

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

OCT 30 1939

Received at London Office.

Date of writing Report... 20th Oct. 1939. When handed in at Local Office... 24th Oct. 1939. Port of... Helsingborg & Mahro.

No. in Survey held at... Landskrona. Date, First Survey... 17th July. Last Survey... 16th Oct. 1939. (Number of Visits... 12.)

39655 on the... Single Screw Motor Tanker "JANUS" Tons { Gross: 9965, Net: 5931

Built at... Landskrona. By whom built... Öresundsvarvet A.Ö. Yard No. 54. When built... 1939.

Owners... Rederi A.Ö. Nordstjernan. Port belonging to... Stockholm.

Electrical Installation fitted by... Öresundsvarvet A.Ö. Contract No. ✓. When fitted... 1939.

Is vessel fitted for carrying Petroleum in bulk... Yes. Is vessel equipped with D.F... Yes. E.S.D... Yes. Gy.C... ✓. Sub.Sig... ✓.

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

Heating... 110. Power... 110. Direct or Alternating Current, Lighting... Direct. Power... Direct. 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, main generators. Are shunt field regulators provided... Yes. Is the compound winding connected to the negative or positive pole

Positive pole. 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. Are the lubricating arrangements and the construction of the generators as per rule... Yes.

Position of Generators. Main: Both on port side of the motor space. Aux: On starboard side at the fore end of motor space. 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... On a platform on port side in motor space.

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... No approx. 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.

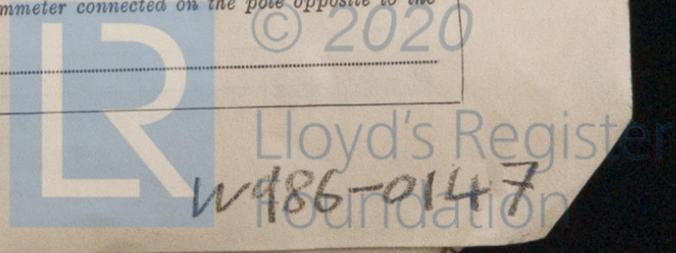
Description of Main Switchgear for each generator and arrangement of equaliser switches... Main generators:-

A double pole circuit breaker with overload & reversed current trips & a single pole equaliser switch. Aux. generator:- A double pole linked change over switch & a fuse on each pole.

A double pole linked switch & a fuse on each pole. and for each outgoing circuit.

Are compartments containing switchboards composed of fire-resisting material or lined as per Rule... Yes. Instruments on main switchboard... 5

ammeters... 4. 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... Ohmmeter.



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 *yes*, state maximum fall of pressure between bus bars and any point under maximum load *less than allowed in sec. 4* 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 *lead covered & armoured* or run in conduit *yes*. State how the cables are supported and protected *Supported by metal clips. Protected where necessary.*

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 effectually 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 stokeholds 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 *yes*, if so, how are they protected *Lamps contained in gastight fittings and cables led in gastight tubing.*

and where are the controlling switches fitted *Wholly outside these spaces*, 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 *None*. 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 ...	1	75	110	68 2/3	450	Heavy oil engine.	Heavy oil	Above 150° F.
Auxiliary	1	75	110	68 2/3	450	Steam engine.		
EMERGENCY ...	1	20	110	18 2/3	850	"		
ROTARY TRANSFORMER								

GENERATOR CABLES.

DESCRIPTION.	KILOWATTS.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (lead plus return feet).	INSULATED WITH.	HOW PROTECTED.
		No. in Parallel Per Pole.	Sectional Area or Diameter of Strands Sq. mm.	In the Circuit.	Rule.			
MAIN GENERATOR	2 x 75	2	185	68 2/3	720	max. 24	Cambric	Lead covered & armoured
EQUALISER			2 x 185	-	-	" 24	"	with galv. steel tape.
Auxiliary generator	20	1	150	18 2/3	200	60	"	"
EMERGENCY GENERATOR								
ROTARY TRANSFORMER: MOTOR								
" " GENERATOR								

MAIN DISTRIBUTION CABLES.

AUX. SWITCHBOARDS AND SECTION BOARDS								
Aux. switchboard A (Accom. aft. room)	1	6	20	30	20	Cambric	Lead covered & armoured	
" " B (Deck lights)	1	4	15	20	25	"	with galv. steel tape.	
" " C (Officers' accom. aft.)	1	6	20	30	30	"	"	
" " D (Accom. midship)	2	25	60	125	180	"	"	
" " E (Nav. light)	1	2.5	10	15	194	"	"	
" " F (Eng. cargo hold)	1	2.5	10	15	252	"	"	
Emergency room.	1	16	35	50	24	"	"	

LIGHTING AND HEATING, ETC., CABLES.

WIRELESS	1	10	25	38	200	Cambric	Lead covered & armoured	
NAVIGATION LIGHTS	1	1.5	0.4	8	max. 230	"	with galv. steel tape.	
LIGHTING AND HEATING	1	4	15	20	290	"	"	
Heaters	1	2.5	max. 50	60	max. 200	"	"	
Heaters	1	16	35	50	212	"	"	
Cooking	1	10	30	38	76	"	"	

MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED.	No.	B.H.P.						
Sanitary pumps	1	8.5	1	35	57	75	Cambric	Lead covered & armoured
Circ. sea water & intake pumps	2	52	2	240	350	540	max. 26	with galv. steel tape.
Wash water pumps	1	2.5	1	6	17	30	50	"
Compass pumping gear	1	10	1	50	67	100	52	"
Oil fuel transfer pump	1	9	1	50	60	100	64	"
Waterstop motor	1	4	1	10	27	38	68	"
Refrigerating machine	1	12	1	50	80	100	58	"
Cooling water pumps for ref. m.	1	2	1	6	13.5	30	44	"
Balance pumps	1	2	1	6	13.5	30	44	"
Oil separators	2	3	1	10	20	38	max. 25	"
Hydro-pumps (eng. room)	1	1	1	4	6.5	20	30	"
" (amidship)	1	0.8	1	6	5.5	30	174	"
Cooling water pumps (aux. eng.)	1	3	1	10	20	38	20	"

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.

Herby

Electrical Engineers.

Date 23rd Oct. 1939.

COMPASSES.

Minimum distance between electric generators or motors and standard compass 9 m. (Wireless rotating transformer)
 Minimum distance between electric generators or motors and steering compass 8 m. (" " ")

The nearest cables to the compasses are as follows:—

A cable carrying 21 Ampères 14 feet from standard compass 11 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 *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 0 degrees on ✓ course in the case of the standard compass, and 0 degrees on ✓ course in the case of the steering compass.

ÖRESUNDSVARVET

AKTIEBOLAG

L. Arvidell

Builder's Signature.

Date 23rd Oct. 1939.

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 above described electric equipment installation has been fitted onboard under cover in accordance with the Rules, approved plans and instructions and has been tested with satisfactory result.
 The workmanship and the materials are good.

*Noted
 24/10/39*

Total Capacity of Generators 170 Kilowatts.

The amount of Fee *Memo. # 750.50* When applied for, 24th Oct. 1939.

Travelling Expenses (if any) £ : : When received, 10/11/39 *R.B.Y. 11/11.*

FRI. 3 NOV 1939

A. Boring
 Surveyor to Lloyd's Register of Shipping.

Committee's Minute
 Assigned *See Memo. F.C. 1826*

2m.10.38.—Transfer. (MADE IN ENGLAND.)
 (The Surveyors are requested not to write on or below the space for Committee's Minute.)



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