

# REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office JUN 12 1937

Date of writing Report 3rd June 1937 When handed in at Local Office 11th June 1937. Port of **GOTHENBURG.**

No. in Survey held at **Gothenburg** Date, First Survey 22nd March Last Survey 28th May, 1937.  
Reg. Book. (Number of Visits 12)

Suppl. on the **M/S Kollbjörg**  
**8900**

Tons { Gross 8259  
Net 4978

Built at **Gothenburg** By whom built **Eriksbergs M.V.AB.** Yard No. **264** When built **1937**

Owners **Aktieselskapet Kollbjörg** Port belonging to **Oslo**

Electric Light Installation fitted by **Elektriska Aktiebolaget AEG** Contract No. When fitted **1937**

Is the Vessel fitted for carrying Petroleum in bulk **yes**

System of Distribution **Two-Wires-System** ✓

Pressure of supply for Lighting **110** volts, Heating **Cooking 220** volts, Power **220** 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 **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 **none** ✓

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** **on both sides 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

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 **yes** ✓ 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 reserved - 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 Are cupboards or compartments containing switchboards composed of

fire-resisting material or lined with approved material Instruments on main switchboard **6** ammeters **3**

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

**Ohmmetre fitted with commutator for both poles** ✓ **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



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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 **twin** are the cables insulated and protected as per Tables IV, V, X or XI of the Rules **yes**  
If the cables are insulated otherwise than as per Rule, are they of an approved type **yes**

any point of the installation under maximum load **below allowance permitted by the Rules.** Cable Sockets, are the ends of all cables having a sectional area of 0.04 square inch and above provided with soldering sockets **yes**

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 **yes** or waterproof insulating tape **yes**

Support and Protection of Cables, state how the cables are supported and protected **Supported by metal clips. All powercables led-covered and armoured. Lightcables: in cabins lead-covered, otherwise armoured or steelwired-plaited.**

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 **Maincables are not jointed, sections-cables are jointed in porcelainboxes and boxes as per Rule.**

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

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

Alternative Lighting, are the groups of lights in the propelling machinery space arranged as per Rule **yes**

Navigation Lamps, are these separately wired **yes** controlled by separate switch and separate fuses **yes**

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 where inflammable or explosive dust or gases are liable to be present, if so, how are they protected **Lamp in gastight fittings**

are all fittings suitably ventilated **yes**

Heating and Cooking Appliances, are they constructed and fitted as per Rule **yes**

Searchlight Lamps, No. of **1** are their fittings as per Rule **yes**

Motors, are their working parts readily accessible **yes**

are the brushes, brush holders, terminals and lubricating arrangements as per Rule **yes**

are machines of over 100 BHP been inspected by the Surveyors during manufacture and testing **none**

are required, are these fitted as per Rule **yes**

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.	Amperes.	Revs. per Min.		Fuel Used.	Flash Point of Fuel.
MAIN	1	82	220	373	400	Diesel engine	Diesel oil above 150° F.	
EMERGENCY	1	100	220	455	350	" "	" "	
Auxiliary	1	8	110	72.7	500	Steam engine		
ROTARY TRANSFORMER	1	14	110		1300			

GENERATOR, LIGHTING AND HEATING CONDUCTORS.

DESCRIPTION.	No. per Pole.	CONDUCTORS.		COMPOSITION OF STRAND.		TOTAL MAXIMUM CURRENT.		Approximate Length (Lead and Return) in met.	Insulated with	HOW PROTECTED.
		Total Nominal Area per Pole Sq. mm	No.	No.	Diameter.	In Circuits.	Rule.			
MAIN GENERATOR	2	150	37	2,25	373	406	30	Rubber	Lead covered and steel armoured	
EQUALISER CONNECTIONS	2	150	37	2,25			30	"	"	
AUXILIARY GENERATOR	1	35	19	1,53	72,7	75	65	"	"	
EMERGENCY GENERATOR	1	35	19	1,53	72,7	75	65	"	"	
ROTARY TRANSFORMER MOTOR	1	50	19	1,83	77	100	12	"	"	
MAIN GENERATOR EQUALISER CONNECTIONS	2	185	37	2,52	455	460	60	"	"	
AUXILIARY SWITCHBOARDS	2	185	37	2,52			60	"	"	
Light distrib. boards										
Forecastle	1	4	7	0,86	5	25	260	"	"	
Midships	1	16	7	1,71	35	50,5	180	"	"	
Poop starboard	1	4	7	0,86	18	25	50	"	"	
" port	1	4	7	0,86	18	25	32	"	"	
ACCOMMODATION										
Navigation	1	4	7	0,86	5	25	190	"	"	
Engine Room	1	6	7	1,05	20	29	15	"	"	
WIRELESS	1	16	7	1,71		50	175	"	"	
SEARCHLIGHT	1	1,5	7	0,52	1	9	240	"	"	
MASTHEAD LIGHT	1	1,5	7	0,52	1	9	30	"	"	
SIDE LIGHTS	1	1,5	7	0,52	1	9	40	"	"	
COMPASS LIGHTS	1	1,5	7	0,52	1	9	240	"	"	
POOP LIGHTS	1	1,5	7	0,52	1	9	65	"	"	
CARGO LIGHTS	1	1,5	7	0,52	1	9	65	"	"	
HEATERS for lubr. oil	1	10	7	1,35	36	40	65	"	"	
HEATERS for fuel oil	1	25	7	2,13	55	62	80	"	"	
Cooking	1	25	7	2,13	55	62	80	"	"	

MOTOR CONDUCTORS.

DESCRIPTION.	No. of Motors.	CONDUCTORS.		COMPOSITION OF STRAND.		TOTAL MAXIMUM CURRENT.		Approximate Length (Lead and Return) in met.	Insulated with	HOW PROTECTED.
		No. Per Pole.	Total Nominal Area per Pole Sq. mm	No.	Diameter.	In Circuits.	Rule.			
BALLAST PUMP	1	1	35	19	1,53	69	75	50	Rubber	Lead covered and steel armoured
MAIN BILGE LINE PUMPS										
GENERAL SERVICE PUMP										
EMERGENCY BILGE PUMP										
Bilge and SANITARY PUMP	1	1	10	7	1,35	32	40	60	"	"
CIRC. SEA WATER PUMPS										
REFRIGERATING WATER PUMPS	1	1	2,5	7	0,67	8	16	54	"	"
COMPRESSOR Refr. Cooling	1	1	10	7	1,35	30	40	54	"	"
FRESH WATER PUMP	1	1	50	19	1,83	76	100	60	"	"
ENGINE TURNING GEAR	1	1	10	7	1,35	33	40	100	"	"
ENGINE REVERSING GEAR and cool water	2	1	185	37	2,52	203	230	45	"	"
LUBRICATING OIL PUMPS	1	1	10	7	1,35	29,6	40	50	"	"
OIL FUEL TRANSFER PUMP	1	1	10	7	1,35	29,6	40	50	"	"
WINDLASS										
WINCHES, FORWARD										
WINCHES, AFT										
STEERING GEAR—										
(a) MOTOR GENERATOR										
(b) MAIN MOTOR	1	1	50	19	1,83	96	100	85	"	"
WORKSHOP MOTOR	1	1	2,5	7	0,67	10	16	40	"	"
VENTILATING FANS										
Cool Water Pump	1	1	2,5	7	0,67	7.8	16	55	"	"
Lubr. Oil Separ.	1	1	2,5	7	0,67	10.0	16	65	"	"
Fuel " "	1	1	2,5	7	0,67	10.0	16	65	"	"

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.

Elektriska Aktiebolaget A.E.G.  
Filiat Göteborg  
*Olav Johansen*

Electrical Engineers.

Date 3.6. 1937

COMPASSES.

Distance between electric generators or motors and standard compass about 10 metres

Distance between electric generators or motors and steering compass " 10 "

The nearest cables to the compasses are as follows:—

A cable carrying	Ampères	feet from standard compass	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

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

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.

Eriksbergs Mek. Verkstads Aktiebolag

Builder's Signature.

Date 10.6.37.

Is this installation a duplicate of a previous case No If so, state name of vessel Similar to M/S "KOLLGRIM",

M/S "INNERÖY" & M/S "JOTUNFJELL"

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

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 certificate of the 100 KW generator and makers certificates of remaining generators and of the motors are attached.

Makers certificate of 82 Kw generator include also a generator No.844062 which will be fitted in Eriksbergs Mek. Verkstads A.-B. newbuilding No.277.

Note  
16/6/37.

Total Capacity of Generators 190 Kilowatts.

The amount of Fee ... XXXKr.: 685:00 11/6 37.

Travelling Expenses (if any) £

When received.

50-6-37

Committee's Minute

FRI 18 JUN 1937

Assigned

See fol. J.E. 11282

*L. Mander*  
Surveyor to Lloyd's Register of Shipping.

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



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