

# Report on Electrical Equipment.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office. 3- OCT 1945

Date of writing Report 19/9 1945. When handed in at Local Office 26/9 1945. Port of Gothenburg.

No. in Survey held at Gothenburg Date, First Survey 22nd Jan. 44 Last Survey 11th Sept. 1945.  
Reg. Book. (Number of Visits 26)39057 on the Motorship "OLAV RAKKE" Tons { Gross 5870  
Net 4984

Built at Gothenburg By whom built A-B. Götaverken Yard No. 561 When built 1945

Owners D/S A/S Jeanette Skimer Port belonging to Haugesund

Electrical Installation fitted by A-B. Götaverken Contract No. When fitted 1945

Is vessel fitted for carrying Petroleum in bulk No. Is vessel equipped with D. F. Yes E. S. D. No Gy. C. No Sub. Sig. No.

Have plans been submitted and approved Yes System of Distribution Two wire Voltage of supply for Lighting 110

Heating 220 Power 220 Direct or Alternating Current, Lighting D.C. Power D.C. If Alternating Current state frequency Prime Movers,

has the governing been tested and found efficient when the whole load is suddenly thrown on and off Yes Are turbine emergency governors fitted with a

trip switch as per Rule Generators, are they compound wound Yes are they level compounded under working conditions Yes

if not compound wound state distance between generators and from switchboard Where more than one generator is fitted are they

arranged to run in parallel Yes, are shunt field regulators provided Yes Is the compound winding connected to the negative or positive pole

Negative Have machines over 100 kw. been inspected by the Surveyors during manufacture and testing Yes Have certificates of

test for machines under 100 kw. been supplied Yes and the results found as per rule Yes Are the lubricating arrangements and the construction

of the generators as per rule Yes Position of Generators 2 on port, 1 on starboard side in the engine room

is the ventilation in way of generators satisfactory Yes are they clear of inflammable material Yes if situated

near unprotected combustible material state distance from same horizontally and vertically are the generators protected from mechanical

injury and damage from water, steam and oil Yes are the bedplates and frames earthed Yes and the prime movers and generators in metallic

contact Yes Switchboards, where are main switchboards placed Forward in the motor room

are they in accessible positions, free from inflammable gases and acid fumes Yes are they protected from mechanical injury and damage from water, steam

and oil Yes, if situated near unprotected combustible material state distance from same horizontally and vertically, what insulation

material is used for the panels Marble, if of synthetic insulating material is it an Approved Type, if of

semi-insulating material (slate or marble) are all conducting parts insulated therefrom as per Rule Yes Is the frame effectually earthed Yes

Is the construction as per Rule Yes, including accessibility of parts Yes, absence of fuses on the back of the board Yes, individual fuses

to pilot and earth lamps, voltmeters, etc., Yes locking of screws and nuts Yes labelling of apparatus and fuses Yes, fuses on the «dead»

side of switches Yes Description of Main Switchgear for each generator and arrangement of equaliser switches For each generator:

A double pole linked circuit breaker with overload and reversed current trips and a single

pole equaliser as per Rule

and for each outgoing circuit Double pole linked switches and a fuse at each pole

Are compartments containing switchboards composed of fire-resisting material or lined as per Rule Yes Instruments on main switchboard 9

ammeters 5 voltmeters synchronising devices. For compound machines in parallel is the ammeter connected on the pole opposite to the

equaliser connection Yes Earth Testing, state means provided Ohm meter



Switches, Circuit Breakers and Fuses, are they as per Rule **Yes**..... are the fuses an approved type **Yes**..... are all fuses labelled as per Rule **Yes**..... are the reversed current protection devices connected on the pole opposite to the equaliser connection **Yes**..... have they been tested under working conditions **Yes**..... **Joint Boxes, Section Boards and Distribution Boards**, is the construction and position as per Rule **Yes**.....

**Cables**, are they insulated and protected as per the appropriate Tables of the Rules **Yes**..... if otherwise than as per Rule are they of an approved type **Below Rule**....., state maximum fall of pressure between bus bars and any point under maximum load **perm**..... are the ends of all cables having a sectional area of 0.04 square inch and above provided with soldering sockets **Yes**..... Are paper insulated and varnished cambric insulated cables sealed at the exposed ends **Yes**..... with insulating compound **Yes**..... or waterproof insulating tape **Yes**..... Are all the cable runs in accessible positions, not exposed to drip or accumulation of water or oil, high temperatures or 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, laundries, etc., lead covered **Yes**..... or run in conduit **Yes**.....

State how the cables are supported and protected **Supported by metal clips. All power cables lead covered and armoured. Cables in cabins lead covered.**

Are all lead sheaths, armoring and conduits effectually bonded and earthed **Yes**..... Refrigerated chambers, are the cables and fittings as per Rule **Yes**.....

Are all cables passing through decks and watertight bulkheads provided with deck tubes or watertight glands **Yes**..... where unarmoured cables pass through beams, etc., are the holes effectively bushed **Yes**..... and with what material **Lead**..... **Alternative Lighting**, are the groups of lights in the engine and boiler rooms arranged as per Rule **Yes**..... **Emergency Supply**, state position **Yes**..... and method of control **Yes**.....

**Navigation Lamps**, are they separately wired **Yes**..... controlled by separate double pole switches **Yes**..... and fuses **Yes**..... Are the switches and fuses in a position accessible only to the officers on watch **Yes**....., is an automatic indicator fitted **Yes**..... **Secondary Batteries** are they constructed and fitted as per Rule **Yes**....., are they adequately ventilated **Yes**.....

**Fittings**, are all fittings on weather decks, in stowholds and engine rooms and wherever exposed to drip or condensed moisture, weatherproof **Yes**..... Are fittings installed where readily combustible materials or inflammable or explosive dust or gases are likely to be present **No**....., if so, how are they protected **Yes**.....

and where are the controlling switches fitted **Yes**....., are all fittings suitably ventilated **Yes**.....

are all fittings and accessories constructed and installed as per Rule **Yes**..... **Searchlight Lamps**, No. of **Yes**....., whether fixed or portable **Yes**....., are their fittings as per Rule **Yes**..... **Heating and Cooking**, is the general construction as per Rule **Yes**.....

are the frames effectually earthed **Yes**....., are heaters in the accommodation of the convection type **Yes**..... **Motors** are all motors constructed and installed as per Rule **Yes**..... and placed in well-ventilated compartments in which inflammable gases cannot accumulate and free from damage from water, steam and oil **Yes**..... if situated near unprotected combustible material state minimum distance from same horizontally **Yes**..... and vertically **Yes**.....

Have motors of 100 BHP and over been inspected by the Surveyors during manufacture and testing **Yes**..... Have certificates of test for motors under 100 BHP intended for essential services been supplied and the results found as per Rule **Yes**..... **Control Gear and Resistances** are they constructed and fitted as per Rule **Yes**..... **Lightning Conductors**, where required are they fitted as per Rule **Yes**..... **Ships carrying Oil having a Flash Point less than 150° F.** Have all the special requirements of the Rules for such ships been complied with **Yes**....., are all fuses of the 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 **Yes**..... **Spare Gear**, if the vessel is for open sea service have spares been provided as per Rule **Yes**....., are they suitably stored in dry situations **Yes**..... **Insulation Tests**, has the insulation resistance of all circuits and apparatus been megger tested and found satisfactory **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	3	170	220	773	300	Diesel engine	Diesel oil	Above 150° F.
EMERGENCY ROTARY TRANSFORMER	1	14	110	127		Electric motor		

## Electrical Equipment of the m.s. "Olav Bakke", of Haugesund.

## MOTOR CABLES.

Description.	No	BHP	No. in paral	Sectional area	In the ciro.	Rule	Length	Ins.	How protected.
Winches & windlass I & II	1	65							
	2	25	1	95	242	243.6	260	Paper	Lead covered and armoured
Winches H I & II	2	25	1	70	95	123.6	190	Rubber	"
" H II & III	2	16	1	25	62	102	140	Paper	"
" H II & III	2	16	1	25	62	102	140	"	"
" H III	2	16	1	25	62	102	100	"	"
" H IV	2	16	1	25	62	102	120	"	"
" H IV & V	2	25	1	70	95	123.6	220	Rubber	"
" H IV & V	2	25	1	70	95	123.6	140	"	"
Steering engine	1	30	1	70	114	123.6	180	"	"



# GENERATOR CABLES.

DESCRIPTION	KILOVATTS	CONDUCTORS		MAXIMUM CURRENT IN AMPERES		APPROX. LENGTH (lead plus return) in ft.	INSULATED WITH	HOW PROTECTED.
		No. in Parallel Per Pole	Sectional Area Sq. mm.	In the Circuit	Rule			
MAIN GENERATOR.....	170	3	120	773	846 ✓	40-56-70	Paper	Lead covered & armoured
" " EQUALISER .....		3	120	---	846 ✓	40-56-70	"	---
EMERGENCY GENERATOR .....								
ROTARY TRANSFORMER: MOTOR	14	1	25	64	102 ✓	20	"	---
" " GENERATOR		1	95	127	150 ✓	20	Rubber	---

## MAIN DISTRIBUTION CABLES.

AUX. SWITCHBOARDS AND SECTION BOARDS							
Separators and oil heaters	1	120	245	282✓	60	Paper	-"
Workshop	1	4	15	22.2✓	60	Rubber	-"
Refrigerating machinery pumps	1	70	147	200✓	46	Paper	-"
Refrigerating machinery fans	1	70	170	200✓	46	"	-"
Fans for air condenser	1	1.5	5	6.5✓	70	Rubber	-"
Galley board	1	70	120	123.6✓	70	"	-"
Water heater	1	16	40	48✓	70	"	-"
Water heater	1	35	68	77.5✓	70	"	-"

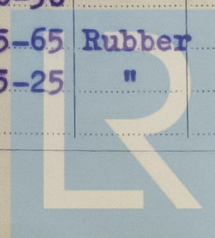
## LIGHTING AND HEATING, ETC., CABLES.

WIRELESS .....	1	6	15	29.5 ✓	110	Rubber	---
NAVIGATION LIGHTS .....	1	1.5	3	6.5 ✓	120	"	---
LIGHTING <del>AND HEATING</del> aft .....	1	10	18	38.2 ✓	180	"	---
" deck aft .....	1	10	23	38.2 ✓	140	"	---
" officers .....	1	6	24	29.4 ✓	70	"	---
" passengers and saloon .....	1	16	48	48 ✓	130	"	---
" deck forward .....	1	25	56	102 ✓	180	Paper	---
" motor room .....	1	6	24.6 ✓	29.4	10	Rubber	---
" refrigerating chambers .....							
HEATING passengers .....	1	120	179	175 ✓	130	"	---
" officers .....	1	25	94	102 ✓	70	Paper	---
" aft .....	1	25	88.5 ✓	102	180	"	---

## MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED.	No.	B.H.P.						
Main circulating pumps	2	90	1	150	300 ✓	325	80-80	Paper
Main lubr. oil pumps	2	90	1	150	300 ✓	325	72-72	"
Aux. eng. circ. pump	1	10	1	10	40 ✓	38.2	68	Rubber
Ballast pump	1	40	1	50	150 ✓	160	76	Paper
Bilge- and sanitary pump	1	9	1	10	36 ✓	38.2	70	Rubber
Sanitary- and fire pump	1	9	1	10	36 ✓	38.2	80	"
Transfer pump	1	15	1	10	59 ✓	60	100	Paper
Manoeuvring compressors	2	53	1	70	198 ✓	200	80-80	"
Turning motor	1	15	1	25	59 ✓	62.5	110	Rubber
Lubr. oil purifiers	2	3.5	1	2.5	15 ✓	12.8	20-20	"
Fuel oil purifier	1	6	1	6	24 ✓	29.4	20	"
Pump for ditto	1	3	1	2.5	13 ✓	12.8	20	"
Transformer	1	19	1	25	64 ✓	102	20	Paper
Salt water hydr. pump	1	6	1	6	24 ✓	29.4	30	Rubber
Fresh water hydr. pump	1	3	1	2.5	13 ✓	12.8	20	"
CO <sub>2</sub> compressors I & II	2	55	1	70	206 ✓	200	44-48	Paper
CO <sub>2</sub> compressors III & IV	2	32	1	70	121 ✓	123.6	52-56	Rubber
Cooling water pumps for ref	2	7.5	1	10	30 ✓	38.2	30-30	"
" "	2	3	1	2.5	13 ✓	12.8	20-20	"
Brine pumps I & II	2	7.5	1	10	30 ✓	38.2	40-40	"
" " III & IV	2	3	1	2.5	13 ✓	12.8	40-40	"
" " V	1	1.5	1	1.5	7 ✓	6.5	40	"
Refrigerating fans	2	16	1	16	62 ✓	79	140-140	Paper
" "	2	16	1	16	62 ✓	79	50-50	"
" "	2	7.5	1	6	30 ✓	29.5	65-65	Rubber
" "	2	7.5	1	6	30 ✓	29.5	25-25	"

Continued.



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The Electrical Equipment is installed in accordance with the approved plans and the requirements of the Rules.  
All Insulated Conductors are guaranteed to have been tested at the maker's works as specified in the Rules.  
The foregoing is a correct description.

..... Electrical Engineers. Date .....

#### COMPASSES.

Minimum distance between electric generators or motors and standard compass ..... About 12 metres. .....

Minimum distance between electric generators or motors and steering compass ..... About 10 metres. .....

The nearest cables to the compasses are as follows: —

A cable carrying ..... 6 ..... Ampères ..... 12 ..... feet from standard compass ..... 12 ..... feet from steering compass.

A cable carrying ..... 1.5 ..... Ampères ..... 6 ..... feet from standard compass ..... 6 ..... 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.

AKTIEBOLAGET GÖTAVERKEN  
Alfred H. M. L. L. ..... 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, whether insulation tests, etc., have been made, opinions as to class, etc.) .....

..... The electric installation has been fitted on board the vessel under my inspection and to my satisfaction in accordance with the Rules and approved plans. .....

..... The workmanship and materials are good and the installation has been tested and examined under working conditions. .....

..... The generators over 100 kW. have been manufactured and tested under the supervision of the Society's Surveyors and Makers' test certificates for the motors are attached. .....

Notis  
Ran

29.10.45

Total Capacity of Generators ..... 510 ..... Kilowatts.

The amount of Fee ..... Kronor: 1097:25 ..... When applied for, 26/9.19.45  
Paid at Cpn. 232:00 ..... When received  
Travelling Expenses (if any) ..... 865:25 ..... 19.....

Please see Gothenburg letter 19.9.1940.  
" " Secretaries " 25.11.40 init. "T".  
Committee's Minute .....

Assigned ..... See F.E. machy. rpt. .....  
2 NOV 1945

Sten Johansen  
Surveyor to Lloyd's Register of Shipping.