

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office... 29 AUG 1946

Date of writing Report. 14-8-46 When handed in at Local Office. 20-9-46 Port of Sunderland

No. in Survey held at Sunderland Date, First Survey 4-6-46 Last Survey 12-8-46
Reg. Book. M/V. "BRITISH PRINCESS" (Number of Visits...)

85854 on the BRITISH PRINCESS Tons Gross 8583 Net 4918

Built at Sunderland By whom built Sir James Laing & Sons Ltd Card No. 768 When built 1946

Owners British Tanker Co. Ltd Port belonging to London

Electrical Installation fitted by Sunderland Forge & Eng. Co. Ltd Contract No. 768 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. RADAR - 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 Nos. 1 & 2. E. Rm 7th. on Trised stools. No. 3. on Trised

Stal & A. Stalwick, 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 angle framework above Nos. 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. Wray "Sunderland" 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

part per equation) air-break circuit-breaker, fitted with 4 1/2 time lag, & R/D circuit

tripping devices.

and for each outgoing circuit. a double-pole quick-break, double-throw knife 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 coupled to E through bus & 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. 50% - 10,000.

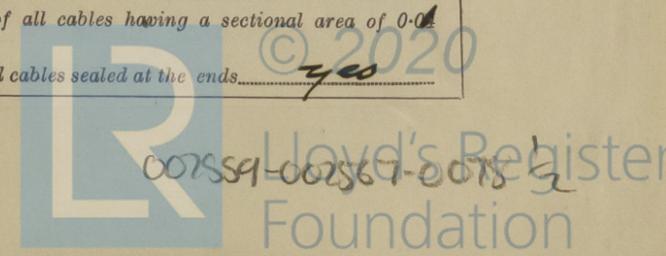
protection devices connected on the pole opposite to the equaliser connection. Yes, have they been tested under working conditions, and at what current

did they operate. 10% 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. > 60, are the ends of all cables having a sectional area of 0.0

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. no, if so, are they adequately protected. — Are cables in machinery spaces, galleys, laundries, etc., lead covered. yes or run in conduit. — State how the cables are supported and protected. in machinery spaces, along deck gangways, & galleys, N.E. L.L.R.T.B. cables fastened to the surface with galvanised clips; in accommodation L.C. cables clipped to the surface and protected by wood or metal guards.

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 effectively 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. 8.25V light house in machinery spaces. and method of control. Relay with 70-100V relay operating on failure of main supply or B.R. fuse. 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 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 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. Wegon flameproof lighting fittings as approved installed in combustible and where 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. — 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	273	680	Single Cylinder Vertical		
EMERGENCY						Steam Engines		
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	273	296	50	V.C.	L.C.A.B.
" " EQUALISE		1	19/083	—	191	25	"	"
" " No. 2 30		1	37/083	273	296	62	"	"
" " Equaliser		1	19/083	—	191	31	"	"
" " No. 3 30		1	37/083	273	296	74	"	"
" " Equaliser		1	19/083	—	191	37	"	"
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 ...							
Section Board - Mainship Lighting	1	37/072	70	246	516	V.C.	L.C.A.B.
" " " " Power	1	19/064	54	135	516	"	"
" " " " Off Power	1	19/064	80	135	216	"	"
" " " " Lighting	1	19/044	55	87	216	"	"
" " " " Mainship Power	1	7/064	45	75	138	"	"
" " " " Oil Purifier	1	7/064	52	75	108	"	"

LIGHTING AND HEATING, ETC., CABLES.

DESCRIPTION	No.	CONDUCTORS	MAXIMUM CURRENT	APPROX. LENGTH	INSULATED WITH	HOW PROTECTED
WIRELESS	1	19/064	10	135	654	V.C. L.C.A.B.
NAVIGATION LIGHTS (D.A.I.)	1	19/064	15	135	654	" "
Emergency Lighting	1	7/036	17	24	46	V.C. L.C.B.
Emergency Alarm DR-5 - Off S.B.P. - Main	1	7/044	22.6	31	52	" "
Large DB. DA-6	1	7/036	19.6	24	84	" "
Emergency Alarm DR-4 - " Port	1	7/044	25	31	90	" "
Officer Alarm DA-3	1	7/036	12	24	104	" "
Large DB. DA-2	1	7/064	46	46	120	" L.C.A.B.
Officer Alarm DA-1	1	7/044	40	46	150	" L.C.B.
Officer Alarm DA-6	1	3/036	1.8	10	90	" L.C.A.B.
Officer Alarm DA-1	1	7/036	21.8	24	110	" L.C.B.
" " " " 2	1	7/036	23.4	24	84	" "
" " " " 3	1	7/036	17.5	24	102	" "
" " " " 4	1	7/036	23.5	24	66	" "
Alarm Connection	1	37/083	—	296	150	" L.C.A.B.
Officer Alarm DA-6	1	19/064	54	135	660	" "
Officer Alarm DA-6	1	7/064	40	46	144	" L.C.A.B.

MOTOR CABLES.

DESCRIPTION	No.	B.H.P.	CONDUCTORS	MAXIMUM CURRENT	APPROX. LENGTH	INSULATED WITH	HOW PROTECTED
Brook Wrench No. 1 - Port	1	2	7/036	18	24	144	V.C. L.C.B.
" " " " 2 - Star	1	2	7/036	18	24	84	" "
" " " " 3 - P. off	1	2	7/036	18	24	84	" "
" " " " 4 - S. off	1	2	7/036	18	24	144	" "
Stokehold No. 1 - Port	1	3	7/044	26	31	90	" "
" " " " 2 - Star	1	3	7/044	26	31	42	" "
" " " " 3 - P. off	1	3	7/044	26	31	84	" "
" " " " 4 - S. off	1	3	7/044	26	31	144	" "
Supply Fan	1	1.5	7/036	16	24	104	" "
Mechanical Fan No. 1 - Main	1	2	3/036	2.5	10	132	" "
" " " " 2 - Galley	1	1.5	3/036	10	10	90	" "
" " " " 3	1	2	3/036	2.5	10	90	" "
" " " " 4 - Mainship	1	2	3/036	2.5	10	86	" "
Wastehold Motor	1	4	7/044	35	31	54	" L.C.A.B.
4" motor	1	1	7/029	10	15	64	" "
6" pump	1	3	7/044	26	31	114	" "
Oil Purifier No. 1 - Off O.P. S.A.	1	3	7/044	26	31	42	" "
" " " " 2	1	3	7/044	26	31	54	" "
Fuel Priming Pump	1	1.5	7/036	16	24	192	" "
Air Conditioning plant	1	1.5	7/036	16	24	54	" L.C.B.

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.

Sunderland Forge & Co Ltd. Electrical Engineers. Date *16. 8. 1946*
H. J. Currier

COMPASSES.

Minimum distance between electric generators or motors and standard compass *22'*

Minimum distance between electric generators or motors and steering compass *12'*

The nearest cables to the compasses are as follows:—

A cable carrying *.15* Ampères *10* feet from standard compass *on the* feet from steering compass.

A cable carrying *.15* Ampères *on the* feet from standard compass *10* 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 *2 1/2* degrees on *Wray* course in the case of the standard compass, and *2 1/2* degrees on *Wray* course in the case of the steering compass.

ED JAMES & SONS LIMITED Builder's Signature. Date _____

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 *8.5.46*

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 requirements of the Rules, and complies with the 1939-40 "Rules for Electrical Equipment". The materials used are of good quality and design and the workmanship is good; on 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.

Noted
L. J.
4/9/46

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

The amount of Fee ... £ *31. 10. 0.* When applied for, *20 AUG 1946*

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

B. S. Ward
 Surveyor to Lloyd's Register of Shipping.

FRI. 13 SEP 1946

Committee's Minute _____
 Assigned *For memo see FE. Welch Rpt*

5m. 4.30. Transfer. (MADE AND PRINTED IN ENGLAND.) (The Surveyors are requested not to write on or below the space for Committee's Minute.)