

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office

FEB -7 1940

Date of writing Report 25th Jan. 40 When handed in at Local Office 1st Febr. 40 Port of GOTHENBURG.
 No. in Survey held at GOTHENBURG Date, First Survey 11.11.39 Last Survey 15th Jan. 19 40
 Reg. Book. 39774 on the Single Screw Motor Tanker "KOLLSKEGG" (Number of Visits 19)
 Tons { Gross 9858
 Net 5845
 Built at GOTHENBURG. By whom built Eriksbergs M.V.A/B Yard No. 291 When built 1940
 Owners Odd Børgs Tankrederi A/S Port belonging to Oslo.
 Electric Light Installation fitted by Allmänna Svenska Elektriska AB. Contract No. 19812 When fitted 1940
 Is the Vessel fitted for carrying Petroleum in bulk Yes

System of Distribution Parallel system, Two wire.

Pressure of supply for Lighting 110 volts, Heating 110 volts, Power 220 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 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

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 in the engine room, 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 the engine room

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 of 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 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 circuit breaker with overload and reversed current trips and
 a single pole equalizer switch. For each outgoing circuit two fuses and a double pole switch.

Are turbine driven generators fitted with emergency trip switch as per rule No turbine dr. gen. Are cupboards or compartments containing switchboards composed of
 fire-resisting material or lined with approved material hard wood Instruments on main switchboard 4 ammeters 4
 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
One ohm-meter Switches, Circuit Breakers and Fusible Cut-outs,
 Please see Secr. ltr. 10.1.40 "B" have the reversed

do these comply with the requirements of the Rules. Yes are the fusible cutouts of an approved type 10.1.40 "B"

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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, twin, concentric, or multicore **single & twin** are the cables insulated and protected as per Tables IV, V, X, XI, XII or XIII of the Rules **yes**

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 **below allowance permitted** 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 **-**, 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 **Yes** if so, are they adequately protected **Yes**

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 **Supp. by metal clips. All power cables lead cov. & arm. Light cables in cabins lead cov. arm. or steelwireplatt.**

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 **No** 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 **Main cables are not jointed, section-cables are jointed in porcelain boxes and boxes as pr Rule.**

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 **of lead**

Earthing Connections, state what earthing connections are fitted and their respective sectional areas **Earthing connections fitted to all lead covering and of cables** 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 **-**

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, ~~XXXXXX~~ 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 **No**

are any fittings placed in spaces where inflammable or explosive dust or gases are liable to be present, if so, how are they protected **No**

where are the controlling switches situated **-**

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 **-**

Searchlight Lamps, No. of **1** whether fixed or portable **Portable**, 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 **-** 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 **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** are all fuses of the fitted cartridge type **Yes** are they of an approved type **See Sec. 10/1/40**

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.	Amps.	Revs. per Min.		Fuel Used.	Flash Point of Fuel.
MAIN	1	135	220	605	350	Diesel oil engine	Diesel oil	Above 150° F
AUXILIARY	1	15	110	136	600	Steam engine		
EMERGENCY								
Main	1	100	220	455	350	Diesel oil engine	Diesel oil	Above 150° F
ROTARY TRANSFORMER	1	15	110	136	1380	Electric motor 220 V		

GENERATOR, LIGHTING AND HEATING CONDUCTORS.

DESCRIPTION.	CONDUCTORS.		COMPOSITION OF STRAND.		TOTAL MAXIMUM CURRENT, AMPERES.		Approximate Length. (Lead and Return.) ft m	Insulated with	HOW PROTECTED.
	No. per Pole.	Total Nominal Area per Pole sq. centim	No.	Diameter.	In Circuit.	Rule.			
MAIN GENERATOR	3	150	37	2.27	605	615	56	Rubber	Lead covered and armoured
EQUALISER CONNECTIONS	3	150	37	2.27		615			
AUXILIARY GENERATOR	1	95	37	1.81	136	150	40	"	"
EMERGENCY GENERATOR	3	95	37	1.81	455	450	28	"	"
ROTARY TRANSFORMER	1	50	19	1.83	91	100	16	"	"
ENGINE ROOM	1	95	37	1.81	136	149	16	"	"
BOILER ROOM									
AUXILIARY SWITCHBOARDS									
Light Distr. Boards									
Deck Light Forw.	1	4	7	0.86	12	22	290	"	"
Midships	1	10	7	1.35	30	38	200	"	"
Officers Acc.	1	4	7	0.86	20	22	50	"	"
Crews Acc.	1	4	7	0.86	20	22	60	"	"
ACCOMMODATION									
Navigation	1	2.5	7	0.67	5	16	240	"	"
Engine Room	1	4	7	0.86	18	22	4	"	"
Fans	1	4	7	0.86	12	22	70	"	"
WIRELESS	1	16	7	1.73	16	50	220	"	"
SEARCHLIGHT	1	16	7	1.73	-	50	300	"	"
MASTHEAD LIGHT	1	1.5	1	1.38	0.4	9	160	"	"
SIDE LIGHTS	1	1.5	1	1.38	0.4	9	60	"	"
COMPASS LIGHTS	1	1.5	1	1.38	0.4	9	25	"	"
POOP LIGHTS	1	1.5	1	1.38	0.4	9	260	"	"
CARGO LIGHTS									
HEATERS									
Lubr. Oil	1	25	19	1.29	55	62.5	36	"	"
Fuel Oil	1	10	7	1.35	38	38	30	"	"

MOTOR CONDUCTORS.

DESCRIPTION.	No. of Motors.	CONDUCTORS.		COMPOSITION OF STRAND.		TOTAL MAXIMUM CURRENT, AMPERES.		Approximate Length. (Lead and Return.) ft m	Insulated with	HOW PROTECTED.
		No. Per Pole.	Total Nominal Area per Pole sq. centim	No.	Diameter.	In Circuit.	Rule.			
BALLAST PUMP	1	1	35	19	1.53	68.5	78	90	Rubber	Lead covered and armoured
Heir. Cool	1	1	2.5	7	0.67	8.7	16	36	"	"
Heir. Co2-Compr.	1	1	10	7	1.35	33	38	40	"	"
EMERGENCY BILGE PUMP										
SANITARY PUMP	1	1	10	7	1.35	31.5	38	90	"	"
CIRC. SEA WATER PUMPS	2	2	95	37	1.81	273	300	68	"	"
Lubr. Oil Pumps	1	1	35	19	1.53	76	78		"	"
CIRC. FRESH WATER PUMPS										
AIR COMPRESSOR										
FRESH WATER PUMP										
ENGINE TURNING GEAR	1	1	25	19	1.29	64	62.5	44	"	"
ENGINE REVERSING GEAR										
LUBRICATING OIL PUMPS										
OIL FUEL TRANSFER PUMP	1	1	10	7	1.35	29.4	38	16	"	"
WINDLASS										
WINCHES, FORWARD										
Aux. Cool W. Pump	1	1	2.5	7	0.67	10.1	16	50	"	"
WINCHES, AFT										
Telfer	1	1	4	7	0.86	17	22	60	"	"
STEERING GEAR										
(a) MOTOR GENERATOR										
(b) MAIN MOTOR	1	1	95	37	1.81	135	150	84	"	"
WORKSHOP MOTOR	1	1	6	7	1.05	24	29	20	"	"
VENTILATING FANS	1	1	2.5	7	0.67	5.0	16	30	"	"
Lubr. Oil Sep.	1	1	4	7	0.86	18.2	22	20	"	"
Fuel Oil Sep.	1	1	2.5	7	0.67	18.2	22	36	"	"
Reserve Sep.	1	1	2.5	7	0.67	13	16	40	"	"
Grinder	1	1	2.5	7	0.67	12	16	20	"	"

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.

[Signature] Electrical Engineers. Date 23.1.1940

COMPASSES.

Minimum distance between electric generators or motors and standard compass ---
 Minimum distance between electric generators or motors and steering compass ---
 The nearest cables to the compasses are as follows:—
 A cable carrying 0.4 Amperes 4 feet from standard compass 4 feet from steering compass. Morse lamp.
 A cable carrying 0.4 Amperes 5 feet from standard compass 6 feet from steering compass. Compass lights.
 A cable carrying Amperes 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 --- degrees on --- course in the case of the standard compass, and --- degrees on --- course in the case of the steering compass.

[Signature] Builder's Signature. Date 31.1.40

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.)

The electric installation of this vessel has been fitted on board under my inspection and has been tested and found satisfactory.

The workmanship is good and the Rule requirements have been complied with.

Lloyd's certificates of the main generators and the Makers' test certificates in respect of the steam driven generator, converter generator and of the motors for essential purposes are attached herewith.

Part of the survey was at the request of the Builders carried out on Sunday the 14th January, 1940, from 10 a.m. to 1 p.m.

Total Capacity of Generators 248 Kilowatts.

The amount of Fee Got a/c Kr. 680:00 When applied for, 1/2 1940
 Cpn. a/c " 175:00

Travelling Expenses (if any) Kr. 23:00 When received, 24/2/40
 Cpn. a/c

Sunday fee Got. a/c Kr. 40:00

Committee's Minute TUE 27 FEB 1940

Assigned See for J.E. 12 801

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

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

