

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office -8 OCT 1936

Date of writing Report 17th Sept. 1936 When handed in at Local Office 10 Port of BREMEN

No. in Survey held at BREMEN Date, First Survey 17th June 36 Last Survey 17th Sept. 1936
 Reg. Book. 85086 on the TWIN SCREW STEAMER TERJE VIKEN (Number of Visits 24)

Built at BREMEN By whom built DEUTSCHE SCHIFF UND MASCHINENBAU A.G. WERK: A.G. WESER Yard No. 914 When built 1936

Owners UNITED WHALERS LTD. Port belonging to LONDON

Electric Light Installation fitted by ALLGEMEINE ELECTRICITÄTS GES. Contract No. _____ When fitted 1936

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 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 yes, 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 _____

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 on elevated platform, 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 on generator platform

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
 horizontally from or vertically above the switchboards _____ and _____, are they constructed wholly of durable, non-ignitable non-absorbent materials From resp. marble, 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 _____, 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 Clear space 2000 V. A.C., 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 automatic switch and equalizing device. For each outgoing circuit a double pole switch and a fuse on each pole resp. E&P Automatic

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 6 ammeters 4

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 galvanometer
 Switches, Circuit Breakers 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

W91-0146 (1/2)



current protection devices been tested under working conditions *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, twin and multicore* are the cables insulated and protected as per Tables IV, V, X or XI of the Rules *yes, Common Standards*

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 1/2%*

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 *no paper insulated cables* **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 *lead covered*

Support and Protection of Cables, state how the cables are supported and protected *In engine & boiler rooms on strong iron cable leads, In Factory Deck & Pump room in gas tight luting*

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 *watertight 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 *lead*

Earthing Connections, state what earthing connections are fitted and their respective sectional areas *yes*, 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 *yes, in Pump Room and Factory Deck. There are Electric Motors & plug points fitted in Factory Deck & in gas tight luting also plug points in Pump Room. See London Letters: 8.6.36, 7.7.36, 7.9.36.*

where are the controlling switches situated *in home on main 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 *yes*, are air heaters constructed and fitted as per Rule *yes*

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

Arc Lamps, other than searchlight lamps, No. of *yes*, are their live parts insulated from the frame or case *yes*, 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, as far as practicable* 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 *drip proof type* 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* **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 *yes* **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, see above letters.* 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 type approved by the Home Office *none*

Spare Gear, if the vessel is for open sea service have spares been supplied as per Rule *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	1	75	115	650	325	Steam Engine		
MAIN	2	50	115	435	325			
EMERGENCY								
ROTAARY TRANSFORMER	1	12	220/115	55/105				

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 ... 75 KW	2	600	2 x 91	2.05	650	650	20	rubber	lead covered wire
EQUALISER CONNECTIONS ...	1	300 & 240	91	2.05 & 1.84	325 & 215	325 & 215	20	-	armoured
MAIN GENERATOR 50 KW	1	500	91	2.65	435	475	20	-	-
EMERGENCY GENERATOR									
ROTAARY TRANSFORMER	1	35	19	1.53	52	80	40	-	-
ENGINE ROOM	1	70	37	1.55	104	125	15	-	-
BOILER ROOM	1	15	1	1.78	4	9	40	-	-
BOILER ROOM	1	15	1	1.78	4	9	60	-	-
AUXILIARY SWITCHBOARDS									
LIGHTING I. II & III	1	70	37	1.55	70	125	330	-	-
IV V VI VII & VIII	1	50	19	1.83	60	100	280	-	-
IX & X	1	35	19	1.53	40	80	40	-	-
XI & XII	1	35	19	1.53	40	80	40	-	-
POWER I	1	300	91	2.05	300	325	300	-	-
POWER II	1	300	91	2.05	320	325	300	-	-
POWER III & IV	2	240	2 x 91	1.84	510	550	160	-	-
V	1	95	37	1.81	92	150	50	-	-
Control (switchboard)	1	10	19	0.82	4	38	330	-	-
WIRELESS	1	50	19	1.83	50	100	330	-	-
SEARCHLIGHT	1	15	1	1.78	0.5	9	300	-	-
MASTHEAD LIGHT	1	15	1	1.78	0.5	9	15	-	-
SIDE LIGHTS	1	15	1	1.78	0.5	9	10	-	-
COMPASS LIGHTS	1	15	1	1.78	0.5	9	320	-	-
POOP LIGHTS	1	15	1	1.78	0.5	9		-	-
CARGO LIGHTS									
ARC LAMPS									
HEATERS									

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										
POTATO WASHING MACHINE	1	1	15	1	1.78	4	9	20	rubber	lead covered and wire armoured
DISH CLEANER	1	1	15	1	1.78	8	9	10	-	-
CIRC. SEA WATER PUMPS	1	1	4	19	0.52	16	22	15	-	-
REFRIGER. ROOM BLOWER	1	1	2.5	1	1.78	12	15	20	-	-
MEAT CUTTER	1	1	10	19	0.82	34.5	38	20	rubber	lead covered & wire armoured
WHALE OIL SEPARATORS	11	1	10	19	0.82	34.5	38	20	-	-
FRESH WATER PUMP	1	1	15	1	1.78	5	9	10	-	-
BRUSH APPARATUS	1	1	15	1	1.78	5	9	10	-	-
OVEN BLOWERS	2	1	10	19	0.82	36	38	50	-	-
WINDMILL	1	1	10	19	0.82	36	38	50	-	-
OIL PUMPS FOR HOT AIR BOILER	4	1	15	1	1.78	8	9	50	-	-
LUBRICATING OIL PUMPS	1	1	15	1	1.78	6	9	10	-	-
BREAD CUTTER	1	1	15	1	1.78	3.5	9	15	-	-
FORGE BLOWER	1	1	2.5	1	1.78	12	15	10	-	-
GRIND STONE	1	1	2.5	1	1.78	12	15	10	-	-
WINDMILL	1	1	15	1	1.78	3.5	9	10	-	-
COFFEE MILL	1	1	15	1	1.78	3.5	9	10	-	-
LIFT. WINCH	1	1	4	19	0.52	16	22	15	-	-
COLD AIR BLOWER	1	1	15	1	1.78	8	9	15	-	-
BLOWER FOR DRYING APP.	2	1	2.5	19	1.3	60	62	45	-	-
BLOWER FOR STOVE	1	1	4	19	0.52	16	22	20	-	-
WORKSHOP MOTOR	1	1	35	19	1.04	14	80	20	-	-
VENTILATING FANS	2	1	35	19	1.53	72	80	35	-	-
FANS	1	1	4	19	0.52	16	22	40	-	-
FANS	6	1	15	1	1.78	5	9	20	-	-
RYNANALUM Pump	1	1	10	19	0.82	36	38	20	-	-
OIL SEPARATOR	1	1	4	19	0.52	16	22	28	-	-
BAKERS OVEN	1	1	120	61	1.59	175	175	10	-	-
MEAT CUTTER	1	1	2.5	1	1.78	10	15	20	-	-

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.

ALLGEMEINE ELEKTRICITÄTSGESSELLSCHAFT
ABTEILUNG SCHIFFBAU
BREMEN

Electrical Engineers.

Date 17. Sept. 1936

Gregor

COMPASSES.

Distance between electric generators or motors and standard compass 10.8 m

Distance between electric generators or motors and steering compass 10.8 m

The nearest cables to the compasses are as follows:—

A cable carrying 3 Ampères 8 feet from standard compass 8 feet from steering compass.

A cable carrying 20 Ampères 10 feet from standard compass 10 feet from steering compass.

A cable carrying 0.2 Ampères close to feet from standard compass close to 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 courses* course in the case of the standard compass, and *nil* degrees on *all courses* course in the case of the steering compass.

Deutsche Schiff- und Maschinenbau Aktiengesellschaft
Werk: Act. Ges. "Weser"

Builder's Signature.

Date 24. IX 36

H. W. W. W.

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 Electric Installation*)

has been made under Special Survey in accordance with the approved plans, the Secretary's letters, and in conformity with the requirements of the Rules, with exceptions as have been approved by London letters 8.6.36, 7.7.36, 2.9.36.

Regarding conductors the German Standards have been applied generally.

Materials and workmanship are of good quality.

This Electric Installation has been tested under working conditions and found satisfactory in all respects.

*Noted
JRM
13.10.36*

Total Capacity of Generators *175* Kilowatts.

The amount of Fee ... *RM 800.-* : *17.9.19.36*

Travelling Expenses (if any) £ *✓* : *22.10.19.36*

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

Committee's Minute *FRI. 16 OCT 1936*

Assigned *see 28 Machy Report*

2m. 5. 5. 4. — Transfer.
The Surveyors are requested not to write on or below the space for Committee's Minute.



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