

Rpt. 13.

No. 10529

# REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

18 DEC 1930

Date of writing Report 10 When handed in at Local Office 12<sup>th</sup> Dec 10 30 Port of BELFASTNo. in Survey held at BELFAST Date, First Survey 9<sup>th</sup> Dec. Last Survey 11<sup>th</sup> Dec. 1930

Reg. Book. 76346 on the M. V. "Laganbank" (Number of Visits 9)

Built at Belfast. By whom built Messrs Harland &amp; Wolff Ltd. Yard No. 879. Tons Gross Net

Owners Andrew Weir &amp; Co. Ltd. Port belonging to BELFAST When built 1930.

Electric Light Installation fitted by Messrs Harland &amp; Wolff Ltd. Contract No. 879. When fitted 1930.

Is the Vessel fitted for carrying Petroleum in bulk No. ✓

System of Distribution Two wire direct current to master boards &amp; 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

Are the lubricating arrangements of the generators as per Rule yes

Position of Generators Port &amp; starboard motor 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 On switchboard platform, aft motor 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

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 —

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 &amp; reverse current circuit breaker with equalizer switch &amp; time limits. Each out-going circuit has double pole change over switch &amp; double pole fuses

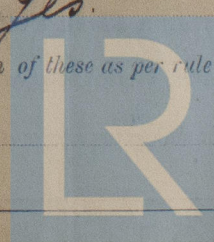
Instruments on main switchboard 4 ammeters 2 voltmeters arranged — for paralleling purposes.

Earth Testing, state what means are provided at the main switchboard for indicating the state of the insulation of the system Earth indicating lamps with change over switch to each set of bus-bars.

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 6. 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 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, uplakes 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 & clipped to perforated plating

If cables are run in wood casings, are the casings and caps secured by screws —, are the cap screws of brass —, are the cables run in separate grooves —. 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 —

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 to steel work of the ship are provided with an earthing connection equivalent to working conductors, 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

STAND-BY Emergency Supply, state position and method of control of the emergency supply and how the generator is driven 50 KW 220 volt generator driven by steam engine in motor rm. started, connected to main switchboard by double pole overload circuit breaker with time limits

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 —

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 —

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

how are the cables led —

where are the controlling switches situated —

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

Are 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 —

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 —

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

# 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	65	220	295	300	Diesel Engines	Fuel Oil	Above 150° F.
AUXILIARY	1	50	220	227	500	Single cylinder steam eng	—	—
EMERGENCY								
ROTARY TRANSFORMER								

## GENERATOR, LIGHTING AND HEATING CONDUCTORS.

DESCRIPTION.	CONDUCTORS.			COMPOSITION OF STRAND.		TOTAL MAXIMUM CURRENT.		Approximate Length (Lead and Return) Feet.	Insulated with	HOW PROTECTED.
	No. per Pole.	Total Effective Area per Pole Sq. Ins.	No.	Diameter.	In Circuit.	Rule.				
MAIN GENERATOR	1	.5	61	.103	295	332	120	Rubber	Hard Rubber	
EQUALISER CONNECTIONS	1	.15	37	.072	147.5	152	60	"	"	"
AUXILIARY GENERATOR	1	.3	37	.103	227	240	120	"	"	"
EMERGENCY GENERATOR	—	—	—	—	—	—	—	—	—	—
ROTARY TRANSFORMER	—	—	—	—	—	—	—	—	—	—
ENGINE ROOM	—	—	—	—	—	—	—	—	—	—
BOILER ROOM	—	—	—	—	—	—	—	—	—	—
AUXILIARY SWITCHBOARDS	—	—	—	—	—	—	—	—	—	—
ACCOMMODATION	—	—	—	—	—	—	—	—	—	—
WIRELESS	1	.01	7	.044	20	31	80	Rubber	Hard Rubber	
SEARCHLIGHT	—	—	—	—	—	—	—	—	—	—
MASTHEAD LIGHT	1	.002	3	.029	2	7.8	900	Rubber	Hard Rubber	
SIDE LIGHTS	1	.002	3	.029	2	7.8	90	"	"	"
COMPASS LIGHTS	1	.002	3	.029	.08	7.8	20	"	"	"
POOP LIGHTS	—	—	—	—	—	—	—	—	—	—
CARGO LIGHTS	1	.0048	110	.0076	9	10.0	154	Rubber	C.T.S.	
ARC LAMPS	—	—	—	—	—	—	—	—	—	—
HEATERS	1	.002	3	.029	5	7.8	48	Rubber	Hard Rubber	

## MOTOR CONDUCTORS.

DESCRIPTION.	No. of Motors.	CONDUCTORS.			COMPOSITION OF STRAND.		TOTAL MAXIMUM CURRENT.		Approximate Length (Lead and Return) Feet.	Insulated with	HOW PROTECTED.
		No. Per Pole.	Total Effective Area per Pole Sq. Ins.	No.	Diameter.	In Circuit.	Rule.				
BALLAST PUMP	1	1	.1	19	.083	104	118	200	Rubber	Hard Rubber	
MAIN BILGE LINE PUMPS	1	1	.0145	7	.052	36	37	120	"	"	"
FUEL OIL SERVICE PUMP	3	1	.002	3	.029	4	7.8	80	"	"	"
EMERGENCY BILGE PUMP	—	—	—	—	—	—	—	—	—	—	—
SANITARY PUMP	—	—	—	—	—	—	—	—	—	—	—
CIRC. SEA WATER PUMPS	2	1	.06	19	.064	78	83	160	"	"	"
CIRC. WATER PUMPS	1	1	.0045	7	.029	14	18.2	80	"	"	"
AIR COMPRESSOR	—	—	—	—	—	—	—	—	—	—	—
FRESH WATER PUMP	—	—	—	—	—	—	—	—	—	—	—
ENGINE TURNING GEAR	2	1	.0145	7	.052	32	37	60	"	"	"
ENGINE REVERSING GEAR	—	—	—	—	—	—	—	—	—	—	—
LUBRICATING OIL PUMPS	2	1	.1	19	.083	108	118	42	"	"	"
OIL FUEL TRANSFER PUMP	1	1	.0045	7	.029	16	18.2	90	"	"	"
WINDLASS	—	—	—	—	—	—	—	—	—	—	—
WINCHES, FORWARD	—	—	—	—	—	—	—	—	—	—	—
WINCHES, AFT	—	—	—	—	—	—	—	—	—	—	—
STEERING GEAR—											
(a) <del>Motor</del> <u>Hand Operated</u>	—	—	—	—	—	—	—	—	—	—	—
(b) MAIN MOTOR	2	1	.1	19	.083	91	118	440	"	Hard Rubber	
WORKSHOP MOTOR	2	1	.003	3	.036	8	12	30	"	"	"
VENTILATING FANS	2	1	.0045	7	.029	12	18.2	60	"	"	"
"	2	1	.0045	7	.029	12	18.2	200	"	"	"
PURIFIED FUEL OIL PUMP	1	1	.002	3	.029	6	7.8	96	"	"	"
LUB. OIL PURIFIER	1	1	.0045	7	.029	12	18.2	112	"	"	"
FUEL OIL PURIFIER	2	1	.0045	7	.029	12	18.2	110	"	"	"
BRINE PUMPS	2	1	.0045	7	.029	14	18.2	24	"	"	"
C.O. MOTOR	1	1	.1	19	.083	106	118	22	"	"	"

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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 Dec 11<sup>th</sup> 1930

#### COMPASSES.

Distance between electric generators or motors and standard compass 32 feet from nearest motor 128 ft. from generator

Distance between electric generators or motors and steering compass 28 " " " " 120 " " "

The nearest cables to the compasses are as follows:—

A cable carrying 2 Ampères 10 feet from standard compass 6 feet from steering compass.

A cable carrying 5 Ampères 16 feet from standard compass 12 feet from steering compass.

A cable carrying 16 Ampères 24 feet from standard compass 16 feet from steering compass.

Have the compasses been adjusted with and without the electric installation at work at full power

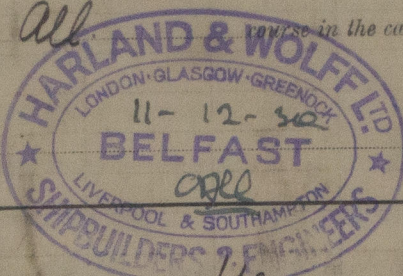
yes.

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 Dec 11<sup>th</sup> 1930

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

Ch. V "Foylebank"

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

This installation has been fitted under special survey. The materials and workmanship are sound and good. It has been tried under 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

23/12/30

J.

Total Capacity of Generators 245 Kilowatts.

The amount of Fee ... £ 37 : 12/6

Travelling Expenses (if any) £

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

Committee's Minute

TUE. 30 DEC 1930

Assigned

Elec Lt



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