

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office

NOV 17 1938

Date of writing Report 11th Nov. 1938 When handed in at Local Office to Port of BREMEN

No. in Survey held at VEGESACK Date, First Survey 23rd Sept. 38 Last Survey 3rd Nov. 1938
Reg. Book, 73256 on the SINGLE SCREW TANKER DIALA (Number of Visits 14)

Tons { Gross 8106
Net 4781

Built at VEGESACK By whom built BREMER VULKAN Yard No. 757 When built 1938

Owners ANGLO SAXON PETROLEUM CO. LD. Port belonging to LONDON

Electric Light Installation fitted by ALLGEMEINE ELECTRICITÄTS GES. HAMBURG Contract No. When fitted 1938

Is the Vessel fitted for carrying Petroleum in bulk yes

System of Distribution Two Wire System ✓

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

Have certificates for generators under 100 kw. been supplied and approved 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 starboard 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 starboard 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 marked ✓

is all insulation of high dielectric strength and of permanently high insulation resistance yes, tested 2000 V. ✓

is it of an approved type yes ✓, if semi-insulating material is used, are all conducting parts insulated from the slab with mica or micaite 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 For each generator a double pole linked switch and a fuse on each pole ✓

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 2 ammeters 2 voltmeters ✓

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

Earth Testing, state what means are provided at the main switchboard for indicating the state of the insulation of the system earth testing 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 ✓



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, twin, concentric, or multicore are the cables insulated and protected as per Tables IV, V, X, XI, XII or XIII of the Rules Hand made

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 2.8 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 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 yes are cables laid under machines or floorplates no if so, are they adequately protected -

Support and Protection of Cables, state how the cables are supported and protected lead covered cables on deck along gangway in gas tubes in engine room etc. on steel cable leads.

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 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 in watertight joints 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 wood and lead

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 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 yes, lower bridge deck how are the cables led in gas tight tubing, lamps of gas tight type where are the controlling switches situated upper bridge deck

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 none, are air heaters constructed and fitted as per Rule -

Searchlight Lamps, No. of one searchlight, whether fixed or portable 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 see memo 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	WHEN DRIVEN BY AN INTERNAL COMBUSTION ENGINE.	
		Kilowatts.	Volts.	Amps.	Revs. per Min.		Fuel Used.	Flash Point of Fuel.
MAIN	1	16	115	139	390	Steam Engine		
AUXILIARY	1	16	115	139	390	Diesel Motor	Diesel Oil	above 150° F
EMERGENCY								
ROTARY TRANSFORMER								

GENERATOR, LIGHTING AND HEATING CONDUCTORS.

DESCRIPTION.	CONDUCTORS.		COMPOSITION OF STRAND.		TOTAL MAXIMUM CURRENT.		Approximate Length. (Lead and Return.)	Insulated with	HOW PROTECTED.
	No. per Pole.	Total Nominal Area per Pole Sq. mm.	No.	Diameter.	Circuit.	Rule.			
MAIN GENERATOR	1	95	37	1.81	139	150	12	rubber	lead covered & wire armoured
EQUALISER CONNECTIONS									
AUXILIARY GENERATOR	1	95	37	1.81	139	150	13		
SHORE CONNECTION	1	95	37	1.81	139	150	60		
ROTARY TRANSFORMER									
ENGINE ROOM	1	6	19	0.52	11	23	72		
BOILER ROOM	1	6	19	0.52	12	23	24		
AUXILIARY SWITCHBOARDS									
II AMIDSHIP	1	25	19	1.3	24	62	202		
FORSHIP	1	4	19	0.52	4	23	116		
I AFTSHIP	1	10	19	0.82	22	38	56		
PLUGS ON DECK	1	10	19	0.52	8	38	168		
WORKSHOP	1	35	19	1.53	80	84	72		
ACCOMMODATION									
NAVIGATION LIGHTS	1	10	19	0.82	2	38	200		
WIRELESS	1	16	19	1.04	17	48	212		
SEARCHLIGHT	1	35	19	1.53	45	77	324		
MASTHEAD LIGHT	1	1.5	1	1.38	0.4	9	134 approx 140		
SIDE LIGHTS	1	1.5	1	1.38	0.4	9	24		
COMPASS LIGHTS	1	1.5	1	1.38	0.4	9	18		
POOP LIGHTS	1	1.5	1	1.38	0.4	9	244		
CARGO LIGHTS ON MASTS	1	1.5	1	1.38	2	9	120 approx 140		
HEATERS									

MOTOR CONDUCTORS.

DESCRIPTION.	No. of Motors.	CONDUCTORS.		COMPOSITION OF STRAND.		TOTAL MAXIMUM CURRENT.		Approximate Length. (Lead and Return.)	Insulated with	HOW PROTECTED.
		No. per Pole.	Total Nominal Area per Pole Sq. mm.	No.	Diameter.	In Circuit.	Rule.			
BALLAST PUMP										
MAIN BILGE LINE PUMPS										
GENERAL SERVICE PUMP										
EMERGENCY BILGE PUMP										
SANITARY PUMP										
CIRC. SEA WATER PUMPS										
CIRC. FRESH WATER PUMPS										
AIR COMPRESSOR										
FRESH WATER PUMP										
ENGINE TURNING GEAR	1	1	50	19	1.83	120	120 (24)	66	rubber	lead covered & wire armoured
ENGINE REVERSING GEAR										
LUBRICATING OIL PUMPS										
OIL FUEL TRANSFER PUMP	1	1	4	19	0.52	18	23	92		
WINDLASS										
WINCHES, FORWARD										
VENTILATOR MIDSHIPS	1	1	10	19	0.82	38	38	208		
WINCHES, AFT										
STEERING GEAR—										
(a) MOTOR GENERATOR										
(b) MAIN MOTOR										
WORKSHOP MOTOR										
VENTILATING FANS ENGR.	1	1	10	19	0.82	34.5	38	28		
GRIND STONE	1	1	6	19	0.64	24.5	27	32		
DRILLING MACHINE	1	1	4	19	0.52	17.7	23	24		
LATHE	1	1	2.5	1	1.78	12.8	16	35		
OIL SEPARATOR	1	1	4	19	0.52	17.7	23	16		
OIL FUEL PUMP (Boiler)	1	1	1.5	1	1.38	6	9	58		

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 ELEKTRICITÄTS-GESELLSCHAFT
ABTEILUNG SCHIFFBAU

Albaum

Electrical Engineers.

Date 5. November 38

COMPASSES.

Minimum distance between electric generators or motors and standard compass 15 m

Minimum distance between electric generators or motors and steering compass 20 m

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 0, 4 Ampères 4 feet from standard compass 4 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 *ja*

Has the effect of switching on and off circuits, motors and other electro-magnetic apparatus within the vicinity of the compasses been noted *ja*

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.

Bremer Vulkan
Schiffbau und Maschinenfabrik

Albaum

Builder's Signature.

Date 9/11/38

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

General Remarks (State quality of workmanship, opinions as to class, etc. *This Electric Installation*)

has been built under Special Survey in accordance with the approved plan, the Surveyor's letter, and in conformity with the requirements of the Rules. The materials used in the construction and the workmanship are of good quality. Regarding conductors the German Standards have been applied generally. The whole installation has been tested under full working conditions and found satisfactory in all respects.

*Noted
22/11/38*

Total Capacity of Generators *32* Kilowatts.

The amount of Fee ... *RM 460,-* When applied for, 19...

Travelling Expenses (if any) £ : : *2/12/38* When received.

A. Carstmann
Surveyor to Lloyd's Register of Shipping.

Committee's Minute

FRI. 25 NOV 1938

Assigned

See FE made rpt

2m, 12, 36.—Transfer. The Surveyors are requested not to write on or below the space for Committee's Minute.



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