

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Date of writing Report 3rd June 1949 When handed in at Local Office _____ 19____ Part of Copenhagen Received at London Office 15 JUN 1949

No. in Survey held at Salborg Date, First Survey 20th January Last Survey 18th May 1949
Reg. Book. _____ (No. of Visits 16)

91565 on the Steel Single Screw Steamer KAMMA DAN Tons Gross 3490.63
Salborg By whom built Salborg Verft A/S Yard No. 76 When built 1949
Net 1944.39

Owners Rederiet Ocean A/S (J. Lauritzen) Port belonging to Osloberg

Installation fitted by Salborg Verft A/S When fitted 1949

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

Plans, have they been submitted and approved Yes System of Distribution Two wire insulated Voltage of Lighting 220

Heating 220 Power 220 D.C. or A.C., Lighting direct Power direct If A.C. state frequency ✓

Prime Movers, has the governing been found as per Rule when full load is thrown on and off Yes. Are turbine emergency governors fitted

with a trip switch ✓ Generators, are they compound wound Yes, and level compounded under working conditions Yes.

if not compound wound state distance between generators ✓ and from switchboard ✓ Are the generators 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 ✓ Have certificates of

test for machines under 100 kw. been supplied Yes and the results found as per Rule Yes.

Position of Generators In the engine room, 1 off in port, 2 off in starboard side

is the ventilation in way of generators satisfactory Yes are they clear of inflammable material and protected from mechanical injury and

damage from water, steam and oil Yes Switchboards, where are main switchboards placed In the starboard

side of the engine room

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

steam and oil Yes, what insulation is used for the panels Sindanyo, if of synthetic insulating

material is it an Approved Type Yes, if of semi-insulating material (slate or marble) are all conducting parts insulated therefrom as

per Rule ✓ Is the construction as per Rule, including locking of screws and nuts Yes Description of Main Switchgear

for each generator and arrangement of equaliser switches a three pole circuit breaker with

overload and reverse current trips

and the switch and fuse gear (or circuit breakers) for each outgoing circuit a double pole switch and a

fuse in each pole.

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

ammeters 3 voltmeters ✓ synchronising devices. For compound machines in parallel are the ammeters and reversed current

protection devices connected on the pole opposite to the equaliser connection Yes Earth Testing, state means provided one set

of earth lamps and one voltmeter provided with Ohm scale.

Switches, Circuit Breakers and Fuses, are they as per Rule Yes, are the fuses an Approved Type Yes.

make of fuses 1 Knudsen, are all fuses labelled Yes If circuit breakers are provided for the generators, at what

overload do they operate 200 amps - 90 amps and at what current do the reversed current protective devices operate 20 amps - 9 amps

Joint Boxes, Section Boards and Distribution Boards, is the construction as per Rule Yes.

Cables, are they insulated and protected as per Rule Yes, if otherwise than as per Rule are they of an Approved Type ✓

state maximum fall of pressure between bus bars and any point under maximum load 6 Volts, are the ends of all cables having a sectional

area of 0.01 square inch and above provided with soldering sockets Yes Are all paper insulated and varnished cambric insulated

cables sealed at the ends ✓ 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 any cables laid under machines or floorplates No, if so, are they

adequately protected ✓ Are cables in machinery spaces, galleys, laundries, etc., lead covered Yes or run in conduit ✓

or of the "IR" type ✓ State how the cables are supported or protected The cables are supported by

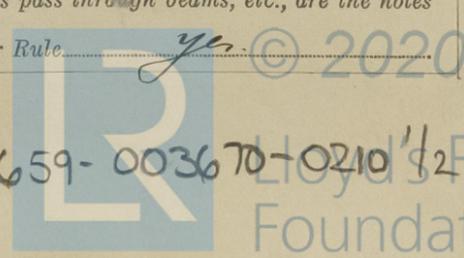
stamped clips, lead covered and steel wire armoured cables used, where

necessary protected by sheet iron

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



Alternative Lighting, are the groups of lights in the engine and boiler rooms arranged as per Rule yes Emergency Supply, state position

Navigation Lamps, are they separately wired yes controlled by separate double pole switches 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 Is an alternative supply provided yes

Secondary Batteries, are they constructed and fitted as per Rule yes, are they adequately ventilated yes state battery capacity in ampere hours yes

Fittings, are all fittings on weather decks, in stokeholds and engine rooms and wherever exposed to drip or condensed moisture, weatherproof yes Are any 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

Searchlight Lamps, No. of 1, whether fixed or portable fixed, are they of the carbon arc or of the filament type filament

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 and placed in well-ventilated compartments in which inflammable gases cannot accumulate and protected from damage from water, steam and oil yes

Are motors coupled to oil fuel transfer and pressure pumps capable of being stopped from a position accessible in the event of fire in the pump compartment 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 sea 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 an Approved Cartridge Type yes, make of fuse yes Are the fittings for pump rooms, 'tween deck spaces, etc., in accordance with the special requirements for such ships yes Are the cables lead covered as per Rule yes

E.S.D., if fitted state maker Hughes location of transmitter Frame 61-62 and receiver in chartroom

Spare Gear, if the vessel is for open sea service have spares been provided as per Rule and suitably stored in dry situations yes

Insulation Tests, has the insulation resistance of all circuits and apparatus been tested and found satisfactory yes

PARTICULARS OF GENERATING PLANT.

DESCRIPTION OF GENERATOR.	No. of	MAKER.	RATED AT				PRIME MOVER.	
			Kilowatts per Generator.	Volts.	Ampères.	Revs. per Min.	TYPE.	MAKER.
MAIN ...	2	<u>W. & A. Electric, Copenhagen</u>	40	220	182	550	Steam engine	<u>W. & A. Electric, Copenhagen</u>
	1	<u>Crompton, Robinson & Co., Chelmsford</u>	18	220	82	1000	Heavy oil	<u>Reliance Engine, Ltd. Wakefield.</u>
EMERGENCY ...								
ROTARY TRANSFORMER								

GENERATOR CABLES.

DESCRIPTION.	KILOWATTS.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (lead plus return feet).	INSULATION.	PROTECTIVE COVERING.
		No. in Parallel per Pole.	Sectional Area or No. and Dia. of Strands. Sq. ins. or sq. mm.	In the Circuit.	Rule.			
MAIN GENERATOR ...	40	2	50	182	196	18/36	Vulcan	Lead covered and
" " EQUALISER ...	18	1	50	82	98	9/18	rubber	steel wire armoured
		1	25		63	8	"	"
EMERGENCY GENERATOR ...								
ROTARY TRANSFORMER: MOTOR								
" " GENERATOR...								

MAIN DISTRIBUTION CABLES (to Section Boards, Distribution Fuse Boards, etc.).

DESCRIPTION.	No. in Parallel per Pole.	Sectional Area or No. and Dia. of Strands. Sq. ins. or sq. mm.	In the Circuit.	Rule.	APPROX. LENGTH (lead plus return feet).	INSULATION.	PROTECTIVE COVERING.
Workshop	1	4	21	21	10	"	"
Bilge and sanitary pumps ec.	1	10	38	38	34	"	"
Sanitary pumps ec & Eng room fans	1	25	60	63	6	"	"
Ventilation in holds	1	25	56	63	24	"	"
" " " "	1	10	30	38	84	"	"
Refrigerating plant for provisions	1	10	31	38	20	"	"
Accommodation fans and provisions	1	16	44	48	30	"	"
" " " " fan	1	4	19	21	34	"	"

LIGHTING, HEATING, WIRELESS, NAVIGATION LIGHTS, ETC., CABLES.

DESCRIPTION.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (lead plus return feet).	INSULATION.	PROTECTIVE COVERING.
	No. in Parallel per Pole.	Sectional Area or No. and Dia. of Strands. Sq. ins. or sq. mm.	In the Circuit.	Rule.			
Light in engine room	1	16	40	48	6	Vulcan	Lead covered and
Navigation lights	1	2.5	2	13	64	rubber	steel wire armoured
Chartroom	1	16	35	48	62	"	"
Light on deck & holds forward	1	16	35	48	94	"	"
" " " " aft.	1	10	25	38	60	"	"
Wireless	1	10	30	38	70	"	"
Gyro-compass	1	6	25	29	54	"	"
Gyro-compass	1	6	20	29	92	"	"
Light in accommodation amidships	1	16	35	48	30	"	"
Light ec. aft.	1	6	20	29	80	"	"

MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED.	No.	B.H.P.	No. in Parallel per Pole.	Sectional Area or No. and Dia. of Strands. Sq. ins. or sq. mm.	In the Circuit.	Rule.	APPROX. LENGTH (lead plus return feet).	INSULATION.	PROTECTIVE COVERING.
Duster fan	1	10	1	16	40	48	40	"	"
Sea pump for water cleaning	1	1	1	1.5	5	6.6	12	"	"
Aux circulating pump	1	3.5	1	4	15	21	16	"	"
Bilge and sanitary pump	1	4.25	1	4	18	21	8	"	"
Fuel oil starting pump	1	2.5	1	2.5	11	13	30	"	"
Engine room fans	2	1.25	1	1.5	6	6.6	34/40	"	"
Circulating pump	1	0.5	1	1.5	3	6.6	20	"	"
Sanitary pumps	2	1	1	1.5	5	6.6	12/16	"	"
" " "	2	2.7	1	2.5	12	13	14/14	"	"
Fan accommodation aft.	1	0.75	1	1.5	4	6.6	18	"	"
Fans hold aft.	2	3	1	2.5	13	13	50/56	"	"
Fans holds fore.	2	3.5	1	4	15	21	20/24	"	"
Refrigeration compressors	2	3	1	2.5	13	13	6/8	"	"
" " fans	2	0.3	1	1.5	2	6.6	24/28	"	"
Accommodation fans amidships	2	2.3	1	2.5	11	13	26/30	"	"

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.

AALBORG VÆRFT A/S
 14143
 AALBORG

AALBORG VÆRFT A/S

Electrical Contractors.

Date 7/6 49

J. H. Hansen

H. Hansen

COMPASSES.

Have the compasses been adjusted under working conditions... *yes*

AALBORG VÆRFT A/S

Builder's Signature.

Date 7/6 49

J. H. Hansen

Have the foregoing descriptions and schedules been verified and found correct... *yes*

Is this installation a duplicate of a previous case... *No* If so, state name of vessel... *✓*

Plans. Are approved plans forwarded herewith... *yes* If not, state date of approval... *✓*

Certificates. Are certificates of test for motors engaged on essential sea services and generators forwarded herewith... *yes*

General Remarks. (State quality of workmanship, whether insulation tests, etc., have been made, opinions as to class, etc.)

The electric installation has been constructed under special survey in accordance with the Rules, the approved plans and the requirements in the Secretary's letter E dated 1.2.1949.

The material used is conforming with the Rules and the workmanship is good.

On completion the whole installation was megger tested and tested under working conditions as per Rule and found good.

Noted sent 8/7/49

Total Capacity of Generators... *98 ✓* Kilowatts.

The amount of Fee ... *£ 1094.* When applied for, 1946 1949

Travelling Expenses (if any) £ : : ✓ 19

L. Hansen
 Surveyor to Lloyd's Register of Shipping.

Committee's Minute... **FRI. 15 JUL 1949**

Assigned *In units see S.S. App.*

2nd. 9. 49.—Transfer. (MADE AND PRINTED IN ENGLAND.) (The Surveyors are requested to write on or below the space for Committee's Minute.)

yes



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