

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office.

11 OCT 1945

Date of writing Report 18th. Aug 1945 When handed in at Local Office 21st. August, 45 Port of QUEBEC, P.Q.
 No. in Survey held at LAUZON, P.Q. Date, First Survey 26 March 45 Last Survey 10 August 1945
 Reg. Book. (Number of Visits) Daily Attendance
 -- on the TWIN SCREW TRANSPORT FERRY H.M.S.-LST(3) 3512 Tons { Gross 4290.74
 Net 2430.45
 Built at LAUZON, P.Q. By whom built DAVIE SHIPBUILDING & REPAIRING CO. LTD. Yard No. 567 When built 1945
 Owners BRITISH ADMIRALTY Port belonging to --
 Electric Light Installation fitted by DAVIE SHIPBUILDING & REPAIRING CO. LTD. Contract No. 567 When fitted 1945
 Is the Vessel fitted for carrying Petroleum in bulk NO

System of Distribution TWO WIRE
 Pressure of supply for Lighting 220 volts, Heating 220 volts, Power 220 volts,
 Direct or Alternating Current, Lighting DIRECT CURRENT Power DIRECT CURRENT
 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 Yes, 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 Yes
 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 Two, 120 KW Turbo-Generators, P&S. Engine Rooms, Aft. on raised platforms
Two, 60 KW Diesel Generators, in Diesel Generator Compartments 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 One in Port and one Starboard Engine Rooms, on
Centerline Bhd. at Cylinder top level 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 Yes
 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
Circuit Breakers & Double Pole Knife switches, fitted with Quick Break "Splash" Switches.
Equalizer switches are not fitted.
 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 Two ammeters Three volt-
 meters -- synchronizing device for paralleling purposes. For compound machines is the ammeter connected on the opposite pole to equalizer connection
-- Earth Testing, state what means are provided at the main switchboard for indicating the state of the insulation of the system
Switch, Fuse & Lamp testing device 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

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 **Single Lead** 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 to 3 volts** 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 **Lead Covered**

Support and Protection of Cables, state how the cables are supported and protected **On perforated trays for Cable Main Runs, Etc. in steel conduit through magazines, with metal cases fitted over same where necessary.**

If cables are run in wood casings, are the casings and caps secured by screws **None**, are the cap screws of brass **Yes**, are the cables run in separate grooves **Yes** 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 **Yes**

Joints in Cables, state if any, and how made, insulated, and protected **No joints in cables**

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 **All cables are of the lead cased variety, and are clipped direct to the Hull throughout.**

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 **Admiralty Practice of Comprehensive System of emergency bulkhead terminals & cabling for all vital services throughout the Vessel.**

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 **Yes**

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 **No**

are any fittings placed in spaces where inflammable or explosive dust or gases are liable to be present, if so, how are they protected **Installations wired & fitted in accordance with the Naval Manual of Explosive Regulations**, how are the cables led **Lead covered cables all run in steel conduits.**

where are the controlling switches situated **Outside of Compartments & at least 2" clear of bulkheads of these compartments.**

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 **Yes**, are air heaters constructed and fitted as per Rule **Yes**

Signalling Projector

Searchlight Lamps, No. of **Two 10"**, whether fixed or portable **Fixed**, are their fittings as per Rule **Yes**

Are Lamps, other than searchlight lamps, No. of **2**, are their live parts insulated from the frame or case **Yes**, are their fittings as per Rule **Yes**

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 Ventilated.**

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

have machines of over 100 BPH been inspected by the Surveyors during manufacture and testing **Yes** 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 **Steel Mast 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. Yes** are all fuses of the filled cartridge type **No** 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	1250	Steam Turbines	-	-
AUXILIARY ...	2	60	225	266	750	Heavy Oil Engines	Diesel Oil	Above 150°F.
EMERGENCY ...								
ROTARY TRANSFORMER								

GENERATOR, LIGHTING AND HEATING CONDUCTORS.

DESCRIPTION.	No. of	CONDUCTORS.		COMPOSITION OF STRAND.		TOTAL MAXIMUM CURRENT.		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.			
MAIN GENERATORS Two	1	1.0	127	0.103	534	932	✓	110 & 120	Varnished Cambric	Lead Covered
EQUALISER CONNECTIONS	-									
AUXILIARY GENERATORS Two	1	0.4	61	0.093	266	462	✓	100 & 180	" "	" "
EMERGENCY GENERATOR	-									
ROTARY TRANSFORMER (MOTOR GENERATOR)	-									
ENGINE ROOM (Circuit B)	1	0.06	19	0.064	90	135	✓	30	" "	" "
BOILER ROOM (S " " B)	1	0.06	19	0.064	90	135	✓	30	" "	" "
AUXILIARY SWITCHBOARDS	-									
Inter Connecting Cables	1	0.5	61	0.103	300	540	✓	60	" "	" "
" " "	1	0.5	61	0.103	300	540	✓	100	" "	" "
Degaussing Equipment	1	0.15	37	0.072	121	246	✓	80	" "	" "
ACCOMMODATION	-									
Lighting Circuit (S) "N"	1	0.15	37	0.072	180	246	✓	20	" "	" "
" " (P) "N"	1	0.15	37	0.072	180	246	✓	20	" "	" "
Power " (S) "P"	1	0.15	37	0.072	155	246	✓	50	" "	" "
" " (P) "P"	1	0.15	37	0.072	120	246	✓	50	" "	" "
WIRELESS	1	0.0225	7	0.064	30	75	✓	170	" "	" "
SEARCHLIGHT	-									
MASTHEAD LIGHT	1	0.003	64	0.008	0.36	10	✓	140	Tough Rubber sheath	Phosphor Bronze braided.
SIDE LIGHTS	1	0.003	64	0.008	0.36	10	✓	70	" "	" "
COMPASS LIGHTS	-									
POOP LIGHTS	-									
CARGO LIGHTS	-									
ARC LAMPS	-									
HEATERS	-									

MOTOR CONDUCTORS.

DESCRIPTION.	No. of Motors.	CONDUCTORS.		COMPOSITION OF STRAND.		TOTAL MAXIMUM CURRENT.		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	-									
COMPRESSOR Refrig.	1	1	.007	7	0.36	18.2	24	✓	50	Varnish Cambric Lead Covered
WATER PUMP Refrig.	1	1	.003	3	0.36	2.1	10	✓	50	" " "
ENGINE TURNING GEAR	-									
ENGINE REVERSING GEAR	-									
LUBRICATING OIL PUMPS	-									
OIL FUEL TRANSFER PUMP	-									
WINDLASS	-									
WINCHES Forward PORT	1	1	0.06	19	0.064	113	135	✓	300	" " "
" " Starboard	1	1	0.06	19	0.064	113	135	✓	200	" " "
WINCHES, AFT	-									
STEERING GEAR—										
(a) MOTOR GENERATOR	-									
(b) MAIN MOTOR	-									
WORKSHOP MOTOR	-									
VENTILATING FANS (S) C	11	1	0.15	37	0.072	80	246	✓	20	" " "
" " (P) " C	12	1	0.15	37	0.072	60	246	✓	20	" " "
Cargo Deck Ventilation (S) A	3	1	0.15	37	0.072	120	246	✓	50	" " "
" " (P) A	2	1	0.15	37	0.072	80	246	✓	50	" " "
Bow Door Motors	2	1	0.01	7	0.045	25	31	✓	140	" " "
Ramp Motor	1	1	0.06	19	0.064	118	135	✓	540	" " "

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 statement of the work done by

DAVIE SHIPBUILDING & REPAIRING CO. LTD.
Electrical Engineers.
 GENERAL SUPERINTENDENT

Date 18th Aug 45

COMPASSES.

nearest
Distance between electric generators or motor and standard compass 20 feet

nearest
Distance between electric generators or motor and steering compass 24 feet

The nearest cables to the compasses are as follows:—

A cable carrying	20	Ampères	10	feet from standard compass	10	feet from steering compass.	Compass Corrector coils are fitted on the
A cable carrying	12	Ampères	20	feet from standard compass	14	feet from steering compass.	Compasses in connection with the Degaussing Equipment.
A cable carrying	41	Ampères	22	feet from standard compass	25	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.

DAVIE SHIPBUILDING & REPAIRING CO. LTD.

Builder's Signature.
 GENERAL SUPERINTENDENT

Date 18th Aug 45

Is this installation a duplicate of a previous case. Yes If so, state name of vessel. ON 948

General Remarks (State quality of workmanship, opinions as to class, &c. This ELECTRICAL installation has been fitted on board this Vessel under Special Survey and in accordance with the approved plans and Specifications forwarded by the British Admiralty and has been satisfactorily tested under full load conditions.

Megger tests carried out and found in order.

The materials and workmanship are good and sound.

Copies of Certificates of test for Generators Nos. BCT 11853 and BCT 11846 attached.

"Report 4c" covering Oil Engines Nos. 1084 and 1085 also Generators Nos. 90708 and 90709 also attached.

Noted

Thurs. 31.10.45

Total Capacity of Generators 360 Kilowatts.

The amount of Fee ... \$ 140

Traveling Expenses (if any) \$ Included

Committee's Minute

Assigned

Su F.F. machy sph

Y. Bloomfield
 Surveyor to Lloyd's Register of Shipping.

FRI. 9 NOV 1945