

## REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

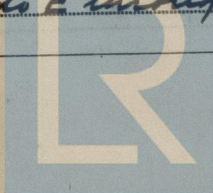
Received at London Office..... AUG. 9. 1940

Date of writing Report... 30th July, 1940... When handed in at Local Office..... 19..... Port of... HartlepoolNo. in Survey held at... Hartlepool... Date, First Survey... 18th April... Last Survey... 29th July 1940  
Reg. Book. Suppl. (Number of Visits... 13)88501 on the S.S. "ITOLA" Tons { Gross.....  
Net.....Built at Hartlepool By whom built Wm Gray & Co. Ltd. Yard No. 1102 When built 1940Owners British India Ste. Nav. Co. Ltd. Port belonging to LondonElectrical Installation fitted by The Sunderland Eng. & Ing. Co. Ltd. Contract No. 1102 When fitted 1940Is vessel fitted for carrying Petroleum in bulk No Is vessel equipped with D.F. No E.S.D. No Gy.C. No Sub.Sig. NoHave plans been submitted and approved No System of Distribution Double wire Voltage of supply for Lighting 110Heating 110 Power 110 Direct or Alternating Current, Lighting No Power No If Alternating Current state frequency..... Prime Movers,has the governing been tested and found efficient when the whole load is suddenly thrown on and off No Are turbine emergency governors fitted with atrip switch as per Rule..... Generators, are they compound wound No, are they level compounded under working conditions No,

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 No, are shunt field regulators provided No Is the compound winding connected to the negative or positive polePositive Have machines over 100 kw. been inspected by the Surveyors during manufacture and testing..... Have certificates oftest for machines under 100 kw. been supplied No and the results found as per rule No Are the lubricating arrangements and the constructionof the generators as per rule No Position of Generators Engine room starboard side....., is the ventilation in way of generators satisfactory No are they clear of inflammable material No, 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 No, are the bedplates and frames earthed No and the prime movers and generators in metalliccontact No Switchboards, where are main switchboards placed Engine room starboard side onafter bulkhead near generatorsare they in accessible positions, free from inflammable gases and acid fumes No, are they protected from mechanical injury and damage from water, steamand oil No, if situated near unprotected combustible material state distance from same horizontally..... and vertically....., what insulationmaterial is used for the panels Slates....., if of synthetic insulating material is it an Approved Type....., if ofsemi-insulating material (slate or marble) are all conducting parts insulated therefrom as per Rule No Is the frame effectually earthed NoIs the construction as per Rule No, including accessibility of parts No, absence of fuses on the back of the board No, individual fusesto pilot and earth lamps, voltmeters, etc. No locking of screws and nuts No, labelling of apparatus and fuses No, fuses on the "dead"side of switches No Description of Main Switchgear for each generator and arrangement of equaliser switches Double poleKnife switch and double pole fuse.and for each outgoing circuit Single pole, three way knife switch and doublepole fuse.Are compartments containing switchboards composed of fire-resisting material or lined as per Rule No Instruments on main switchboard Threeammeters Three voltmeters..... synchronising devices. For compound machines in parallel is the ammeter connected on the pole opposite to theequaliser connection..... Earth Testing, state means provided E lamps coupled to E through two 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, are the reversed current protection devices connected on the pole opposite to the equaliser connection Yes, have they been tested under working conditions Yes. 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 Yes, state maximum fall of pressure between bus bars and any point under maximum load 5.30 lbs are the ends of all cables having a sectional area of 0.04 square inch and above provided with soldering sockets Yes. Are paper insulated and varnished cambric insulated cables sealed at the exposed ends Yes with insulating compound Yes 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 Yes, if so, are they adequately protected Yes. Are cables in machinery spaces, galleys, laundries, etc., lead covered Yes or run in conduit Yes. State how the cables are supported and protected H.B.B. cables run in pipe through turnbuckles and clipped to surface in engine room to main panel. L.C.A.B. cables clipped to surface in engine room. L.C.A.B. cables clipped to wood grounds in access. 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 or pins. Alternative Lighting, are the groups of lights in the engine and boiler rooms arranged as per Rule Yes. Emergency Supply, state position Yes and method of control Yes.

Navigation Lamps, are they separately wired Yes controlled by separate single 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. 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 Yes.

and where are the controlling switches fitted Yes, are all fittings suitably ventilated Yes, are all fittings and accessories constructed and installed as per Rule Yes. Searchlight Lamps, No. of Yes, whether fixed or portable Yes, are their fittings as per Rule Yes. Heating and Cooking, is the general construction as per Rule Yes, are the frames effectually earthed Yes, are heaters in the accommodation of the convection type Yes. 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 Yes and vertically Yes. Have motors of 100 BHP and over been inspected by the Surveyors during manufacture and testing Yes. Have certificates of test for motors under 100 BHP intended for essential services been supplied and the results found as per Rule Yes. Control Gear and Resistances, are they constructed and fitted as per Rule Yes. Lightning Conductors, where required are they fitted as per Rule Yes. 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. If portable lamps for use in dangerous spaces are supplied, are they of a self-contained battery-fed flameproof type 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 megger 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	685	Single cylinder steam engine		
EMERGENCY ...								
ROTARY TRANSFORMER								

#### GENERATOR CABLES.

DESCRIPTION.	KILOWATTS.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (load plus return feet).	INSULATED WITH.	HOW PROTECTED.
		No. in Parallel Per Pole.	Sectional Area of No. and Dia. of Strands. Sq. ins. or sq. mm.	In the Circuit.	Rule.			
MAIN GENERATOR ...	3x30	1	37.183	273	296	301	V.C.	L.C.A.B.
" " EQUALISER ...						364		
EMERGENCY GENERATOR ...								
ROTARY TRANSFORMER: MOTOR								
" " GENERATOR								

#### MAIN DISTRIBUTION CABLES.

AUX. SWITCHBOARDS AND SECTION BOARDS ...								
H.P. Htg. Section Board feed:-	2	19.064	160	166	210	V.I.R.	H.R.A.B.	
Eng. Htg. Section Board feed:-	2	19.064	150	166	90	V.I.R.	H.R.A.B.	
Off. Htg. Section Board feed:-	1	7.064	28	46	210	V.I.R.	H.R.A.B.	
Eng. Ltg. Section Board feed:-	1	7.064	23	46	90	V.I.R.	H.R.A.B.	
Cargo Ltg. Section Board feed:-	1	19.064	47	83	90	V.I.R.	H.R.A.B.	
Ref. Section Board feed:-	1	7.064	35	46	210	V.I.R.	H.R.A.B.	
Engine Room Section Board feed:-	1	7.064	37	46	60	V.I.R.	H.R.A.B.	
Workshop Section Board feed:-	1	7.064		46	60	V.I.R.	H.R.A.B.	

#### LIGHTING AND HEATING, ETC., CABLES.

WIRELESS ...	1	7.064	20	31	390	V.I.R.	H.R.A.B. & L.C.A.B.	
NAVIGATION LIGHTS ...	1	7.064	13	46	390	V.I.R.	H.R.A.B. & L.C.A.B.	
LIGHTING AND HEATING ...	1	7.064	19	46	480	V.I.R.	H.R.A.B.	
Off. Ltg. O.B.	1	7.064	43.652	83	15.84	V.I.R.	L.C.A.B.	
3 O.B. H.P. Htg. Htg. S.B.	1	19.064	82.68	83	15.84	V.I.R.	L.C.A.B.	
2 O.B. Off. Eng. Htg. S.B.	1	7.064	10.612	24	15.84	V.I.R.	L.C.A.B.	
2 O.B. H.P. Htg. Ltg. S.B.	1	7.064	11.12	24	15.84	V.I.R.	L.C.A.B.	
2 O.B. H.P. Eng. Htg. S.B.	1	7.064	27.20	46	12.15	V.I.R.	H.R.A.B. & L.C.A.B.	
2 O.B. H.P. Cargo Ltg. S.B.	1	7.064	30	46	8	V.I.R.	H.R.A.B.	
E.R. Ltg. O.B. H.P. E.R. S.B.	1	7.064						

#### MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED.	No.	B.H.P.						
Engine Room Vent. Fans.	3	2	1	7.064	18	31	30.000	V.I.R. L.C.A.B.
Oil Pumping	1	0.5	1	7.064	4.75	31	45	V.I.R. H.R.A.B.
Ref. Htg.	1	3	1	7.064	25	31	8	V.I.R. H.R.A.B.
Ref. Pump	1	1	1	3.026	9	12	230	V.I.R. H.R.A.B.
Ref. Fan	1	0.000	1	3.029	5	7.9	40	V.I.R. H.R.A.B.
Dist. Cleaning Htg. Off. E.R. S.B.	1	75	1	7.029	7	18.2	130	V.I.R. H.R.A.B.
Dist. Htg. Off. Workshop S.B.	1		1	7.064		31		V.I.R. L.C.A.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.

*16<sup>th</sup> Sunderland Forge & Eng Co Ltd* Electrical Engineers. Date *1-8-1940*  
*Alkenny*

#### COMPASSES.

Minimum distance between electric generators or motors and standard compass *112 feet*

Minimum distance between electric generators or motors and steering compass *106 feet*

The nearest cables to the compasses are as follows:—

A cable carrying *14* Ampères *on the* feet from standard compass *7* feet from steering compass.

A cable carrying *14* Ampères *7* feet from standard compass *on the* 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 *half* degrees on *every* course in the case of the standard compass, and *half* degrees on *every* course in the case of the steering compass.

*Wm. S. Simpson* Builder's Signature. Date *6th Aug. 1940*

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

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. The materials used and the workmanship are good. On completion the equipment was run under working conditions, the governing, regulation and compounding of the generating sets were tested, the insulation resistance of all circuits was measured and the spare gear was examined. This equipment is in my opinion suitable for a classed vessel.*

*Noted*  
*15/8/40*

Total Capacity of Generators *90* Kilowatts.

The amount of Fee ... £ *31 : 10* : When applied for, ... 19.

Travelling Expenses (if any) £ : : When received, *16th Sept* ... 19.40

*Gautson*

Surveyor to Lloyd's Register of Shipping.

**FRI 16 AUG 1940**

Committee's Minute

Assigned *See App FE 18061*



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Foundation