

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office

-4 MAY 1936

Date of writing Report 19/4/36 19 19 When handed in at Local Office 19 Port of Hamburg
 No. in Survey held at Kiel Date, First Survey 31/1/36 Last Survey 7/4/36 19
 Reg. Book. 39219 on the Steel S.S. "Nannagansett" (Number of Visits 10)
 Tons { Gross 10389
 Net 5940
 Built at Kiel By whom built F. Krupp Germania-Werft Yard No. 540 When built 1936
 Owners British-Mexican Petrol. Co. Ltd. Port belonging to London
 Electric Light Installation fitted by Fried. Krupp Germania-Werft A.G. Contract No. _____ When fitted 1936
 Is the Vessel fitted for carrying Petroleum in bulk yes

System of Distribution 2 wire system

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

Direct or Alternating Current, Lighting D.C. Power D.C.

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 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 engine room, port side, 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 engine room, port side

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 Ebonite Asbestos, 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 ✓, 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

Generators: A double pole overload line breaker. Outg. circs: A double pole change over switch

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 4 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

Voltsmeter with Ohm scale and pilot lamps 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 Joint Boxes, Section and Distribution Boards, is the

construction, protection, insulation, material, and position of these as per rule **Cables:** Single, twin, concentric, or multicore, *single steel* are the cables insulated and protected as per Tables IV, V, X or XI of the Rules

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 *3.2 Volts*

Cable Sockets, are the ends of all cables having a sectional area of 0.04 square inch and above provided with soldering sockets

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 *none*, 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 Are cables in machinery spaces, galleys, lavatories, bathrooms and lavatories lead covered or run in conduit *lead covered*

Support and Protection of Cables, state how the cables are supported and protected *armoured cables supported by clips on deck in way of fore's gangway protected with sheet iron*

If cables are run in wood casings, are the casings and caps secured by screws *none*, 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

Refrigerated Chambers, are the cables and fittings in accordance with the special requirements

Joints in Cables, state if any, and how made, insulated, and protected *water tight joint boxes*

Watertight Glands and Deck Tubes, are all cables passing through decks and watertight bulkheads provided with deck tubes or watertight glands

Bushes in Beams and Non-watertight Partitions, where unarmoured cables pass through beams and non-watertight partitions, are the holes efficiently bushed state the material of which the bushes are made *Cheraton Compound, hemp.*

Earthing Connections, state what earthing connections are fitted and their respective sectional areas

are their connections made as per Rule

Alternative Lighting, are the groups of lights in the propelling machinery space arranged as per Rule **Emergency Supply,** state position and method of control of the emergency supply and how the generator is driven

Navigation Lamps, are these separately wired controlled by separate switch and separate fuses are the fuses double pole

are the switches and fuses grouped in a position accessible only to the officers on watch

has each navigation lamp an automatic indicator as per Rule **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

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*

(Lamps fitted in gas tight pockets arranged outside in deck house)

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

Lamps fitted in gas tight pockets arranged outside in deck house & deck plating, how are the cables led for the latter in conduit

where are the controlling switches situated *outside pump room, in bridge deck house*

are all fittings suitably ventilated are all switches and lampholders constructed wholly of non-ignitable, non-absorbent materials

Heating and Cooking Appliances, are they constructed and fitted as per Rule are air heaters constructed and fitted as per Rule

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

Arc Lamps, other than searchlight lamps, No. of *1*, are their live parts insulated from the frame or case are their fittings as per Rule

Motors, are their working parts readily accessible are the coils self-contained and readily removable for replacement

are the brushes, brush holders, terminals and lubricating arrangements as per Rule are the motors placed in well-ventilated compartments in which inflammable gases cannot accumulate and clear of all inflammable material

are they protected from mechanical injury and damage from water, steam or oil are their axes of rotation fore and aft 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 **Control Gear and Resistances,** are the generator field and motor speed regulators, starters and controllers constructed and fitted as per Rule

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

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

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	2	35 each	115	305	275	Steam engines		
AUXILIARY								
EMERGENCY								
ROTARY TRANSFORMER								

GENERATOR, LIGHTING AND HEATING CONDUCTORS.

DESCRIPTION.	CONDUCTORS.			COMPOSITION OF STRAND.		TOTAL MAXIMUM CURRENT, AMPERES.		Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.
	No. per Pole.	Total Nominal Area per Pole Sq. Ins.	No.	Diameter.	In Circuit.	Rate.				
MAIN GENERATOR	2	150	61	1.77	305	275	15 13	Rubber	Lead covered and armoured.	
EQUALISER CONNECTIONS						206				
AUXILIARY GENERATOR										
EMERGENCY GENERATOR										
ROTARY TRANSFORMER MOTOR GENERATOR										
ENGINE ROOM	1	75	Copper Bus		75					
BOILER ROOM			5AT							
AUXILIARY SWITCHBOARDS										
Bridge deck	1	120	61	1.59	120	127	200			
Peep	1	50	19	1.53	25	23	57			
Workshop	1	50	19	1.53	120	102.5	88			
Galley	1	50	19	1.53	120	102.5	120			
Steering gear I	1	70	27	1.58	160	196	85			
Accommodation " " " " " "	1	70	27	1.58	160	196	85			
Centr. Navigat. Lamps	1	2	1	1.6	16	15	230			
Shore connection	1	155	61	1.77	200	233	25			
Test board El. Stone	1	2	1	1.6	25 fuse	15	26			
Reft. machinery	1	16	19	1.02	30	49	24			
WIRELESS	1	16	19	1.02	10	22	19			
SEARCHLIGHT	1	4	19	0.82	12.5	22	38			
MASTHEAD LIGHT	1	2.5	1	1.75	5	16	100			
SIDE LIGHTS	1	2.5	1	1.75	5	16	28			
COMPASS LIGHTS	1	2.0	1	1.6	5	16	25			
POOP LIGHTS	1	2.5	1	1.75	5	16	210			
CARGO LIGHTS	1	2.5	1	1.75	6	16	186			
ARC LAMPS										
Heating El. Stone	1	50	19	1.53	100	98	120			

MOTOR CONDUCTORS.

DESCRIPTION.	No. of Motors.	CONDUCTORS.			COMPOSITION OF STRAND.		TOTAL MAXIMUM CURRENT, AMPERES.		Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.
		No. Per Pole.	Total Nominal Area per Pole Sq. Ins.	No.	Diameter.	In Circuit.	Rate.				
BALLAST PUMP									Rubber	Lead covered and armoured.	
MAIN BILGE LINE PUMPS											
GENERAL SERVICE PUMP											
EMERGENCY BILGE PUMP											
SANITARY PUMP											
CIRC. SEA WATER PUMPS											
CIRC. FRESH WATER PUMPS											
AIR COMPRESSOR	1	1	10	19	0.82	45	38	15			
FRESH WATER PUMP	1	1	2.5	1	1.75	3	16	16			
ENGINE TURNING GEAR	1	1	35	19	1.33	80	75	24			
ENGINE REVERSING GEAR											
LUBRICATING OIL PUMPS spare	1	1	2.5	1	1.75	6	16	26			
OIL FUEL TRANSFER PUMP											
WINDLASS											
WINCHES, FORWARD											
W. O. oil separator	1	1	2.5	1	1.75	20	16	23			
WINCHES, AFT											
STEERING GEAR—											
(a) MOTOR GENERATOR	2	1	70	27	1.58	28	124	10			
(b) MAIN MOTOR	2	1	70	27	1.58	20	124	10			
WORKSHOP MOTOR											
VENTILATING FANS & Blowers	2	1	10	19	0.82	35	35	50			
Lathe I	1	1	2.5	19	1.3	60	63	16			
" II	1	1	2	1	1.6	8	15	24			
Shaping machine	1	1	6	19	0.64	20	29	26			
Grinding	1	1	2	1	1.6	5	15	23			
Drilling	1	1	4	19	0.82	16	22	24			

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.

**FRIED. KRUPP
GERMANIA WERFT
Aktiengesellschaft.**

[Signature]

Electrical Engineers.

Date 28.4.36

COMPASSES.

Distance between electric generators or motors and standard compass 60 m

Distance between electric generators or motors and steering compass 65 m

The nearest cables to the compasses are as follows:—

A cable carrying 36 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 *any* course in the case of the standard compass, and *nil* degrees on *any* course in the case of the steering compass.

**FRIED. KRUPP
GERMANIA WERFT
Aktiengesellschaft.**

[Signature]

Builder's Signature.

Date 28.4.36

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

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

This electric installation has been fitted in accordance with the approved plans, the Secretary's letters and in conformity with the Rules. Materials and workmanship are of good quality. It has given satisfaction under working conditions and was found in order.

Total Capacity of Generators 70 Kilowatts.

The amount of Fee *2 Mks \$ 590.—* : When applied for, *2/5/36*
Travelling Expenses (if any) £ : When received, *20.5.19 36 20/5*

[Signature]
Surveyor to Lloyd's Register of Shipping.

Committee's Minute TUE 19 MAY 1936

Assigned *See minute on J.E. Rpl*

2m. 5.34. Transfer. The Surveyors are requested not to write on or below the space for Committee's Minute.