

REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL) 10 MAR 1930

Received at London Office

Date of writing Report 19 When handed in at Local Office 8th March 1930 Port of Belfast

No. in Survey held at Belfast Date, First Survey 5th June 1929 Last Survey 3rd Mar 1930
 Reg. Book. (Number of Visits.....10.....)

37059 on the "H.M.S. Prince"

Built at Belfast By whom built Hasland & Wolff Ltd Yard No. 697 When built 1930

Owners Belfast S.S. Co Ltd Port belonging to Belfast

Electric Light Installation fitted by Hasland & Wolff Ltd Contract No. 697 When fitted 1930

System of Distribution Two wire direct current to distribution boxes.

Pressure of supply for Lighting 220 volts, Heating 220 volts, Power 220 volts.

Direct or Alternating Current, Lighting Direct Power Direct

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 rating? 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.

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.

Position of Generators In auxiliary engine room, fore of main engine room, 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 In auxiliary engine room on platform above main generators.

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.

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.

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.

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, proportion of omnibus bars? Yes.

individual fuses to voltmeter, pilot or earth lamp? Yes, connections of switches? Yes.

Main Switchgear, description of switchgear for each generator and each outgoing circuit, and arrangement of equalizer switches. Generator is connected to bus-bars by double pole, overload & time limit circ. breaker & equalizer switch. Each outgoing circuit has D.P. overload circ. breaker or D.P. switch & fuses.

Instruments on main switchboard 4 ammeters 2 voltmeters arranged for paralleling purposes.

Earth Testing, state what means are provided at the main switchboard for indicating the state of the insulation of the system. Earth indicator lamps connected to bus-bars by double pole switch & fuses.

Switches, Circuit Breakers and Fusible Cut-outs, do these comply with the requirements of the Rules? Yes.

Joint Boxes Section and Distribution Boards, is the construction, protection, insulation, material, and position of these as per rule? Yes.



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Cables: Single, twin, concentric, or multicore *Single* are the cables insulated and protected as per Tables IV or V of the Rules *Yes*.

Fall of Pressure, state maximum between bus bars and any point of the installation under maximum load *9.0 Volts*.

Cable Sockets and other connections, are the ends of all cables having a sectional area of 0.04 square inch and above provided with soldering sockets *Yes*.

Paper Insulated Cables, If cables are paper covered, is the dielectric at the exposed ends of the conductor protected from moisture by being suitably sealed with insulating compound

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*.

Support and Protection of Cables, state how the cables are supported and protected *Cables are hard rubber covered and are clipped to perforated plating & protected by sheet metal covering in holds.*
If cables are run in wood casings, are the casings and caps secured by screws *Yes*, are the caps 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 VIII *Yes*.

Refrigerated Chambers, if lights are fitted, are the cables and fittings in accordance with the special requirements *Yes*.

Joints in Cables, state if any, and how made, insulated, and protected *All joints are made in properly constructed 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 *All portable fittings, sockets etc. fitted other than to the steelwork of the ship, are provided with an earthing connection equivalent to working conductor.* 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 *7 1/2 H.P. Generator driven by paraffin engine on boat deck 160 amp hour 220 V. storage battery in dummy funnel, controlled by switch board in emergency dynamo room.*

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 *Yes*, *Guarded hold fittings placed between beams.*
are any fittings placed in spaces where inflammable or explosive dust or gases are liable to be present, if so, how are they protected *Yes*.

where are the controlling switches situated

Searchlight Lamps, No. of *1*, whether fixed or portable *Portable*, 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 *Yes*, if not of this type, state distance of the combustible material horizontally or vertically above the motors *—* and *—*.

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 *Yes*.
If portable lamps for use in dangerous spaces are supplied, are they of a type approved by the Home Office *Yes*.

PARTICULARS OF GENERATING PLANT.

DESCRIPTION OF GENERATOR.	No. of	RATED AT				DRIVEN BY	WHERE DRIVEN BY AN INTERNAL COMBUSTION ENGINE.	
		Kilowatts.	Volts.	Amps.	Revs. per Min.		Fuel Used.	Flash Point of Fuel.
MAIN	3	110	220	500	300	Diesel Engines	Fuel Oil.	
AUXILIARY	1	7 1/2	220	34	1100	Paraffin Engine	Paraffin.	
EMERGENCY								
ROTARY TRANSFORMER								

LIGHTING AND HEATING CONDUCTORS.

Ref. No.	DESCRIPTION.	No. of Conductors.	Effective Area of each Conductor. Sq. Ins.	COMPOSITION OF STRAND.		Total Maximum Current. Amperes.	Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.
				No.	Diameter.				
	MAIN GENERATOR	4 (2 lead)	.4	61	.093	500	28	Rubber	Hard Rubber
	EQUALISER CONNECTIONS	—	—	—	—	—	—	—	—
	AUXILIARY GENERATOR	2	.0225	7	.064	35	60	Rubber	Hard Rubber
	EMERGENCY GENERATOR	—	—	—	—	—	—	—	—
	ROTARY TRANSFORMER	—	—	—	—	—	—	—	—
	AUXILIARY SWITCHBOARDS	2	.75	91	.103	380	400	Rubber	Hard Rubber
	ENGINE ROOM								
	BOLLER ROOM								
	ACCOMMODATION								
	WIRELESS	2	.007	7	.036	5	130	Rubber	Lead Covered
	SEARCHLIGHT	2	.002	3	.029	4	30	"	Hard Rubber
	MASTHEAD LIGHT	2	.002	3	.029	0.18	480	"	Hard Rubber & L.S.P.B.
	SIDE LIGHTS	2	.002	3	.029	0.18	60	"	Hard Rubber
	COMPASS LIGHTS	2	.002	3	.029	0.18	30	"	Hard Rubber
	POOP LIGHTS	—	—	—	—	—	—	—	—
	CARGO LIGHTS	3	.0048	110	.0076	2.5	160	Rubber	C.T.S.
	ARC LAMPS	—	—	—	—	—	—	—	—
	HEATERS	2	.002	3	.029	5	60	Rubber	Hard Rubber

MOTOR CONDUCTORS.

Ref. No.	DESCRIPTION.	No. of Motors.	Effective Area of each Conductor. Sq. Ins.	COMPOSITION OF STRAND.		Total Maximum Current. Amperes.	Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.
				No.	Diameter.				
	BALLAST PUMP	1	.04	19	.082	56	288	Rubber	Hard Rubber
	MAIN BILGE LINE PUMPS	1	.01	7	.044	28	234	"	"
	FUEL OIL GENERAL SERVICE PUMP	2	.002	3	.029	6	60	"	"
	EMERGENCY BILGE PUMP	1	.04	19	.082	48	330	"	Lead Covered
	SANITARY PUMP	1	.075	19	.072	88	120	"	Hard Rubber
	CIRC. SEA WATER PUMPS	1	.075	19	.072	88	120	"	"
	CIRC. FRESH WATER PUMPS	—	—	—	—	—	—	—	—
	AIR COMPRESSOR	2	.50	61	.103	380	98	"	"
	FRESH WATER PUMP	2	.0045	7	.029	14	147	"	"
	ENGINE TURNING GEAR	2	.0225	7	.064	40	150	"	"
	ENGINE REVERSING GEAR	—	—	—	—	—	—	—	—
	LUBRICATING OIL PUMPS	2	.10	19	.082	112	210	"	"
	OIL FUEL TRANSFER PUMP	1	.0045	7	.029	16	228	"	"
	WINDLASS	1	.50	61	.103	465	80	"	"
	WINCHES, FORWARD	2	.06	19	.064	92	250	"	"
	WINCHES, AFT	1	.06	19	.064	92	80	"	"
	STEERING GEAR	—	—	—	—	—	—	—	—
	(a) MOTOR GENERATOR	2	.03	19	.044	44	600	"	"
	(b) MAIN MOTOR	—	—	—	—	—	—	—	—
	WINDLASS MOTOR	1	.002	3	.029	4	200	"	"
	VENTILATING FANS	3	.007	7	.036	23	200	"	"
	"	4	.003	3	.036	10.4	200	"	"
	"	3	.002	3	.029	6.8	120	"	"
	"	1	.002	3	.029	4.5	180	"	"
	"	2	.003	3	.036	4.25	195	"	"
	"	1	.002	3	.029	2	330	"	"
	"	1	.002	3	.029	2.5	120	"	"

All Conductors are of annealed copper conforming to British Standard Specification No. 7.
 The Insulated Conductors are guaranteed to withstand the immersion and resistance tests specified in the Rules.
 The foregoing is a correct description.



Electrical Engineers.

Date 25/2/30

COMPASSES.

Distance between electric generators or motors and standard compass 66' to generators 30' to nearest motor.
 Distance between electric generators or motors and steering compass 60' " " 27' " " "

The nearest cables to the compasses are as follows:—

A cable carrying 6.5 Ampères 7 feet from standard compass 7 feet from steering compass.
 A cable carrying 16 Ampères 7 feet from standard compass 7 feet from steering compass.
 A cable carrying 13 Ampères 15 feet from standard compass 10 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 all course in the case of the standard compass, and nil degrees on all course in the case of the steering compass.



Builder's Signature.

Date No. 2. 30.

Is this installation a duplicate of a previous case. *Yes* If so, state name of vessel *"Ulaeteff Monarch"*

General Remarks (State quality of workmanship, opinions as to class, &c.)

This work has been done under special survey. The materials and workmanship are sound and good. The installation has been tried out under full working conditions with satisfactory results. In my opinion the vessel is eligible for notation "Electric Light"

It is submitted that this vessel is eligible for THE RECORD.

Elec. Light
W. J. 13/3/30.

Total Capacity of Generators 337½ Kilowatts.

The amount of Fee ... £ 39 : 18. 9. { When applied for, 5th Mar 1930

Travelling Expenses (if any) £ : : { When received, 26. 3. 30

R. Lee Anneson
 Surveyor to Lloyd's Register of Shipping.

Committee's Minute TUE. 18 MAR 1930

Assigned *Elec. Lt.*

Im. 1.27.—Transfer. (The Surveyors are requested not to write on or below the space for Committee's Minute.)

