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knob. Rpt.
No. 6906

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office 12 SEP 1946

Date of writing Report 17th August 46 When handed in at Local Office 19th August 46 Port of QUEBEC
No. in Survey held at QUEBEC, P.Q. Date, First Survey 20th March Last Survey 29th June 1946
Reg. Book. (Number of Visits Constant attendance
on the STEEL SINGLE SCREW "Q" TYPE COASTER "OTTAWA MAYCLIFF" Tons { Gross 337.94
Net 124.47
Built at QUEBEC, P.Q. By whom built MORTON ENGINEERING & Yard No. 66 When built 1946
Owners DOMINION OF CANADA. DRY DOCK CO. LTD.
Port belonging to
Electric Light Installation fitted by BEDARD & GIRARD Contract No. 10134 When fitted 1946
Is the Vessel fitted for carrying Petroleum in bulk NO

System of Distribution Twin Wire
Pressure of supply for Lighting 110 volts, Heating - volts, Power - volts.
Direct or Alternating Current, Lighting D.C. Power -
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 YES
are they over compounded 5 per cent. Yes, if not compound wound state distance between each generator --
Where more than one generator is fitted are they arranged to run in parallel --, 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 Yes Have machines over 100 kw. been inspected by the Surveyors during manufacture and testing --
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
Position of Generators Starbd. side in Engine Room, bottom platform, 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 - 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 Starbd. Side Engine Room near Generator on bottom platform 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 - 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 - is the non-hygroscopic insulating material of an approved type - 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 Yes, absence of fuses on back of board Yes, temperature rise of omnibus bars Yes, 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 250 Amp. triple pole air circuit breaker with I.T.L. overload one low voltage release and one reverse current trip. 60 AMP - D.P.S.T. and 4 - 30 AMP D.P.S.T.
Are turbine driven generators fitted with emergency trip switch as per rule - Are cupboards or compartments containing switchboards composed of fire-resisting material or lined with approved material - Instruments on main switchboard Two ammeters One volt-meters One synchronising device for paralleling purposes. For compound machines is the ammeter connected on the opposite pole to equaliser connection
Earth Testing, state what means are provided at the main switchboard for indicating the state of the insulation of the system
Lamps 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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Lloyd's Register
Foundation

current protection devices been tested under working conditions **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 **Single** 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 **Fall of Pressure**, state maximum between bus bars and any point of the installation under maximum load **3%** **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 or waterproof insulating tape **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 **Conduit in Engine Room & holds, lead covered in accommodation, all suitably clipped.**

If cables are run in wood casings, are the casings and caps secured by screws are the cap screws of brass **XI** are the cables run in separate grooves If armoured and lead covered cables are secured by metal clips, are the clips spaced as per Table **XXI**

Refrigerated Chambers, are the cables and fittings in accordance with the special requirements

Joints in Cables, state if any, and how made, insulated, and protected **Junction boxes**

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 **Lead.**

Earthing Connections, state what earthing connections are fitted and their respective sectional areas **Frame welded to hull**

No. 10 cable to frame

..... 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

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**

has each navigation lamp an automatic indicator as per Rule **Yes** **Secondary Batteries**, are they constructed and fitted as per Rule

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

are any fittings placed in spaces where inflammable or explosive dust or gases are liable to be present, if so, how are they protected

..... how are the cables led

where are the controlling switches situated

are all fittings suitably ventilated 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 are air heaters constructed and fitted as per Rule

Searchlight Lamps, No. of whether fixed or portable are their fittings as per Rule

Arc Lamps, other than searchlight lamps, No. of are their live parts insulated from the frame or case 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 they protected from mechanical injury and damage from inflammable gases cannot accumulate and clear of all inflammable material 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

..... if not of this type, state distance of the combustible material horizontally or vertically above the motors and

have machines of over 100 BHP been inspected by the Surveyors during manufacture and testing **Control Gear and Resistances**, are the generator 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 **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 are all fuses of the filled cartridge type are they of an approved type

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

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

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	1	15	110	132	575	Vertical Steam Engine	-	-
AUXILIARY	-			136				
EMERGENCY	-							
ROTARY TRANSFORMER	-							

GENERATOR, LIGHTING AND HEATING CONDUCTORS.

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	.1660	19	.1055	109.5	164	44	R.C.D.B.	Conduit
EQUALISER CONNECTIONS	-								
AUXILIARY GENERATOR	-								
EMERGENCY GENERATOR... ..	-								
ROTARY TRANSFORMER { MOTOR	-								
GENERATOR... ..	-								
ENGINE ROOM Circuits 3.	1	.0030	7	.0242	9.5	12.9	240	R.C.D.B.	Conduit
BOILER ROOM Circuits 2.	1	.0030	7	.0242	6.4	12.9	240	R.C.D.B.	Conduit
AUXILIARY SWITCHBOARDS ...									
1-6way E.R. & B.R.	1	.0060	7	.0385	15.9	26.4	20	R.C.D.B.	Conduit
1-8way Accom.	1	.0130	7	.0486	25	34.8	80	R.C.D.B.	Conduit
1-6way Ventilation	1	.0205	7	.0612	36	43.3	120	R.C.D.B.	Conduit
1-8way Cargo Lights	1	.0130	7	.0486	28.5	34.8	100	R.C.D.B.	Conduit
1-5way Nav. Lights	1	.0030	7	.0242	1.8	12.9	100	R.C.D.B.	Conduit
ACCOMMODATION Branch...									
Circuits Officers	1	.0030	7	.0242	4.00	12.9	300	R.I.L.C.	
" Crew	1	.0030	7	.0242	4.00	12.9	300	D.B.R.C.	Conduit
WIRELESS	-								
SEARCHLIGHT	-								
MASTHEAD LIGHT	1	.0030	7	.0242	.45	12.9	240	R.C.D.B.	Conduit
SIDE LIGHTS ... each...	1	.0030	7	.0242	.45	12.9	20	R.I.L.C.	
COMPASS LIGHTS	1	.0030	7	.0242	.45	12.9	12	R.I.L.C.	
Deck Lights	1	.0030	7	.0242	.45	12.9	180	R.C.D.B.	Conduit
CARGO LIGHTS Circuits 8.	1	.0030	7	.0242	4.3	12.9	200	R.C.D.B.	Conduit
Accommodation Flood Lights	1	.0030	7	.0242	5.4	12.9	300	R.C.D.B.	Conduit
HEATERS	-								

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										
CIRC. SEA WATER PUMPS ...										
CIRC. FRESH WATER PUMPS...										
AIR COMPRESSOR										
FRESH WATER PUMP										
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 MOTOR... ..										
VENTILATING FANS	5	1	.0050	7	.0305	6.3	19.6	80	R.C.D.B.	Conduit
Frig. Motor 1/2 HP	1	1	.0050	7	.0305	4.2	19.6	160	R.C.D.B.	Conduit

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.

Bedard - Grant Ltd
Fred Grant

Electrical Engineers.

Date *Aug 23/46*

COMPASSES.

Distance between electric generators or motors and standard compass

Distance between electric generators or motors and steering compass

The nearest cables to the compasses are as follows:—

A cable carrying 45 Ampères feet from standard compass 6 feet from steering compass.

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

MORTON ENGINEERING & DRY DOCK CO. LTD.

Fred P. Grant Builder's Signature.

Date *Aug 23rd/46*

Is this installation a duplicate of a previous case YES If so, state name of vessel "OTTAWA MAYCREST"

General Remarks (State quality of workmanship, opinions as to class, &c. The Electrical installation has been

fitted aboard this Vessel under Special Survey and in accordance with approved plans and specifications and has been satisfactorily tested under full working conditions.

Megger tested throughout and found in good order.

The workmanship & materials are good & sound.

Noted from 3.10.46

Total Capacity of Generators 15 Kilowatts.

The amount of Fee ... £ 75⁰⁰ : When applied for, *Aug 29 1946*

Travelling Expenses (if any) £ 10⁰⁰ : When received. 19

S. Halkett
Surveyor to Lloyd's Register of Shipping.

Committee's Minute **FRI. 16 JAN 1946**

Assigned