

No. 1947M

REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL) Received at London Office

18 AUG 1930

Date of writing Report 9th August, 1930 When handed in at Local Office 10 Port of HAMBURG

No. in Survey held at Hamburg Date, First Survey 21st June, Last Survey 31st July, 1930
 Reg. Book. on the Steel Sc. "VIGRID" (Number of Visits 1)

Built at Hamburg By whom built Deutsche Werft A-G. Yard No. 141 When built 1930
 Owners Skibsaktieselskapet "Vigrid", Bruun & K. Lippe Port belonging to Tönsberg

Electric Light Installation fitted by A.E.G. Allgemeine Elektr. Gesellsch. Contract No. _____ When fitted 1930

System of Distribution Two wire two-conductor system, separate conductors, except small areas

Pressure of supply for Lighting 110 volts, **Heating** _____ volts, **Power** 220 volts.

Direct or Alternating Current, Lighting direct **Power** direct

If alternating current system, state frequency of periods per second _____

Generators, do they comply with the requirements regarding rating 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

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, are they clear of all inflammable material yes
 is the ventilation in way of the generators satisfactory 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 are the prime movers and _____

Earthing, are the bedplates and frames of the generating plant efficiently earthed yes their respective generators in metallic contact yes

Main Switch Boards, where placed Engine Room, port side, special elevated 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, 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, 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
 and is the frame effectively earthed yes Are the fittings as per Rule regarding: — spacing or shielding of live parts _____, accessibility of all parts yes, absence of fuses on back of board yes, proportion of omnibus bars yes, individual fuses to voltmeter, pilot or earth lamp yes, connections of switches yes

Main Switchgear, description of switchgear for each generator and each outgoing circuit, and arrangement of equalizer switches For each generator: A fuse on each pole and a double pole linked switch. For each outgoing circuit: A fuse on each pole and a double pole switch.

Instruments on main switchboard 4 ammeters 2 voltmeters _____ synchronising device for paralleling purposes.

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, do these comply with the requirements of the Rules yes

Joint Boxes Section and Distribution Boards, is the construction, protection, insulation, material, and position of these as per rule yes

trin 2 multicore for
Cables: Single, twin, concentric, or multicore. *SMALL AREAS* are the cables insulated and protected as per Tables IV or V of the Rules. *generally*

Fall of Pressure, state maximum between bus bars and any point of the installation under maximum load. *light 5.5 volts, Power 7.5 volts*

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

Paper Insulated Cables. If cables are paper covered, is the dielectric at the exposed ends of the conductor protected from moisture by being suitably sealed with insulating compound. *no paper insulated cables fitted.*

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*

Support and Protection of Cables, state how the cables are supported and protected. *Armoured cables supported by clips, on deck & crews gangways running in troughs, were exposed to mechanical risk, in tubes or covered by sheet iron.*
 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, if lights are fitted, are the cables and fittings in accordance with the special requirements. *yes*

Joints in Cables, state if any, and how made, insulated, and protected. *gas and 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. *hard wood*

Earthing Connections, state what earthing connections are fitted and their respective sectional areas. *Power and light on the two-wire system.*

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. *in Eng. room from deck, starboard side, generator driven by single cyl. steam engine - Connected to main switchboard.*

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. *✓*

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. *✓*

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,* *gas tight fittings, closed glass bottles.*, how are the cables led

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

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

Arc Lamps, other than searchlight lamps, No. of *✓*, 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 *✓*

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*
 If portable lamps for use in dangerous spaces are supplied, are they of a type approved by the Home Office. *yes*

The German Standards have been applied

PARTICULARS OF GENERATING PLANT.

DESCRIPTION OF GENERATOR.	No of	RATED AT				DRIVEN BY	WHERE DRIVEN BY AN INTERNAL COMBUSTION ENGINE.	
		Kilowatts.	Volts.	Ampères.	Rev. per Min.		Fuel Used.	Flash Point of Fuel.
MAIN	2	66 each	230	287	390/375	4SCSA Oil Engine	Diesel Oil	170°F
AUXILIARY	1	12	115	104	400	Steam Engine		
EMERGENCY	1							
ROTARY TRANSFORMER	2	4.7	115	52	2000			
		4	115	35	2000			

LIGHTING AND HEATING CONDUCTORS.

Ref. No.	DESCRIPTION.	No. of Conductors.	Effective Area of each Conductor. Sq. mm.	COMPOSITION OF STRAND.		Total Maximum Current. Ampères.	Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.
				No.	Diameter.				
	MAIN GENERATORS.	2	240 mm ²	91	1.84 mm	287	14m-22m	Vulcanized Rubber	Lead covered and armoured
	EQUALISER CONNECTIONS	1	185 "	61	1.97 "		7m-11 "		
	AUXILIARY GENERATOR	1							
	EMERGENCY GENERATOR	2	70 "	37	1.55 "	104	50 m		
	ROTARY TRANSFORMER	2	10/50 "	19/19	1.09/1.09	52/35	55 "		
	AUXILIARY SWITCHBOARDS								
	ENGINE ROOM	2	1.5 "	2	1.38	6	300 "		
	BOILER ROOM	2	1.5 "	2	1.38	6			
	ACCOMMODATION	2	1.5 "	2	1.38	6	1400 "		
	WIRELESS	2	10 "	10	0.82	25	200 "		
	SEARCHLIGHT								
	MASTHEAD LIGHT	2	1.5 "	2	1.38	6			
	SIDE LIGHTS	2	1.5 "	2	1.38	6	500 "		
	COMPASS LIGHTS	2	1.5 "	2	1.38	6			
	POOP LIGHTS	2	1.5 "	2	1.38	6			
	CARGO LIGHTS	2	1.5 "	2	1.38	6	160 "		
	ARC LAMPS								
	Heating Oil Strainers with heating appliances	2	16 "	19	1.04	50	20 "		

MOTOR CONDUCTORS.

Ref. No.	DESCRIPTION.	No. of Motors.	Effective Area of each Conductor. Sq. mm.	COMPOSITION OF STRAND.		Total Maximum Current. Ampères.	Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.	
				No.	Diameter.					
	BALLAST PUMP							Vulcanized Rubber	Lead covered and armoured	
	MAIN BILGE LINE PUMPS	1	6	19	0.64	25	50			
	GENERAL SERVICE PUMP									
	EMERGENCY BILGE PUMP									
	SANITARY PUMP	2								
	CIRC. SEA WATER PUMPS	2	50	19	1.83	100	80			
	CIRC. FRESH WATER PUMPS	2	16	19	1.04	50	80			
	AIR COMPRESSOR	2	120	61	1.5	200	40			
	FRESH WATER PUMP	1	2.5	2	1.78	15	50			
	ENGINE TURNING GEAR	1	10	19	0.82	50	50			
	ENGINE REVERSING GEAR									
	LUBRICATING OIL PUMPS	Combined Circ. Sea Water pumps.								
	OIL FUEL TRANSFER PUMP	1	25	19	1.3	80	40			
	WINDLASS									
	WINCHES, FORWARD									
	WINCHES, AFT									
	STEERING GEAR									
	(a) MOTOR GENERATOR	4	25	19	1.3	60	90			
	(b) MAIN MOTOR									
	WORKSHOP MOTOR	See below								
	VENTILATING FANS									
	Boiler blower	2	2.5	2	1.78	20	100			
	Lathe	1	1.5	2	1.38	15	130			
	Drilling Machine	1	1.5	2	1.38	10				
	Refr. engine	1	6	19	0.64	35	60			
	Oil separator	1	1.5	2	1.38	10	16			

Port forward engine (damaged through hole bottom end (roll) replaced by new 4-cyl. Ikegai uses A engine 5136 See the Rept 1822

All Conductors are of annealed copper conforming to British Standard Specification No. 7.

The Insulated Conductors are guaranteed to withstand the immersion and resistance tests specified in the Rules.

The foregoing is a correct description.

ALLGEMEINE ELEKTRICITÄTS-GESELLSCHAFT
ABT. f. SCHIFFBAU
BAUBUREAU HAMBURG

Electrical Engineers.

Date 11. 8. 30.

COMPASSES.

Distance between electric generators ~~or motors~~ and standard compass about 60 m

Distance between electric generators ~~or motors~~ and steering compass about 62 "

The nearest cables to the compasses are as follows:—

A cable carrying 0.2 Ampères close 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 with

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

[Signature] 111a Alsterhorn

Builder's Signature.

Date

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. Material and workmanship of this electric installation are of good quality. Rules respecting conductors of this Society have been applied generally, as the German Standards are used in this construction. The installation has been built under special survey in accordance with the requirements of the Rules, the approved plans and the Secretary's letters. It has given full satisfaction under full working and manoeuvring conditions and is eligible in my opinion to be classed in the Society's Reg. Book with Record of "Electric Light"

Electric Light
J.A. Knudsen
24/8/30
[Signature]

Total Capacity of Generators 144 Kilowatts.

The amount of Fee ... £ 33 : 14 : -

When applied for, 12. 8. 30

Travelling Expenses (if any) £ - : -

When received, 16. 10. 30

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

Committee's Minute

TUE. 26 AUG 1930

Assigned

Electric Light

Im. 238.—Transfer. The Surveyors are requested not to write on or below the space for Committee's Minute.



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