

Rpt. 13.

No. 35390

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

EN AUG 1950

Received at London Office

Sunderland

Date of writing Report 22.7.50

When handed in at Local Office

JUL 28 1950

Port of

No. in Survey held at Sunderland

Date, First Survey 12.4.50

Last Survey 22.7.50

Reg. Book.

(No. of Visits 17)

Tons } Gross 6138
Net 3335

on the m.v. "BRITISH DEFENDER"

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 lbs. 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



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Lloyd's Register

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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 are approved installed in centre-castles 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...Pwd 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	Mirrlees, Blkton & Day
	1	" "	30	110	273	500	Steam	S.F. & Eng. Co. Ltd
EMERGENCY								
ROTARY TRANSFORMER								

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	2	37/.103	681	816	60	V.C.	L.C.A.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	69	✓	80	60	"	"
Frig. Mch. " " '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).	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 " '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	"	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.
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	PIROTEX	"
" 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

Electrical Contractors.

Date

22 July 1950

COMPASSES.

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

WILLIAM DOXFORD & SONS, LIMITED.

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

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

The amount of Fee ... £ 67 : 0 :

When applied for, JUL 31 1950

When received, 19

Travelling Expenses (if any) £

Surveyor to Lloyd's Register of Shipping.

Committee's Minute

FRI. 25 AUG 1950

Assigned

See minute on 4.5 Rpt.