

# REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

9 AUG 1928

Received at London Office

Date of writing Report 19 When handed in at Local Office 8.8.28 Port of NEWCASTLE-ON-TYNE.

No. in Survey held at Newcastle. Date, First Survey 31<sup>st</sup> Aug 1927. Last Survey 25<sup>th</sup> June 1928  
Reg. Book. (Number of Visits... 25...)

68346 on the M.V. "Baptie" Tons { Gross Net

Built at Newcastle. By whom built Swan Hunter & W. R. C. Ltd. Yard No. 1319 When built 1928

Owners Shaw Savill & Albion Co. Ltd. Port belonging to Southampton

Electric Light Installation fitted by Swan Hunter & Wigham Richardson Contract No. 1319 When fitted 1928

System of Distribution Double wire

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.

Are the lubricating arrangements of the generators as per Rule? Yes.

Position of Generators Engine room, 2 on port side, 2 on starboard side.

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 Engine room aft on switchboard 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.

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? Yes.

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.

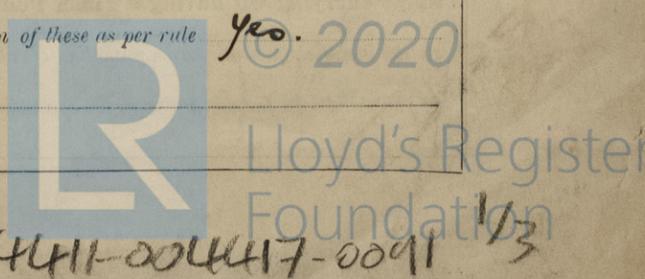
Main Switchgear, description of switchgear for each generator and each outgoing circuit, and arrangement of equalizer switches. Tripole pole circuit breaker for each main generator + double pole circuit breakers. Double pole switch + fuses for each outgoing circuit

Instruments on main switchboard 5 ammeters 4 voltmeters synchronising device 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 lamps coupled to earth through switches + 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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C. O <sub>2</sub> compressor	2	1.0376	127	.103	507✓	90
Brine pump	4	.07592	19	.072	52✓	140
Refng fans	5	.06	19	.064	46✓	600
Refng circ pump	1	.1168	37	.064	118✓	200

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PARTICULARS OF GENERATING PLANT.

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 2.0 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 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 head cover arm braided cables for main run on metal tray plate + supported by metal clips. head covered arm braided cable clipped to bulkhead in acc<sup>n</sup>.

Support and Protection of Cables, state how the cables are supported and protected head covered arm braided cables for engine room auxiliaries supported by metal clips on tray plating  
 If cables are run in wood casings, are the casings and caps secured by screws yes, 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 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 joint boxes complete with watertight glands + sweating terminals

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 none, 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 Emergency generator fitted in emergency generator room, controlled by double pole switch + fuses on emergency switchboard. Generator driven by oil engine

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

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

Protected by cast iron covers.  
 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, how are the cables led yes

where are the controlling switches situated yes

Searchlight Lamps, No. of yes, whether fixed or portable yes, are their fittings as per Rule yes

Are Lamps, other than searchlight lamps, No. of yes, 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 yes, if not of this type, state distance of the combustible material horizontally or vertically above the motors 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 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 yes

PARTICULARS OF GENERATING PLANT.

WHERE DRIVEN BY AN INTERNAL COMBUSTION ENGINE.

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	4	275	220	1250	300	Diesel Oil Engines		
AUXILIARY	1	12	220	54	300	Oil Engine.		
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. 2 per pole.	1	1.0376	127	.103	1250	130	Y.I.R.	Lead on arm braided
	EQUALISER CONNECTIONS	1	1.0376	127	.103	90	90	50	50
	AUXILIARY GENERATOR					54	40	50	50
	EMERGENCY GENERATOR	2	.0396	19	.052	54	40	50	50
	ROTARY TRANSFORMER								
	AUXILIARY SWITCHBOARDS								
	ENGINE ROOM	2	.02214	7	.064	24	200	50	50
	BOILER ROOM								
	ACCOMMODATION								
	Navigation	2	.00455	7	.029	4	380	50	50
	Midships Forward	2	.0284	19	.044	25	300	50	50
	Engines + aft	2	.0284	19	.044	23	740	50	50
	Forward Lower Ring 2 per pole	2	.6062	91	.093	—	1300	Lead on arm	50
	Aft Lower Ring 2 per pole	2	.6062	91	.093	—	850	50	50
	Galley + Pantries	2	.1478	37	.072	142.9	180	Y.I.R.	50
	Refng machinery	2	1.0376	127	.103	—	180	50	50
	Galley Boilers	2	.02214	7	.064	18.0	130	50	50
	WIRELESS	2	.02214	7	.064	15	340	50	50
	SEARCHLIGHT								
	MASTHEAD LIGHT	2	.00194	3	.029	.4	350	50	50
	SIDE LIGHTS	2	.00194	3	.029	.4	50	50	50
	COMPASS LIGHTS	2	.00194	3	.029	.4	25	50	50
	STERN LIGHTS	2	.00194	3	.029	.4	500	50	50
	CARGO LIGHTS	2	.06	19	.064	50.4	250	50	50
	HEATERS	2	.1168	37	.064	120.4	500	50	50
		2	.1009	19	.083	85.0	250	50	50

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	.1009	19	.083	88	200	Y.I.R.	Lead on arm braided
	MAIN BILGE LINE PUMPS	2	.06	19	.064	57	220	50	50
	GENERAL SERVICE PUMP	1	.07592	19	.072	73	200	50	50
	EMERGENCY BILGE PUMP								
	SANITARY PUMP	1	.06	19	.064	57	180	50	50
	CIRC. SEA WATER PUMPS								
	CIRC. FRESH WATER PUMPS	2	.6062	91	.093	750	250	50	50
	AIR COMPRESSOR	1	.0284	19	.044	26	150	50	50
	FRESH WATER PUMP	2	.07592	19	.072	76	90	50	50
	ENGINE TURNING GEAR								
	ENGINE REVERSING GEAR	3	.0396	19	.052	32	180	50	50
	LUBRICATING OIL PUMPS	2	.0284	19	.044	25	180	50	50
	OIL FUEL TRANSFER PUMP	1	.4064	61	.093	260	100	50	50
	WINDLASS	11	.2465	37	.093	198	120	50	50
	WINCHES, FORWARD	9	.2465	37	.093	198	120	50	50
	WINCHES, AFT								
	STEERING GEAR								
	(a) MOTOR GENERATOR	2	.1478	37	.072	132	580	50	50
	(b) MAIN MOTOR	1	.02214	7	.064	20	50	50	50
	WORKSHOP MOTOR								
	VENTILATING FANS	5	.01462	7	.052	11.5	200	50	50
	3 per pole Turbo Blowers	2	.7435	91	.103	136.4	250	50	50
	Jacket cooling pump	3	.1168	37	.064	115	220	50	50
	Piston water pump	1	.06	19	.064	57	120	50	50
	Boiler head heat pump	1	.02214	7	.064	20	60	50	50
	Gen circulating pump	1	.02214	7	.064	18	60	50	50
	Eng room crane	1	.0284	19	.044	30	140	50	50
	Oil purifiers	3	.01462	7	.052	11.5	130	50	50
	Boiler feed pump	1	.01046	7	.044	10.0	75	50	50
	Boiler air Blower	1	.01462	7	.052	11.5	90	50	50

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.

FOR SWAN, HUNTER, & WIGHAM RICHARDSON, LTD. Electrical Engineers.

Date 2<sup>nd</sup> August 1928.

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 Ampères on the feet from standard compass 5 feet from steering compass.

A cable carrying .25 Ampères 5 feet from standard compass on the feet from steering compass.

A cable carrying .5 Ampères 5 feet from standard compass 5 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.

FOR SWAN, HUNTER, & WIGHAM RICHARDSON, LTD

T. Cunningham Builder's Signature. Date 2<sup>nd</sup> Aug 1928.

Is this installation a duplicate of a previous case. yes. If so, state name of vessel Zealandia

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

The above installation is in accordance with the Societies Rules. The vessel is eligible in my opinion for notation elec light wireless

It is submitted that this vessel is eligible for Elec light. W.T.B. 11/8/28.

Total Capacity of Generators 1112. Kilowatts.

The amount of Fee ... £ 59:6 + 6:7.19.28

Travelling Expenses (if any) £ : : 13:7.19.28

W.T. Badger Surveyor to Lloyd's Register of Shipping.

Committee's Minute

Assigned Elec light

Im. 127.—Transfer. (The Surveyors are requested not to write on or between the space for Committee's Minute.)