 electrical equipment of this vessel has been installed under special survey in accordance with the approved plans and the special requirements of Section 15 of the "Rules For Electrical Equipment". 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 vessel bearing the Society's class.

*Noted sub 16/8/50*

(2 x 75, 1 x 30) 180 ✓ Kilowatts.

The amount of Fee ... £ 67 : 0 : When applied for, JUL 31 1950

Travelling Expenses (if any) £ : : When received, 19

*A. D. Mann*  
 Surveyor to Lloyd's Register of Shipping.

Committee's Minute... FRI. 25 AUG 1950

Assigned... *See minute on F.S. Rpt.*

2m 9.46. Transfer. (MADE AND PRINTED IN ENGLAND.)  
 (The Surveyors are requested not to write on or below the space for Committee's Minute.)



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