

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 Hardlepool

No. in Survey held at Hardlepool 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 Hardlepool By whom built Wm Gray & Co. Ltd. Yard No. 1102 When built 1940

Owners British India Ste. Nav. Co. Ltd. Port belonging to London

Electrical Installation fitted by The Sunderland Eng. & Ing. Co. Ltd. Contract No. 1102 When fitted 1940

Is vessel fitted for carrying Petroleum in bulk No Is vessel equipped with D.F. No E.S.D. No Gy.C. No Sub.Sig. No

Have plans been submitted and approved Yes System of Distribution Double wire Voltage of supply for Lighting 110

Heating 110 Power 110 Direct or ~~Alternating~~ Current, Lighting Yes Power Yes 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 Yes Are turbine emergency governors fitted with a

trip switch as per Rule..... Generators, are they compound wound Yes, are they level compounded under working conditions Yes,

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 Yes Is the compound winding connected to the negative or positive pole

Positive Have machines over 100 kw. been inspected by the Surveyors during manufacture and testing..... Have certificates of

test for machines under 100 kw. been supplied Yes and the results found as per rule Yes Are the lubricating arrangements and the construction

of the generators as per rule Yes Position of Generators Engine room starboard side

....., is the ventilation in way of generators satisfactory Yes are they clear of inflammable material Yes, 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 Yes, are the bedplates and frames earthed Yes and the prime movers and generators in metallic

contact Yes Switchboards, where are main switchboards placed Engine room starboard side on

after bulkhead near generators

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

and oil Yes, if situated near unprotected combustible material state distance from same horizontally..... and vertically....., what insulation

material is used for the panels Slats....., if of synthetic insulating material is it an Approved Type....., if of

semi-insulating material (slate or marble) are all conducting parts insulated therefrom as per Rule Yes Is the frame effectually earthed Yes

Is the construction as per Rule Yes including accessibility of parts Yes, absence of fuses on the back of the board Yes, individual fuses

to pilot and earth lamps, voltmeters, etc. Yes locking of screws and nuts Yes, labelling of apparatus and fuses Yes, fuses on the "dead"

side of switches Yes Description of Main Switchgear for each generator and arrangement of equaliser switches Double pole

Knife switch and double pole fuse.

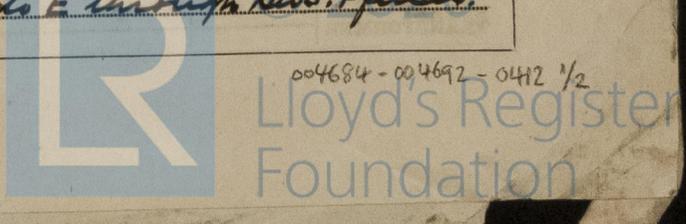
and for each outgoing circuit Single pole, three way knife switch and double

pole fuse.

Are compartments containing switchboards composed of fire-resisting material or lined as per Rule Yes Instruments on main switchboard Three

ammeters Three voltmeters..... synchronising devices. For compound machines in parallel is the ammeter connected on the pole opposite to the

equaliser connection..... Earth Testing, state means provided E lamps coupled to E through two fuses



004684 - 004692 - 0412 1/2

13081
Switches, Circuit Breakers and Fuses, are they as per Rule 7/0, are the fuses an approved type 7/0, are all fuses labelled as per Rule 7/0, are the reversed current protection devices connected on the pole opposite to the equaliser connection 7/0, have they been tested under working conditions 7/0. Joint Boxes, Section Boards and Distribution Boards, is the construction and position as per Rule 7/0.

Cables, are they insulated and protected as per the appropriate Tables of the Rules 7/0, if otherwise than as per Rule are they of an approved type 7/0, state maximum fall of pressure between bus bars and any point under maximum load 5.30 rds are the ends of all cables having a sectional area of 0.04 square inch and above provided with soldering sockets 7/0. Are paper insulated and varnished cambric insulated cables sealed at the exposed ends 7/0 with insulating compound 7/0 or waterproof insulating tape 7/0. 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 7/0, are cables laid under machines or floorplates 7/0, if so, are they adequately protected 7/0. Are cables in machinery spaces, galleys, laundries, etc., lead covered 7/0 or run in conduit 7/0. State how the cables are supported and protected H.R.B. cables run in pipe through twin-decks and clipped to surface in engine room to main cut-off. 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 7/0. Refrigerated chambers, are the cables and fittings as per Rule 7/0. Are all cables passing through decks and watertight bulkheads provided with deck tubes or watertight glands 7/0, where unarmoured cables pass through beams, etc., are the holes effectively bushed 7/0 and with what material Lead or pins. Alternative Lighting, are the groups of lights in the engine and boiler rooms arranged as per Rule 7/0. Emergency Supply, state position 7/0 and method of control 7/0.

Navigation Lamps, are they separately wired 7/0 controlled by separate 7/0 pole switches 7/0 and fuses 7/0. Are the switches and fuses in a position accessible only to the officers on watch 7/0, is an automatic indicator fitted 7/0. Secondary Batteries, are they constructed and fitted as per Rule 7/0, are they adequately ventilated 7/0.

Fittings, are all fittings on weather decks, in stokeholds and engine rooms and wherever exposed to drip or condensed moisture, weatherproof 7/0. Are fittings installed where readily combustible materials or inflammable or explosive dust or gases are likely to be present 7/0, if so, how are they protected 7/0 and where are the controlling switches fitted 7/0, are all fittings suitably ventilated 7/0.

are all fittings and accessories constructed and installed as per Rule 7/0. Searchlight Lamps, No. of 7/0, whether fixed or portable 7/0, are their fittings as per Rule 7/0. Heating and Cooking, is the general construction as per Rule 7/0.

are the frames effectually earthed 7/0, are heaters in the accommodation of the convection type 7/0. Motors, are all motors constructed and installed as per Rule 7/0 and placed in well-ventilated compartments in which inflammable gases cannot accumulate and free from damage from water, steam and oil 7/0, if situated near unprotected combustible material state minimum distance from same horizontally 7/0 and vertically 7/0.

Have motors of 100 BHP and over been inspected by the Surveyors during manufacture and testing 7/0. Have certificates of test for motors under 100 BHP intended for essential services been supplied and the results found as per Rule 7/0. Control Gear and Resistances, are they constructed and fitted as per Rule 7/0. Lightning Conductors, where required are they fitted as per Rule 7/0. 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 7/0, are all fuses of the cartridge type 7/0 are they of an approved type 7/0. If portable lamps for use in dangerous spaces are supplied, are they of a self-contained battery-fed flameproof type 7/0. Spare Gear, if the vessel is for open sea service have spares been provided as per Rule 7/0, are they suitably stored in dry situations 7/0. Insulation Tests, has the insulation resistance of all circuits and apparatus been megger tested and found satisfactory 7/0.

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 loss).	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	37.182	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	No.	Sectional Area	Max. Current	Approx. Length	Insulated With	How Protected
Upper High Section Board feed:-	2	19.064	160	166	210	V.I.R. H.R.A.B.
Upper High Section Board feed:-	2	19.064	150	166	90	V.I.R. H.R.A.B.
Upper High Section Board feed:-	1	7.064	28	46	210	V.I.R. H.R.A.B.
Upper High Section Board feed:-	1	7.064	23	46	90	V.I.R. H.R.A.B.
Upper High Section Board feed:-	1	19.064	47	83	90	V.I.R. H.R.A.B.
Upper High Section Board feed:-	1	7.064	35	46	210	V.I.R. H.R.A.B.
Upper High Section Board feed:-	1	7.064	37	46	60	V.I.R. H.R.A.B.
Upper High Section Board feed:-	1	7.064	46	60	60	V.I.R. H.R.A.B.

LIGHTING AND HEATING, ETC., CABLES.

DESCRIPTION	No.	Sectional Area	Max. Current	Approx. Length	Insulated With	How Protected
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	450	V.I.R. H.R.A.B.
Upper High Section Board feed:-	1	19.064	43.652	83	15.84	V.I.R. L.C.A.B.
Upper High Section Board feed:-	1	19.064	82.63	83	15.84	V.I.R. L.C.A.B.
Upper High Section Board feed:-	1	7.064	10.612	24	15.84	V.I.R. L.C.A.B.
Upper High Section Board feed:-	1	7.064	11.12	24	15.84	V.I.R. L.C.A.B.
Upper High Section Board feed:-	1	7.064	27.20	46	12.15	V.I.R. H.R.A.B. & L.C.A.B.
Upper High Section Board feed:-	1	7.064	30	46	8	V.I.R. H.R.A.B.

MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED.	No.	B.H.P.	Sectional Area	Max. Current	Approx. Length	Insulated With	How Protected
Engine Room Vent. Fans	3	2	7.064	18	31	30.060	V.I.R. L.C.A.B.
Oil Pumps	1	0.5	7.064	4.75	31	45	V.I.R. H.R.A.B.
Refrig. M/c	1	3	7.064	25	31	8	V.I.R. H.R.A.B.
Refrig. Pump	1	1	3.026	9	12	230	V.I.R. H.R.A.B.
Refrig. Fan	1	0.25	3.029	5	7.9	40	V.I.R. H.R.A.B.
Ditch Cleaning M/c off E.R.S.B.	1	0.75	7.029	7	18.2	130	V.I.R. H.R.A.B.
Ditch M/c off Workshop S.B.	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.

*16⁰⁰⁰⁰ Sunderland Forge Eng Co Ltd
H. K. Hume*

Electrical Engineers.

Date 1-8-1940

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.

W. J. AM GRAY
Thos. 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 open 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 Spl F.E. 18061*

2m.10.38.—Transfer. (MADE IN ENGLAND.)
(The Surveyors are requested not to write on or below the space for Committee's Minute.)



© 2020

Lloyd's Register Foundation