

No. 39816.

Rpt. 13.

# REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL) Received at London Office 30 APR 1929

Date of writing Report 29. 4. 1929 When handed in at Local Office 29 April 29 Port of **HULL**  
 No. in Survey held at Hull. Date, First Survey 14 April Last Survey 22 April 1929  
 (Number of Visits 2)  
 Reg. Book. 67604 on the Steam Trawler "VARANGA" Tons { Gross 329.65  
 Net 170.51  
 Built at Beverley By whom built Cook, Welton & Gemmell Card No. 574. When built 1929  
 Owners Lethen Bros. Port belonging to  
 Electric Light Installation fitted by Wm Braddy & Sons Ltd Contract No. - When fitted 1929.

System of Distribution *Two wire.* volts, Heating  volts, Power  volts.

Pressure of supply for Lighting 100 volts, Heating  Power

Direct or Alternating Current, Lighting *bisect current*

If alternating current system, state frequency of periods per second *50*

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  is an adjustable regulating resistance fitted in

series with each shunt field

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 *Starboard side of engine room* are they clear of all inflammable material *Yes*

is the ventilation in way of the generators satisfactory *Yes*, state distance of same horizontally from or vertically above the generators

if situated near unprotected woodwork or other combustible material, state distance of same horizontally from or vertically above the generators *Yes*

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* are the prime movers and

Earthing, are the bedplates and frames of the generating plant efficiently earthed *Yes*

their respective generators in metallic contact *Yes* *bisect compound.*

Main Switch Boards, where placed *Beside generator, in engine room*

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*, if situated near unprotected

are they protected from mechanical injury and damage from water, steam or oil  and

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

*Main circuits controlled by S.P. switches - protected*

*by fuses on each pole.*

Instruments on main switchboard *one* ammeters *one* 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, with separate switches*

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*

**Cables:** Single, twin, concentric, or multicore Twine 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 1 volt

**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

**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 home

**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 Armoured cables with G.I. clips

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 home

**Joints in Cables,** state if any, and how made, insulated, and protected home

**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 through earth lamps

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 home

**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 home

are any fittings placed in spaces where inflammable or explosive dust or gases are liable to be present, if so, how are they protected home

are any fittings placed in spaces where inflammable or explosive dust or gases are liable to be present, if so, how are they protected home

where are the controlling switches situated home

**Searchlight Lamps, No. of** 1, whether fixed or portable Yes, are their fittings as per Rule Yes

**Arc Lamps,** other than searchlight lamps, No. of 1, 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 and 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

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.	Amperes.	Revs. per Min.		Fuel Used.	Flash Point of Fuel.
MAIN	one	6	100	60	350	Steam Engine		
AUXILIARY								
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	.074	19	1/8"	50	24	P.V.R.	
	EQUALISER CONNECTIONS								
	AUXILIARY GENERATOR								
	EMERGENCY GENERATOR								
	ROTARY TRANSFORMER								
	AUXILIARY SWITCHBOARDS								Armoured
	ENGINE ROOM	2	.0016	3	20 -	3.5	20	-	-
	BOILER ROOM	2	"	3	20 -	1.5	40	-	L.C.
	ACCOMMODATION	2	.012	7	18 -	12.0	150	-	-
	WIRELESS	2	.007	7	20 -	4	150	-	Armoured
	SEARCHLIGHT								
	MASTHEAD LIGHT	2	.0018	3	20 -	1	180	-	L.C.
	SIDE LIGHTS	2	"	3	20 -	1	30	-	-
	COMPASS LIGHTS								
	POOP LIGHTS								
	CARGO LIGHTS								
	ARC LAMPS								
	HEATERS								

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								
	MAIN BILGE LINE PUMPS								
	GENERAL SERVICE PUMP								
	EMERGENCY BILGE PUMP								
	SANITARY PUMP								
	CIRC. SEA WATER PUMPS								
	CIRC. FRESH WATER PUMPS								
	AIR COMPRESSOR								
	FRESH WATER PUMP								
	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								

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.

W.M. BRADY & SON,  
 ENGLISH STREET,  
 MULLI.

Electrical Engineers.

Date 23<sup>rd</sup> April 29.

COMPASSES.

Distance between electric generators or motors and standard compass 68 feet  
 Distance between electric generators or motors and steering compass  
 The nearest cables to the compasses are as follows:—  
 A cable carrying 5 Ampères feet from standard compass feet from steering compass.  
 A cable carrying 5 Ampères feet from standard compass 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 degrees on course in the case of the standard compass, and degrees on course in the case of the steering compass.

COOK, WELTON & GEMMELL, LTD.,

W. A. Lipwale Builder's Signature.

Date 26/4/1929

Is this installation a duplicate of a previous case Yes. If so, state name of vessel Larwood

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

This vessel has been fitted on board under special survey & the materials & workmanship are sound & good.  
 It has been satisfactorily fitted on board, tried under working conditions & is eligible in my opinion to have record of Electric Light

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

J. R. M. 1.5.29

Total Capacity of Generators 6 Kilowatts.

The amount of Fee £ 3 : 0 : 19 April 29

Travelling Expenses (if any) £ : : 11.5.29

John Shackleton  
 Surveyor to Lloyd's Register of Shipping.

Committee's Minute

FRI. 3 MAY 1929

Assigned

Elec Light

Im. 228.—Transfer.  
 (The Surveyors are requested not to write on or below the space for Committee's Minute.)



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