

# REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

FEB 23 1938

Date of writing Report 19 When handed in at Local Office 22.3.1938 Port of Belfast  
 No. in Survey held at Belfast Date, First Survey 1<sup>st</sup> Dec 1937 Last Survey 14.2.1938  
 Reg. Book. on the Single Screw Motor Barge Vessel "Dewis" (Number of Visits 16.)  
 Built at Belfast By whom built Harland & Wolff Ltd. Yard No. 1002 When built 1938  
 Owners Lamport & Holt Line Ltd. Port belonging to Liverpool  
 Electric Light Installation fitted by Harland & Wolff Ltd. Contract No. 1002. When fitted 1938.  
 Is the Vessel fitted for carrying Petroleum in bulk No

System of Distribution Two 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 temperature rise 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 No, is an adjustable regulating resistance fitted in series with each shunt field Yes

Have certificates of test results for machines under 100 kw. been submitted and approved Yes. Have machines over 100 kw. been inspected by the Surveyors during manufacture and testing See Certs attached

Have certificates for generators under 100 kw. been supplied and approved See Certs attached  
 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 Engine Room Port Aft. Floor Level, 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 Engine Room Port Aft. Floor Level  
 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 Placed Together

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

is it of an approved type 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, is the non-hygroscopic insulating material of an approved

type 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, temperature rise of

omnibus bars Yes, individual fuses to voltmeter, pilot or earth lamp Yes, are moving parts of switches alive in the "off" position No, are all screws and nuts securing connections effectively locked Yes, are any fuses fitted on the live side of

switches No. Main Switchgear, description of switchgear for each generator and each outgoing circuit, and arrangement of equalizer switches

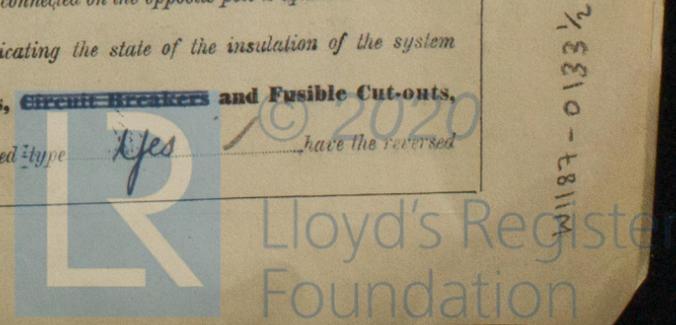
S.P. Switch for each generator. S.P. Change over Switch & D.P. Fuses for each circuit  
 Are turbine driven generators fitted with emergency trip switch as per rule Are cupboards or compartments containing switchboards composed of fire-resisting material or lined with approved material Yes Instruments on main switchboard 2 ammeters 1

voltmeters No synchronising device for paralleling purposes. For compound machines is the ammeter connected on the opposite pole to equaliser connection

No Equalizer Earth Testing, state what means are provided at the main switchboard for indicating the state of the insulation of the system Indicating Lamp on each Pole with D.P. Switch & Fuses switches, and Fusible Cut-outs, have the reversed

do these comply with the requirements of the Rules. Yes, are the fusible cutouts of an approved type Yes

15-2-38



current protection devices been tested under working conditions \_\_\_\_\_ are all fuses labelled as per rule 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 Single and Twin are the cables insulated and protected as per Tables IV, V, X, XI, XII or XIII of the Rules Yes

If the cables are insulated otherwise than as per Rule, are they of an approved type Yes **Fall of Pressure,** state maximum between bus bars and any point of the installation under maximum load 5.2 Volts **Cable Sockets,** are the ends of all cables having a sectional area of 0.04 square inch and above provided with soldering sockets Yes

**Paper Insulated and Varnished Cambric Insulated Cables,** If conductors are paper or varnished cambric insulated, is the dielectric at the exposed ends of the conductor protected from moisture by being suitably sealed with insulating compound \_\_\_\_\_, or waterproof insulating tape \_\_\_\_\_ **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 are cables laid under machines or floorplates \_\_\_\_\_ if so, are they adequately protected \_\_\_\_\_

Are cables in machinery spaces, galleys, lavatories, bathrooms and lavatories lead covered or run in conduit Lead covered on Bridge Deck and Bridge

**Support and Protection of Cables,** state how the cables are supported and protected Lead covered on Bridge Deck and Bridge if so, are they adequately protected if so, are they adequately protected

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,** are the cables and fittings in accordance with the special requirements Yes

**Joints in Cables,** state if any, and how made, insulated, and protected Properly constructed joint 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 Sheet Lead

**Earthing Connections,** state what earthing connections are fitted and their respective sectional areas Metal Portable Fittings not attached to ship's steelwork have earth conductor of same cross sectional area as conductor to which they 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 None

**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 None are they ventilated 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 None are any fittings placed in spaces where inflammable or explosive dust or gases are liable to be present, if so, how are they protected None how are the cables led \_\_\_\_\_ where are the controlling switches situated \_\_\_\_\_ are all fittings suitably ventilated Yes are all switches and lampholders constructed wholly of non-ignitable, non-absorbent materials Yes

**Heating and Cooking Appliances,** are they constructed and fitted as per Rule Yes are air heaters constructed and fitted as per Rule None

**Searchlight Lamps,** No. of None whether fixed or portable \_\_\_\_\_, 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 \_\_\_\_\_ have machines of over 100 BHP been inspected by the Surveyors during manufacture and testing None have certificates for all motors for essential services been supplied and approved \_\_\_\_\_

**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 None **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 \_\_\_\_\_ are all fuses of the filled cartridge type \_\_\_\_\_ are they of an approved type \_\_\_\_\_ If portable lamps for use in dangerous spaces are supplied, are they of a self-contained, battery-fed flameproof type approved for use in dangerous spaces \_\_\_\_\_

**Spare Gear,** if the vessel is for open sea service have spares been supplied as per Rule Yes are they suitably stored in dry situations 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 No. 1	1	20	220	91	685	8 1/2" Steam Engine		
MAIN No. 2	1	20	220	91	1000	3 1/2" S.O. 36" Vertical Diesel Engine		
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 Nominal Area per Pole Sq. Ins.	No.	Diameter.	In Circuit.	Rule.				
MAIN GENERATOR	1	0.1	19	.083	91	118	70	Rubber	Hard Rubber	
ENGINE ROOM LIGHTING	1	0.01	4	.044	22	31	130	Rubber	Hard Rubber	
AUXILIARY SWITCHBOARDS 'A'	1	0.06	19	.064	65	83	108	Rubber	Hard Rubber	
ACCOMMODATION LIGHTING	1	0.0070	4	.036	12.40	24.0	14.0	Rubber	Hard Rubber	
CREW	1	0.0045	4	.029	4.00	18.2	12.0	do	do	
NAVIGATION	1	0.0030	3	.036	3.64	12.9	22.0	do	Lead sheathed, armoured & braided	
CHARGE	1	0.0225	4	.064	8.50	46.0	8	do	Lead sheathed, armoured & braided	
CHARGE	1	0.0070	4	.036	4.00	24.0	22.0	do	do	
WIRELESS	1	0.0100	4	.044	15.00	31.0	14.0	do	Lead covered	
MASTHEAD LIGHT	1	0.0020	3	.029	0.18	4.8	54.0	do	L.S. & L.S. & B.	
SIDE LIGHTS	1	0.0020	3	.029	0.18	4.8	12.0	do	Lead covered	
COMPASS LIGHTS	1	0.0020	3	.029	0.14	4.8	96	do	do	
NAVIGATION	1	0.0020	3	.029	0.18	4.8	58.0	do	L.S. & L.S. & B.	
CARGO LIGHTS	1	0.0030	3	.036	2.40	12.9	42.0	do	L.S. & L.S. & B.	
CHARGE	1	0.0030	3	.036	0.43	12.9	25.0	do	do	

**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 Nominal Area per Pole Sq. Ins.	No.	Diameter.	In Circuit.	Rule.			
WORKSHOP MOTORS	2	1	0.003	3	.036	8.00	12.9	4.0	Rubber	Hard Rubber
VENTILATING FANS	4	1	0.003	3	.036	6.75	12.9	96	do	do
Fuel Oil Purifiers	2	1	0.003	3	.036	8.00	12.9	13.0	do	do
Lub. Oil Purifier	1	1	0.003	3	.036	8.00	12.9	4.0	do	do
Waste Heat Boiler	1	1	0.003	3	.036	4.00	12.9	96	do	do
Oil Fuel Heater	1	1	0.003	3	.036	8.40	12.9	9.0	do	do
Refrig. Mch.	1	1	0.003	3	.036	7.90	12.9	14.0	do	do

Note: - All cables on the Bridge & Bridge Deck are Lead covered.

The Electrical Equipment is installed in accordance with the approved plans.  
 All Insulated Conductors are guaranteed to withstand the immersion and resistance tests specified in the Rules.  
 The foregoing is a correct description.



Electrical Engineers.

Date FEBY. 14TH. 1938.

COMPASSES.

Minimum distance between electric generators or motors and standard compass 40 Feet from Lent Fan Motor

Minimum distance between electric generators or motors and steering compass 34 Feet

The nearest cables to the compasses are as follows:—

A cable carrying 0.068 Ampères on ~~14~~ standard compass. — feet from steering compass.

A cable carrying 0.068 Ampères — feet from standard compass on ~~14~~ steering compass.

A cable carrying 0.18 Ampères 14 feet from standard compass 6 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

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 FEBY. 14TH. 1938.

Is this installation a duplicate of a previous case Yes. If so, state name of vessel M.V. Deluis & M.V. Delane.

General Remarks (State quality of workmanship, opinions as to class, &c.) This installation has been fitted on board under special survey & in accordance with the approved plans & has been tested under full working conditions & found satisfactory. The materials & workmanship have been found to be first class.

Noted  
 R.C.C.  
 25-2-38.

Total Capacity of Generators 40 Kilowatts.

The amount of Fee ...	£ 25:0	When applied for,	22.2.1938
Belfast £12-10		When received,	28/2.1938
Liverpool £12-10			
Travelling Expenses (if any) £			

R. C. Clayton, Clerk of Harland & Wolff  
 Surveyor to Lloyd's Register of Shipping

Committee's Minute

FRI. 25 FEB 1938

Assigned

See Bel 26.12090

2m. 12.36.—Transfer. The Surveyors are requested not to write on or below the space for Committee's Minute.



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