

# REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL) 11 SEP 1930

Received at London Office.....

Date of writing Report 28th Aug. 1930 When handed in at Local Office 29/8 1930 Port of Oslo.

No. in Survey held at Fredrikstad. Date, First Survey 25/2.30 Last Survey 8/8. 1930.  
Reg. Book. (Number of Visits.....7.....)✓ on the twin screw motor vessel "DANWOOD". Tons { Gross 6399.7  
Net 3764.41.

Built at Fredrikstad By whom built Fredrikstad Mek. Verksted Yard No. 255 When built 1930.

Owners A/s Danwood, Mgr. Danckert Smith Port belonging to Oslo.

Electric Light Installation fitted by Østlandske Elektriske A/s. Contract No. When fitted 1930.

Is the Vessel fitted for carrying Petroleum in bulk No.

System of Distribution Insulated 2 wire system.

Pressure of supply for Lighting 220 volts, Heating 220 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 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.

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 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 in same comp.

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 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 mica &amp; porcelain.

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, 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 automatic

3 pole maximum &amp; reverse current switch for each generator.

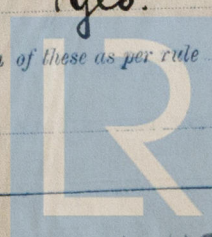
Instruments on main switchboard 3 ammeters 2 voltmeters synchronising device for paralleling purposes.

Earth Testing, state what means are provided at the main switchboard for indicating the state of the insulation of the system both voltmeters

fitted with ammeter and 3 pole switch.

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.



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Cables: Single, twin, concentric, or multicore Twin are the cables insulated and protected as per Tables IV or V of the Rules yes.  
Fall of Pressure, state maximum between bus bars and any point of the installation under maximum load below 2%.  
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 yes.

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 Cargoholds. Arm. leadcable in galv. pipes, deck, engineroom etc. Arm. leadcable fastened with clips. Accommodation cables fastened with clips  
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

Joints in Cables, state if any, and how made, insulated, and protected watertight jointboxes.

Watertight Glans 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 lead.

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

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 2.8 K.W. petrol driven generator placed at top of engineroom.

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 in chartroom.

has each navigation lamp an automatic indicator as per Rule yes.

Secondary Batteries, are they constructed and fitted as per Rule 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 in which goods are liable to be stacked in close proximity to them; if so, how are they protected 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 yes.

how are the cables led

where are the controlling switches situated yes.

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

Are Lamps, other than searchlight lamps, No. of yes, are their live parts insulated from the frame or case yes, 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 yes and 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.

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

## PARTICULARS OF GENERATING PLANT.

DESCRIPTION OF GENERATOR.	No. of	RATED AT				DRIVEN BY	WHERE DRIVEN BY AN INTERNAL COMBUSTION ENGINE.	
		Kilowatts.	Volts.	Amperes.	Rev. per Min.		Fuel Used.	Flash Point of Fuel.
MAIN ...	3	220	287	400		Diesel motors	Fuel oil	
AUXILIARY ...	1	2.8	220	13	1000	Internal Combustion Eng.	Petrol	
EMERGENCY ...								
ROTARY TRANSFORMER								

## GENERATOR, LIGHTING AND HEATING CONDUCTORS.

DESCRIPTION.	CONDUCTORS.		COMPOSITION OF STRAND.		TOTAL MAXIMUM CURRENT.		Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.
	No. per Pole.	Total Effective Area per Pole Sq. Ins.	No.	Diameter.	In Circuit.	Rule.			
MAIN GENERATOR ...	3	185 $\frac{1}{2}$	7	5.8 $\frac{1}{2}$	287	350	15	Leadcable	armoured
EQUALISER CONNECTIONS ...	1	6	7	1.05	13	25	10	"	"
AUXILIARY GENERATOR ...									
EMERGENCY GENERATOR ...									
ROTARY TRANSFORMER MOTOR GENERATOR ...	6	1.5	7	0.5	4	10	250	leadcable	armoured
ENGINE ROOM ...									
BOILER ROOM ...									
AUXILIARY SWITCHBOARDS ...									
ACCOMMODATION ...									
WIRELESS ...	1	6 $\frac{1}{2}$	7	1.05	13	25	250	Leadcable	armoured
SEARCHLIGHT ...	2	1.5	7	0.5	2	10	300	"	"
MASTHEAD LIGHT ...	2	1.5	7	0.5	2	10	60	"	"
SIDE LIGHTS ...	2	1.5	7	0.5	1	10	30	"	"
COMPASS LIGHTS ...	1	1.5	7	0.5	1	10	280	"	armoured
POOP LIGHTS ...									
CARGO LIGHTS ...									
ARC LAMPS ...									
HEATERS ...									

## MOTOR CONDUCTORS.

DESCRIPTION.	No. of Motors.	CONDUCTORS.		COMPOSITION OF STRAND.		TOTAL MAXIMUM CURRENT.		Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.
		No. per Pole.	Total Effective Area per Pole Sq. Ins.	No.	Diameter.	In Circuit.	Rule.			
BALLAST PUMP ...	1	1	35 $\frac{1}{2}$	7	2.5 $\frac{1}{2}$	75	130	100	Leadcable	armoured
MAIN BILGE LINE PUMPS ...	2	1	10	7	1.35	27	35	80	"	"
GENERAL SERVICE PUMP ...	1	1	10	7	1.35	27	35	80	"	"
EMERGENCY BILGE PUMP ...	2	2	10 $\frac{1}{2}$	7	1.35	27	35	80	"	"
SANITARY PUMP ...	1	1	16	7	1.72	40	70	15	"	"
CIRC. SEA WATER PUMPS ...										
CIRC. FRESH WATER PUMPS ...	1	1	185	7	5.8	287	350	80	Leadcable	armoured
AIR COMPRESSOR ...	1	1	16	7	1.72	20	60	50	"	"
FRESH WATER PUMP ...	2	2	16	7	1.72	20	60	50	"	"
ENGINE TURNING GEAR ...	2	2	70	7	3.6	140	200	30	"	"
LUBRICATING OIL PUMPS ...	1	1	10	7	1.35	28	35	90	"	"
OIL FUEL TRANSFER PUMP ...	1	1	185	7	5.8	290	450	380	"	"
WINDLASS ...	5	1	185	7	5.8	290	450	360	"	"
WINCHES, FORWARD ...	4	1	185	7	5.8	290	450	240	"	"
amidships	4	1	185	7	5.8	290	450	120	"	"
WINCHES, AFT ...	1	1	35	7	2.5	85	130	90	"	"
Motion winch aft										
STEERING GEAR ...										
(a) MOTOR GENERATOR ...	1	1	16	7	1.72	40	60	80	"	"
(b) MAIN MOTOR ...	1	1	6	7	1.05	18	25	120	"	"
WORKSHOP MOTOR ...										
VENTILATING FANS ...										
oil separator	2	2	16	7	1.72	27	70	80	"	"

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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.

pr. Østlandsk Elektrisk Anstaltselskap

Electrical Engineers.

Date 27/8 - 1930.

#### COMPASSES.

Distance between electric generators or motors and standard compass

8 meter

Distance between electric generators or motors and steering compass

7 meter.

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.

pr. A/s Fredrikstad mek. Verksted

Builder's Signature.

Date 5.9.30

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

examined and tried under working condition and found to work satisfactory. The workmanship is of the best description and in my opinion the notation "elec. light" should be inserted in the Register Book.

It is submitted that  
this vessel is eligible for  
THE RECORD. Elec. Light.

23/9/30.

Total Capacity of Generators

63.14 " 66. Kilowatts.  $63 + 2.8 = 192$  Kw total

The amount of Fee

Kr 200

When applied for,  
23/8 1930.

Travelling Expenses (if any) £

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When received,  
8.10.30

Pier G. Røer

Surveyor to Lloyd's Register of Shipping.

TUE. 12 MAY 1931

Committee's Minute

FRI. 26 SEP 1930

Assigned

Elec. Light



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