

# REPORT ON ELECTRICAL EQUIPMENT.

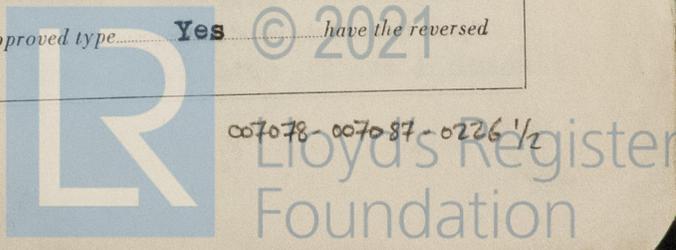
(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

27 JAN 1947

Received at London Office

Date of writing Report 16th Dec. 1946 When handed in at Local Office 17th Dec. 1946 Port of QUEBEC, P.Q.  
 No. in Survey held at Quebec, P.Q. Date, First Survey 16th Aug. Last Survey 7th Dec. 1946  
 Reg. Book. (Number of Visits Six)  
 on the Steel Single Screw Steamer "TA SHUN" (ex Corvette "Bowmanville") Tons { Gross 1387.27  
 Net 793.08  
 Built at Sunderland By whom built Wm. Pickersgill Yard No. \_\_\_\_\_ When built 1944  
 Owners Chinese Government Supply Agency Port belonging to Shanghai  
 Electric Light Installation fitted by Bedard Gerard Ltd. Contract No. X10462 When fitted 1946  
 Is the Vessel fitted for carrying Petroleum in bulk No

System of Distribution Two wire  
 Pressure of supply for Lighting 220 volts, Heating -- volts, Power 220 volts.  
 Direct or Alternating Current, Lighting D.C. Power D.C.  
 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. --, if not compound wound state distance between each generator --  
 Where more than one generator is fitted are they arranged to run in parallel No, 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 -- 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 Port & Stbd. sides Engine Room at aft end on middle 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 Port side Engine Room aft end on middle 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 -- 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 --, individual fuses to voltmeter, pilot or earth lamp Yes, are moving parts of switches alive in the "off" position Yes 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 One 250 amp. air break D.P. switch with overload and reverse current trip each generator, three 150 amp. D.P.S.T. switches fused 150 amps, three D.P.S.T. switches fused 60 amps., two D.P.S.T. switches fused 30 amps.  
 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 two volt-meters \_\_\_\_\_ 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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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** 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** **4%** **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 **--** **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** **run on trays suitably clipped.**

If cables are run in wood casings, are the casings and caps secured by screws **--**, are the cap screws of brass **--**, 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 **XI** **Yes**

**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** **Connected to steel platform**

are their connections made as per Rule **--**

**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** **--**

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 **--**

where are the controlling switches situated **--**

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

**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** **One**, whether fixed or portable **fixed**, are their fittings as per Rule **Yes**

**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 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 **--**

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** **Yes** **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** **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 ...	1	60	225	267	575	Vertical Steam Engine	--	--
AUXILIARY ...	1	30	225	133	575	Vertical Steam Engine	--	--
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.	In Circuit	Rule.			
MAIN GENERATOR ...	1	.3900	37	.1162	200	282	25	V.C.L.C.	on trays
EQUALISER CONNECTIONS ...	--								
AUXILIARY GENERATOR ...	1	.2000	37	.0820		184	80	V.C.L.C.	on trays
EMERGENCY GENERATOR...	--								
ROTARY TRANSFORMER ( MOTOR GENERATOR...)	--								
ENGINE ROOM ... D.P.	1	.0225	7	.064	20	46	40	V.C.L.C.	on trays
BOILER ROOM ... 1-8 way									
AUXILIARY SWITCHBOARDS ...									
1-4 way Up.Dk.Aft	1	.01	7	.044	22	31	100	V.C.L.C.	on trays
1-5 way For'd Light	1	.1660	19	.105	32	164	200	V.C.L.C.	on trays
1-5 way Aft Light	1	.0205	7	.02060	30	43.3	120	V.C.L.C.	on trays
1-4 way For'd Ewer	1	.1660	19	.105	48	164	160	V.C.L.C.	on trays
1-4 way Aft Power	1	.1660	19	.105	44	164	80	V.C.L.C.	on trays
ACCOMMODATION ...	1	.0015	1	.044	2	5		All sub circuits throughout vessel.	
Dist. Panels									
5-8 way For'd Light	1	.0080	7	.0385	16	26.4	500	R.I.L.C.	
5-8 way Aft Light	1	.0080	7	.0385	16	26.4	400	R.I.L.C.	
WIRELESS ...	1	.0330	7	.0772	22	57.7	320	R.I.L.C.	on trays
SEARCHLIGHT ...	1	.0080	7	.0385	12	26.4	400	R.I.L.C.	Conduit
MASTHEAD LIGHT ...	1	.0015	1	.044	3	5	120	R.I.L.C.	Conduit
SIDE LIGHTS ... each	1	.0015	1	.044	3	5	50	R.I.L.C.	
COMPASS LIGHTS ...	1	.0015	1	.044	1	5	20	R.I.L.C.	
MAIN LIGHTS Stern	1	.0015	1	.044	3	5	160	R.I.L.C.	Conduit
CARGO LIGHTS ...	--								
ARC LAMPS ...	--								
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 ...	1	1	.0330	7	.0772	17	57.7	60	R.I.L.C.	on trays
CIRC. SEA WATER PUMPS ...	--									
CIRC. FRESH WATER PUMPS...	--									
AIR COMPRESSOR ...	--									
FRESH WATER PUMP ...	1	1	.0030	7	.0242	3	12.9	50	R.I.L.C.	on trays
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 ... 17 1/2"	1	1	.007	7	.036	7	24	90	V.C.L.C.	on trays
12 1/2"	1	1	.0130	7	.0482	6.5	34.8	120	R.I.L.C.	on trays
10"	3	1	.0030	7	.0242	4.3	12.9	450	R.I.L.C.	on trays
7 1/2"	3	1	.0030	7	.0242	2.02	12.9	560	R.I.L.C.	on trays
5"	4	1	.0030	7	.0242	.9	12.9	600	R.I.L.C.	on trays
Frig. Motor	1	1	.0030	7	.0242	3.5	12.9	100	R.I.L.C.	Trays & 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-GIRARD LIMITED**

170 BLVD. DES CAPUCINS  
QUEBEC, P. Q.

*Yves Bedard* Electrical Engineers.

Date *Dec 20/46*

COMPASSES.

Distance between electric generators or motors and standard compass 150 feet

Distance between electric generators or motors and steering compass 140 feet

The nearest cables to the compasses are as follows:—

A cable carrying .25 Amperes in ~~lock box~~ standard compass in ~~lock box~~ steering compass.

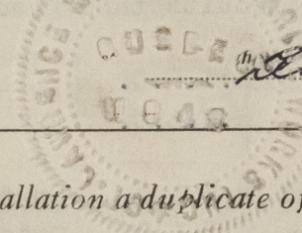
A cable carrying \_\_\_\_\_ Amperes \_\_\_\_\_ feet from standard compass \_\_\_\_\_ feet from steering compass.

A cable carrying \_\_\_\_\_ Amperes \_\_\_\_\_ 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 -- degrees on -- course in the case of the standard compass, and -- degrees on -- course in the case of the steering compass.



*André Séguin*

Builder's Signature.

Date 20<sup>th</sup> Dec. 1946

Is this installation a duplicate of a previous case Yes If so, state name of vessel "TA TUNG" (ex "Orangeville")

General Remarks (State quality of workmanship, opinions as to class, &c. The Electrical Installation of this

Vessel was originally installed under survey of the British Corporation Register of Shipping and Aircraft, but has now been converted and amended in conformity with the Plans approved by Lloyd's Register of Shipping, dated 17-10-46 New York.

This equipment has now been megger tested throughout, tried under full working conditions and found satisfactory.

The workmanship and materials are good and sound.

Total Capacity of Generators 90 Kilowatts.

The amount of Fee ... X 112<sup>00</sup> : When applied for, 5<sup>th</sup> Dec. 1946

Travelling Expenses (if any) & Included *incl. Aerial Rpts.* When received, 27<sup>th</sup> Dec. 1946

Committee's Minute

Assigned See Rpt 9

*J. Falkitt*

Surveyor to Lloyd's Register of Shipping.

FEB 14 1947

1m-4-42.—Transfer. Printed in U.S.A. (The Surveyors are requested not to write on or below the space for Committee's Minute)



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