

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

JUL 15 1937

Received at London Office

Date of writing Report 19 When handed in at Local Office 1 10³⁷ Port of Belfast
 No. in Survey held at Belfast Date, First Survey 24 Mar 1937 Last Survey 6-7-37 19
 Reg. Book. (Number of Visits.....15.....)
 on the Single Screw Motor Cargo Vessel "Delius" Tons { Gross 6065
 Net 3749
 Built at Belfast By whom built Harland & Wolff Ltd Yard No. 980 When built 1934
 Owners Lanport & Holt Line Ltd Port belonging to Liverpool
 Electric Light Installation fitted by Harland & Wolff Ltd Contract No. 980 When fitted 1934
 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
 approved Yes Have certificates of test results for machines under 100 kw. been submitted and _____
 Have machines over 100 kw. been inspected by the Surveyors during manufacture and testing _____

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 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 Aft of and above 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 In same compartment

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 D.P. Switch & D.P. Fuses 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 None 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 Equaliser

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, ~~Circuit Breakers~~ and Fusible Cut-outs, do these comply with the requirements of the Rules Yes are the fusible cutouts of an approved type Yes have the reversed _____

current protection devices been tested under working conditions None 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 are the cables insulated and protected as per Tables IV, V, X or XI of the Rules Yes

If the cables are insulated otherwise than as per Rule, are they of an approved type — Fall of Pressure, state maximum between bus bars and

any point of the installation under maximum load 4.8 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 in machinery spaces, galleys, laundries, bathrooms and lavatories lead covered or run in conduit L. B. in way of Bridge Deck & Bridge Structure. H. R. elsewhere

Support and Protection of Cables, state how the cables are supported and protected H. R. cables generally clipped to perforated

Sheet Metal Plates. Cables through barge spaces are L. B. in way of Bridge Deck & Bridge Structure. These are to type

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 Insulated 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 earthing conductors fitted of same cross

Section as main conductor to fitting —, 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

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 —

Arc Lamps, other than searchlight lamps, No. of None, 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 —

have machines of over 100 BHP been inspected by the Surveyors during manufacture and testing None 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 type approved by the Home Office —

Spare Gear, if the vessel is for open sea service have spares been supplied as per Rule Yes

PARTICULARS OF GENERATING PLANT.

Table with columns: DESCRIPTION OF GENERATOR, No. of, RATED AT (Kilowatts, Volts, Ampères, Revs. per Min.), DRIVEN BY, WHERE DRIVEN BY AN INTERNAL COMBUSTION ENGINE (Fuel Used, Flash Point of Fuel).

GENERATOR, LIGHTING AND HEATING CONDUCTORS.

Table with columns: DESCRIPTION, CONDUCTORS (No. per Pole, Total Nominal Area per Pole Sq. Ins.), COMPOSITION OF STRAND (No., Diameter), TOTAL MAXIMUM CURRENT (Circuit, Rule, AMPERES), Approximate Length (Lead and Return) Feet, Insulated with, HOW PROTECTED.

MOTOR CONDUCTORS.

Table with columns: DESCRIPTION, No. of Motors, CONDUCTORS (No. Per Pole, Total Nominal Area per Pole Sq. Ins.), COMPOSITION OF STRAND (No., Diameter), TOTAL MAXIMUM CURRENT (In Circuit, Rule, AMPERES), Approximate Length (Lead and Return) Feet, Insulated with, HOW PROTECTED.

Notes: - All cables in way of Bridge Deck and Bridge Structure are Lead covered.



All Conductors are of annealed copper conforming to British Standard Specification No. 7 (or International Electro-technical Commission Publication No. 28).

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 5-7-37

COMPASSES.

Distance between electric generators or motors and standard compass 52 Feet from Vert Fan Motor.

Distance between electric generators or motors and steering compass 48 Feet " " "

The nearest cables to the compasses are as follows:—

A cable carrying 0.09 Ampères on feet from standard compass — feet from steering compass.

A cable carrying 0.09 Ampères — feet from standard compass on feet from steering compass.

A cable carrying 0.18 Ampères 10 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. 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 5-7-37

Is this installation a duplicate of a previous case? No. If so, state name of vessel

General Remarks (State quality of workmanship, opinions as to class, &c. This installation has been fitted on)

board under special survey and in accordance with the approved plans and has been tested under full working conditions with satisfactory results. The materials and workmanship are good.

Good
YRM

22.7.37

Total Capacity of Generators 40. Kilowatts.

The amount of Fee ... £ 25 : 0 : 11. 7. 1937.

Travelling Expenses (if any) £ : : 5. 8. 19 37/8. 98

Charles J. Hunter & Co. Surveyors to Lloyd's Register of Shipping.

Committee's Minute

FRI 30 JUL 1937

Assigned See other F.E. npt

2m. 5. 34.—Transfer. The Surveyors are requested not to write on or below the space for Committee's Minute.



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