

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

16 DEC 1946

Received at London Office.

Date of writing Report 31st Oct., 1946 When handed in at Local Office 31st Oct., 1946 Port of Vancouver, B. C.

No. in Survey held at Vancouver, B. C. Date, First Survey 11 July, 1946 Last Survey 16th Oct. 1946

Reg. Book. (Number of Visits 30)

on the S.S. "RABAU" ex H.M.S. "OXFORDNESS" Tons { Gross 7349
Net 4577

Built at Vancouver, B. C. By whom built West Coast Shipbuilders Ltd. Yard No. 163 When built 1946

Owners W.R. Carpenter (Canada) Ltd. Port belonging to Suva, Fiji Islands.

Electric Light Installation fitted by West Coast Shipbuilders Ltd. Contract No. 163 When fitted 1946

Is the Vessel fitted for carrying Petroleum in bulk No

System of Distribution Two wire direct

Pressure of supply for Lighting 225 volts, Heating - volts, Power 225 volts,

Direct or Alternating Current, Lighting Direct Power Direct

If alternating current system, state frequency of periods per second -

Has the Automatic Governor been tested and found efficient when the whole load is suddenly thrown on or off Yes

Generators, do they comply with the requirements regarding temperature rise Yes, are they compound wound Shunt wound

are they over compounded 5 per cent. No, if not compound wound state distance between each generator 6'-5" Centre to centre

Where more than one generator is fitted are they arranged to run in parallel Yes, if required, is an adjustable regulating resistance fitted in series with each shunt field Yes

Have certificates of test results for machines under 100 kw. been submitted and approved Royal Navy Have machines over 100 kw. been inspected by the Surveyors during manufacture and testing British Corporation tested

Are all terminals accessible, clearly marked, and furnished with sockets Yes, are they so spaced or shielded that they cannot be accidentally earthed, short circuited, or touched Yes

Are the lubricating arrangements of the generators as per Rule Yes (Forced)

Position of Generators On flat on starboard side of engine room, is the ventilation in way of the generators satisfactory Yes

are they clear of all inflammable material Yes, if situated near unprotected

woodwork or other combustible material, state distance of same horizontally from or vertically above the generators None and -

are the generators protected from mechanical injury and damage from water, steam or oil Yes, are their axes of rotation fore and aft Yes

Earthing, are the bedplates and frames of the generating plant efficiently earthed Yes, are the prime movers and their respective generators in metallic contact Yes

Main Switch Boards, where placed Near generators in engine room

If the generators and main switchboard are not placed in the same compartment, is each generator provided with a fuse on each insulated pole as near as possible to the terminals of the generator, additional to that provided on the main switchboard -

Switchboards, are they placed in accessible positions, free from inflammable gases and acid fumes Yes, are they protected from mechanical injury and damage from water, steam or oil Yes

if situated near unprotected woodwork or other combustible material, state distance of same horizontally from or vertically above the switchboards None and -

are they constructed wholly of durable, non-ignitable non-absorbent materials Yes, is all insulation of high dielectric strength and of permanently high insulation resistance Yes

is it of an approved type Yes, if semi-insulating material is used, are all conducting parts insulated from the slab with mica or micanite or other non-hygroscopic insulating material, and the slab similarly insulated from its framework Yes, is the non-hygroscopic insulating material of an approved type Yes

and is the frame effectively earthed Yes, Are the fittings as per Rule regarding:—spacing or shielding of live parts Yes

accessibility of all parts Satisfactory, absence of fuses on back of board Yes, temperature rise of omnibus bars Less than 1°C, individual fuses to voltmeter, pilot or earth lamp Yes

are moving parts of switches alive in the "off" position No, are all screws and nuts securing connections effectively locked Yes

are any fuses fitted on the live side of switches No

Main Switchgear, description of switchgear for each generator and each outgoing circuit, and arrangement of equalizer switches

D.P. linked switch, D.P. circuit breaker with overload trip on each pole & reverse current trip for each generator

Are turbine driven generators fitted with emergency trip switch as per rule Yes, Are cupboards or compartments containing switchboards composed of fire-resisting material or lined with approved material Yes

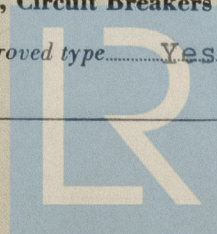
Instruments on main switchboard 2 ammeters 3 volt-
meters 1 voltmeter with selector switch

No synchronizing device for paralleling purposes/For compound machines is the ammeter connected on the opposite pole to equalizer connection

No equalizer connection Earth Testing, state what means are provided at the main switchboard for indicating the state of the insulation of the system

Double lamps & switches with fuses on each pole Switches, Circuit Breakers and Fusible Cut-outs, do these comply with the requirements of the Rules Yes

are the fusible cutouts of an approved type Yes, have the reversed



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current protection devices been tested under working conditions. **Yes** Joint Boxes, Section and Distribution Boards, is the construction, protection, insulation, material, and position of these as per rule. **Yes**

Cables: Single, twin, concentric, or multicore. **Yes** are the cables insulated and protected as per Tables IV, V, X or XI of the Rules. **Yes**

If the cables are insulated otherwise than as per Rule, are they of an approved type. **Yes** Fall of Pressure, state maximum between bus bars and any point of the installation under maximum load. **2.8 max** Cable Sockets, are the ends of all cables having a sectional area of 0.04 square inch and above provided with soldering sockets. **yes** Paper Insulated and Varnished Cambric Insulated Cables.

If conductors are paper or varnished cambric insulated, is the dielectric at the exposed ends of the conductor protected from moisture by being suitably sealed with insulating compound. **Yes**, or waterproof insulating tape. **Yes** Cable Runs, are the cables fixed as far as possible in accessible positions not exposed to drip or accumulation of water or oil, or to high temperature from boilers, steam pipes, uptakes or other hot objects, or to avoidable risk of mechanical damage. **Yes** Are cables in machinery spaces, galleys, laundries, bathrooms and lavatories lead covered or run in conduit. **conduit**

Support and Protection of Cables, state how the cables are supported and protected. **Perforated metal trays in E.R. passages**

conduit in holds & where exposed to weather & mechanical injury. **Wood casings in accomodation & Alleyway**

If cables are run in wood casings, are the casings and caps secured by screws. **Yes**, are the cap screws of brass. **Yes**, are the cables run in separate grooves. **L.C. & Grouped**. If armoured and lead covered cables are secured by metal clips, are the clips spaced as per Table **Yes**

Refrigerated Chambers, are the cables and fittings in accordance with the special requirements. **No cables fitted in cargo chambers**

Joints in Cables, state if any, and how made, insulated, and protected. **Terminal boxes for telephones only**

Watertight Glands and Deck Tubes, are all cables passing through decks and watertight bulkheads provided with deck tubes or watertight glands. **Yes** Bushes in Beams and Non-watertight Partitions, where unarmoured cables pass through beams and non-watertight partitions, are the holes efficiently bushed. **Yes** state the material of which the bushes are made. **sheet lead**

Earthing Connections, state what earthing connections are fitted and their respective sectional areas. **Lead sheathed cables on perforated steel trays, all earthed.**

are their connections made as per Rule. **Yes**

Alternative Lighting, are the groups of lights in the propelling machinery space arranged as per Rule. **Yes** Emergency Supply, state position and method of control of the emergency supply and how the generator is driven. **None fitted**

Navigation Lamps, are these separately wired. **Yes** controlled by separate switch and separate fuses. **Yes** are the fuses double pole. **Yes** are the switches and fuses grouped in a position accessible only to the officers on watch. **Yes in wheelhouse**

has each navigation lamp an automatic indicator as per Rule. **Yes** Secondary Batteries, are they constructed and fitted as per Rule. **None**

Fittings, are all fittings on weather decks, in stokeholds and engine rooms and wherever exposed to drip or condensed moisture, watertight. **Yes**

are any fittings placed in spaces in which goods are liable to be stacked in close proximity to them; if so, how are they protected. **In store room**

lamps protected by gas tight globes & heavy metal guards

are any fittings placed in spaces where inflammable or explosive dust or gases are liable to be present, if so, how are they protected. **None**

how are the cables led

where are the controlling switches situated.

are all fittings suitably ventilated. **Yes** are all switches and lampholders constructed wholly of non-ignitable, non-absorbent materials. **Yes**

Heating and Cooking Appliances, are they constructed and fitted as per Rule. **None** are air heaters constructed and fitted as per Rule.

Searchlight Lamps, No. of **None** whether fixed or portable. **None** are their fittings as per Rule.

Arc Lamps, other than searchlight lamps, No. of **None** are their live parts insulated from the frame or case. **None** are their fittings as per Rule.

Motors, are their working parts readily accessible. **Yes** are the coils self-contained and readily removable for replacement. **Yes** are the brushes, brush holders, terminals and lubricating arrangements as per Rule. **Yes** are the motors placed in well-ventilated compartments in which inflammable gases cannot accumulate and clear of all inflammable material. **Yes** are they protected from mechanical injury and damage from water, steam or oil. **Yes** are their axes of rotation fore and aft. **Yes** if situated near unprotected woodwork or other combustible material, are the motors of the totally enclosed, pipe ventilated, forced draught, drip or flame proof type. **totally enclosed in E.R.**

Drip proof in if not of this type, state distance of the combustible material horizontally or vertically above the motors. **None** and

Refrig. Rm. have machines of over 100 BPH been inspected by the Surveyors during manufacture and testing. **Navy Control Gear and Resistances**, are the generator approved

field and motor speed regulators, starters and controllers constructed and fitted as per Rule. **Yes** Lightning Conductors, where lightning conductors are required, are these fitted as per Rule. **None** Ships carrying Oil having a Flash Point less than 150°F. Have the special requirements of the Rules been complied with regarding switches, joint boxes, section and distribution boards, protection of cables, method of distribution, lead of cables, lights and fittings. **Std. Economy fuses fitted** are all fuses of the filled cartridge type. **are they of an approved type. Yes**

If portable lamps for use in dangerous spaces are supplied, are they of a self-contained, battery-fed type approved by the Home Office. **Yes**

Spare Gear, if the vessel is for open sea service have spares been supplied as per Rule. **Yes**

PARTICULARS OF GENERATING PLANT.										
DESCRIPTION OF GENERATOR.	No. of	RATED AT				DRIVEN BY	WHERE DRIVEN BY AN INTERNAL COMBUSTION ENGINE.			
		Kilowatts.	Volts.	Amperes.	Revs. per Min.		Fuel Used.	Flash Point of Fuel.		
MAIN	2	120	225	534	-	Steam Turbine & reduction gear	-	-		
AUXILIARY ...										
EMERGENCY ...										
ROTARY TRANSFORMER										
GENERATOR, LIGHTING AND HEATING CONDUCTORS. L.C. = Lead covered										
DESCRIPTION.	CONDUCTORS.		COMPOSITION OF STRAND.		TOTAL MAXIMUM CURRENT. AMPERES.		Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED	
	No. per Pole.	Total Nominal Area per Pole Sq. Ins.	No.	Diameter.	Circuit.	Rule.				
MAIN GENERATOR	1	1.00	127	.103	540	932 ✓	35	Var. Cam.	L.C. Metal conduit	
E. R. Power P.1	1	.06	19	.064	58.7	83 ✓	50	Rubber	L.C. Metal tray	
Ref. Mach. P.2	1	.4	61	.093	210.6	288 ✓	120	"	" "	
Emergency Generator	1	.01	7	.044	10	31 ✓	215	"	" "	
Cyrc. compass	1	.003	3	.036				"	Wood casing	
Cabins & Saloons, Mostly	1	.01	7	.044	12	42 31	230-0	Rubber	L.C. Metal tray	
Rotary Transformer (Generator...)	1	.06	19	.064	23	83 ✓	30	"	" "	
ENGINE ROOM & Blr. Rm.	1	.0045	7	.029	3	15 ✓	215	"	" "	
Boiler Room Nav. Panel	1	.0045	7	.029	3	15 ✓	20-0	"	" "	
Nav. Panel additional	1	.007	7	.036	6	24 ✓	140	"	" "	
Auxiliary Switchboards	1	.007	7	.036	8.7	24 ✓	230	"	" "	
Aft Mast Hse. L.5	1	.01	7	.044	10.7	31 ✓	180	"	" "	
Fore " " L.3	1	.10	19	.083	37	118 ✓	50	"	wood casing	
Crew space aft L.4	1	.007	7	.036	11.2	24 ✓	50	"	" "	
Accommodation L.2	1	.007	7	.036	4	24 ✓	200	"	Metal tray	
St. Alley and Dc. L.2 D.4	1	.007	7	.036	6.9	24 ✓	85	"	Wood casing	
Chart Rm. L.2 D.5	1	.007	7	.036	6.7	24 ✓	10	"	Metal tray	
Accommodation " " L.2 D.1	1	.007	7	.036	- 8.2	24 ✓	10	"	" "	
Port Alley L.2 D.3	1	.06	19	.064	44	83 ✓	50	"	" "	
Star. Alley L.2 D.2	1	.0225	7	.064	11.4	46 ✓	210	Rubber	L.C. Metal tray	
" " L.2 D.1	1	.007	7	.036	8.5	24 ✓	26	"	" "	
Accommodation L.1	1	.0032	3	.036	.2	10 ✓	300	Rubber	L.C. Metal conduit.	
Wireless P.S. Upp. Dk. L.1 D.5	1	.003	3	.036	.2	10 ✓	25	"	Metal tray	
SEARCHLIGHT	1	.003	3	.036	.1	10 ✓	15	"	" "	
MASTHEAD LIGHT	1	.007	7	.036	5.7	24 ✓	25	"	" "	
SIDE LIGHTS	1	.007	7	.036	6.8	24 ✓	140	"	" "	
COMPASS LIGHTS	1	.007	7	.036	8.1	24 ✓	10	"	" "	
S. S. Upp. Dk. L.1 D.4	1	.007	7	.036	9.7	24 ✓	20	"	" "	
COCKPIT LIGHTS	1	.007	7	.036				"	" "	
P. S. Upp. Dk. L.1 D.3	1	.007	7	.036				"	" "	
ARC LAMP	1	.007	7	.036				"	" "	
P. S. Upp. Dk. L.1 D.2	1	.007	7	.036				"	" "	
HEADERS	1	.007	7	.036				"	" "	
MOTOR CONDUCTORS.										
DESCRIPTION.	No. of Motors.	CONDUCTORS.		COMPOSITION OF STRAND.		TOTAL MAXIMUM CURRENT. AMPERES.		Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED
		No. per Pole.	Total Nominal Area per Pole Sq. Ins.	No.	Diameter.	In Circuit.	Rule.			
BALLAST PUMP										
MAIN BILGE LINE PUMPS										
GENERAL SERVICE PUMP										
EMERGENCY BILGE PUMP										
SANITARY PUMP Distiller	1	1	.01	7	.044	2	31 ✓	50	Rubber	L.C. in conduit
Refrig. Circ. SEA WATER PUMPS	2	1	.0081	7	.038	12.3	18.4 ✓	20	Rubber	L.C. Metal tray
Gen. FRESH WATER PUMPS	2	1	.0081	7	.038	6.3	18.4	20	"	" "
AIR COMPRESSOR										
Gen. Cooling FRESH WATER PUMP	1	1	.01	7	.044	2	31 ✓	10	"	In conduit
ENGINE TURNING GEAR										
ENGINE REVERSING GEAR										
LUBRICATING OIL PUMPS										
OIL FUEL TRANSFER PUMP										
WINDLASS										
WINCHES, FORWARD										
WINCHES, AFT										
STEERING GEAR—										
(a) MOTOR GENERATOR										
(b) MAIN MOTOR										
WORKSHOP MOTORS	1	1	.10	19	.083	15	118 ✓	30	Rubber	L.C. Metal tray
VENTILATING FANS E.E.	1	1	.0051	7	.030	4	16 ✓	50	"	L.C. in conduit
Refrig. Compressors	2	1	.1045	19	.083	93	133 1/2 ✓	20	Var. Cam.	L.C. metal tray
" Brine Pumps	2	1	.0081	7	.038	12.3	18.4 ✓	15	Rubber	" " "

All Conductors are of annealed copper conforming to British Standard Specification No. 7 (or International Electro-technical Commission Publication No. 28).

The Insulated Conductors are guaranteed to withstand the immersion and resistance tests specified in the Rules.

The foregoing is a correct description.

J. O. H. H. H.
WEST COAST SHIPBUILDERS LTD.

Electrical Engineers.

Date Nov 13/46

COMPASSES.

Distance between electric generators or motors and standard compass One 20'-0" (Wireless alternator)

Distance between electric generators or motors and steering compass " " " "

The nearest cables to the compasses are as follows:—

A cable carrying 3 Ampères 10 feet from standard compass 8 feet from steering compass.

A cable carrying 25 Ampères 5 feet from standard compass 8 feet from steering compass.

A cable carrying 3 Ampères 7 feet from standard compass 3 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 All course in the case of the standard compass, and Nil degrees on All course in the case of the steering compass.

J. O. H. H. H.
WEST COAST SHIPBUILDERS LTD.
Builder's Signature.

Date Nov 13/46

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

General Remarks (State quality of workmanship, opinions as to class, &c. The electrical equipment of this ship has been installed under Special Survey in accordance with the approved plans, New York letters & otherwise in conformity with the Society's Rules. The materials & workmanship are good & the full load tests required by the Rules have been carried out satisfactorily. Satisfactory heat tests, governor tests & 25% overload test for two hours were carried out on the generators. Turbine and generator test certificates applied for, but so far have not yet been received. The generators were made by General Electric Co., Canada, tested by British Corporation and marked as follows:—

In board	Outboard
B.C. T11896	B. C. T11889
L.P.M. 27 - 3 - 45	A.S.H. 8 - 3 - 45
350576	350514

The turbo gear unit is a product of the Worthington Pump & Machinery Corp., U.S.A. These machines were intended for a Royal Navy Transport Ferry and acquired from War Assets Corporation by the present Owner. Almost all cables used are of the Admiralty Pattern and tests.

This case is eligible, in my opinion, to have the Society's Classification without restriction.

As fitted Plan of the installation forwarded herewith.

Total Capacity of Generators 240 Kilowatts.

The amount of Fee ... \$110.00 *
Alterations & Additions \$160.00 *
Traveling Expenses (if any) \$22.00 *
Completion Elec. S.S. 15.00 *
When applied for, 5 Dec. 1945 *
When received, 17 Oct. 46 *
21 Dec. 1945 * (\$132.00)

J. O. H. H. H.
Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRL 10 JAN 1947

Assigned Sir macy F.E. opt



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