

JUL 3 1939

Rpt. 13.

No. 24115

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office

Date of writing Report 28th June 1939 When handed in at Local Office 19 Port of HAMBURG

No. in Survey held at HAMBURG Date, First Survey 10th May Last Survey 20th June 1939
(Number of Visits 12)

Reg. Book. 88230 on the Twin Screw Motor Tanker GALLIA Tons { Gross 9974
Net 5798

Built at HAMBURG By whom built Deutsche Wulf A.G. Yard No. 227 When built 1939

Owners The Texas Co (Norway) A/S Port belonging to Oslo

Electric Light Installation fitted by Allgemeine Elektrizitäts-Gesellschaft Contract No. When fitted 1939

Is the Vessel fitted for carrying Petroleum in bulk yes

System of Distribution Two wire, two conductor system volts, Power 110 volts.

Pressure of supply for Lighting 110 volts, Heating 110 volts, Power 110 volts.

Direct or Alternating Current, Lighting direct current Power direct current

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 —

Have machines over 100 kw. been inspected by the Surveyors during manufacture and testing —

Have certificates for generators under 100 kw. been supplied and approved certificates 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 Port forward side of engine room floor, 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 port side of transverse bulkhead at fore end of engine room floor

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 marble tested to 2000 volts AC, 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 —

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 For each generator - a double-pole overload circuit breaker

For each outgoing circuit - a double-pole change over switch and a fuse on each pole

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 3 ammeters 2

voltmeters — synchronising device for paralleling purposes. For compound machines is the ammeter connected on the opposite pole to equaliser connection —

Earth Testing, state what means are provided at the main switchboard for indicating the state of the insulation of the system Voltmeter with Ohm scale

Switches, Circuit Breakers and Fusible Cut-outs, yes have the reversed

do these comply with the requirements of the Rules yes are the fusible cutouts of an approved type yes

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current protection devices been tested under working conditions yes 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, twisted, or multicore yes are the cables insulated and protected as per Tables IV, X, XI, XII, XIII of the Rules generally
 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 Power 3.5 Volts, Lighting 3.0 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 yes, or waterproof insulating tape 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 yes are cables laid under machines or floorplates yes if so, are they adequately protected yes, by steel tubes
 Are cables in machinery spaces, galleys, lavatories, bathrooms and lavatories lead covered yes
Support and Protection of Cables, state how the cables are supported and protected sheet iron cable runs where necessary tables enclosed in galvanized steel casing or tubing
 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, are the cables and fittings in accordance with the special requirements yes
Joints in Cables, state if any, and how made, insulated, and protected gastight 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 brished yes state the material of which the bushes are made lead and wood
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 yes
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, in wheel house
 has each navigation lamp an automatic indicator as per Rule yes **Secondary Batteries,** are they constructed and fitted as per Rule yes
 are they ventilated 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
 are any fittings placed in spaces where inflammable or explosive dust or gases are liable to be present, if so, how are they protected gastight fitted
strongly protected glass bowls in pump room
in gastight tubing
 where are the controlling switches situated Bridge house
 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 yes
Searchlight Lamps, No. of incandescent lamps whether fixed or portable fixed on wheel house 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
 have machines of over 100 BHP been inspected by the Surveyors during manufacture and testing yes have certificates for all motors for essential services been supplied and approved certificates attached **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 steel masts **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 are all fuses of the filled cartridge type yes are they of an approved type yes
 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 yes
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.	Ampères.	Revs. per Min.		Fuel Used.	Flash Point of Fuel.
MAIN	2	each 35	115	305	400	1-cyl steam engine		
AUXILIARY								
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.	Circuit.	Rule.			
MAIN GENERATOR	2	95	37	1.81	305	303.2	60 / 56		
SHORE CONNECTIONS	1	150	61	1.77	300	205.6	90		
AUXILIARY GENERATOR									
EMERGENCY GENERATOR									
ROTARY TRANSFORMER									
ENGINE ROOM									
BOILER ROOM									
AUXILIARY SWITCHBOARDS	1	95	37	1.81	48	151.6	21		
	1	95	37	1.81	98	176			
	1	50	19	1.83	40	98.3	12.9		
	1	50	19	1.83	25				
	1	95	37	1.81	133	151.6	50	Rubber	In accommodation spaces lead covered
	1	95	37	1.81	146.6	151.6	50		All the other cables lead covered and armoured.
	1	95	37	1.81	150	151.6	60		
	1	16	19	1.04	39	49	20		
Navigation control board	1	2.5	1	1.78	2	15.5	98		
Electric stove	1	10	19	0.82	40	38.1	18		
SUEZ CANAL CONNECTION SEARCHLIGHT	1	35	19	1.3	60	63.2	340		
WIRELESS	1	16	19	1.04	19	49	210		
SEARCHLIGHT	1	4	19	0.52	17	22.1	26		
MASTHEAD LIGHT	1	1.5	1	1.38	0.38	9.4	150 / 130		
SIDE LIGHTS	1	1.5	1	1.38	0.38	9.4	24 / 23		
COMPASS LIGHTS	1	1.5	1	1.38	0.14	9.4	10		
POOP LIGHTS	1	1.5	1	1.38	0.38	9.4	265		
CARGO LIGHTS	1	2.5	1	1.78	4.55	15.5	106 / 126		
HEATERS	1	1.5	1	1.38	10	9.4	~ 10		

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.			
BALLAST PUMP										
MAIN BILGE LINE PUMPS										
GENERAL SERVICE PUMP										
EMERGENCY BILGE PUMP										
SANITARY PUMP	1	1	4	19	0.52	17.6	22.1	32		
CIRC. SEA WATER PUMPS FOR REFRIGERATING MACHINERY	1	1	4	19	0.52	17.6	22.1	54		
CIRC. FRESH WATER PUMPS.										
REFRIGERATING AIR COMPRESSORS	2	1	35	19	1.53	62	63.2	2 x 63		
FRESH WATER PUMP	1	1	4	19	0.52	17.6	22.1	40		
ENGINE TURNING GEAR	2	1	25	19	1.3	62	63.2	2 x 30		
ENGINE REVERSING GEAR										
LUBRICATING OIL PUMPS										
OIL FUEL TRANSFER PUMP										
WINDLASS										
WINCHES, FORWARD										
OIL PURIFIERS	2	1	10	19	0.82	25.6	38.1	2 x 32		Lead covered
WINCHES, AFT										Rubber and armoured
WATER CIRCULATING PUMPS FOR LA MONT DONKEY BOILERS STEERING GEAR	2	1	10	19	0.82	25.6	38.1	2 x 34		
(a) MOTOR GENERATOR										
(b) MAIN MOTOR										
WORKSHOP MOTOR LATHE	1	1	4	19	0.52	17.6	22.1	25		
VENTILATING FANS	2	1	2.5	1	1.78	12.4	15.5	2 x 76		
COOLING WATER PUMP FOR MAIN FUEL INJECTION VALVE NOZZLES	2	1	16	19	1.04	40.5	49	2 x 42		
DRILLING MACHINE	1	1	4	19	0.52	17.6	22.1	12		
GRINDING STONE	1	1	1.8	1	1.38	4	9.4	10		
STOVE BLOWER	1	1	2.5	1	1.78	6.1	9.4	7		
SOUNDING MACHINE	1	1	1.8	1	1.38	6	9.4	112		
MOTOR GENERATOR FOR ELECTRO SOUNDER	1	1	4	19	0.52	17.6	22.1	12		

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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.

ALLGEMEINE ELEKTRIZITÄTS-GESELLSCHAFT
ABTEILUNG SCHIFFBAU

Electrical Engineers.

Date 26.6.39.

COMPASSES.

Minimum distance between electric generators or motors and standard compass about 13 metres

Minimum distance between electric generators or motors and steering compass about 12 metres

The nearest cables to the compasses are as follows:—

A cable carrying 0.2 Ampères close to feet from standard compass close to feet from steering compass.

A cable carrying 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 nil degrees on course in the case of the standard compass, and nil degrees on course in the case of the steering compass.

DEUTSCHE WERFT
AKTIENGESELLSCHAFT

Builder's Signature.

Date 26.6.1939.

Is this installation a duplicate of a previous case yes

If so, state name of vessel

GERMANIA Hamburg Report No. 23050
BRITANNIA 23092

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

Material and workmanship of this Electrical Installation are of good quality.
It has been fitted under Special Survey in accordance with the approved plans, the Secretary's letter and otherwise in compliance with the requirements of the Rules, and is eligible in my opinion to be classed.

It has given satisfaction under working conditions.

Plan showing the Installation as actually fitted please find attached.

Noted

5/7/39

Total Capacity of Generators 70 Kilowatts.

The amount of Fee ... £ 22.6 19.39.

Travelling Expenses (if any) £ 8.7 19.39.

Committee's Minute

Assigned

Surveyor to Lloyd's Register of Shipping.

H. Röhrs