

REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office.....

Date of writing Report 5-10-1929. When handed in at Local Office 7-10-1929. Port of Nicolaieff U.S.S.R.

No. in Survey held at Nicolaieff. Date, First Survey 27-7-28. Last Survey 27-9-1929.
Reg. Book. (Number of Visits C.A.)

on the Motor Vessel "EMBA NEFT" Tons { Gross 7791
Net 5335

Built at Nicolaieff. By whom built Nicolaieff. Yard. "Andre Marti" Yard No. 185 When built 1929.

Owners Kaphtha Syndicate U.S.S.R. Port belonging to Khorvassisk. U.S.S.R.

Electric Light Installation fitted by State Electric Trust. Contract No. ✓ When fitted 1929.

System of Distribution Double Wire

Pressure of supply for Lighting 110 volts, Heating ✓, Power 110. 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 In Auxillary Engine-room.

is the ventilation in way of the generators satisfactory ✓ Yes, are they clear of all inflammable material ✓ None

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 special room off Auxillary engine-room with extended spindles into Aux. Eng. 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 ✓ 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 ✓ Micranite used on fittings, 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 ✓ None, 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 ✓ Each of 2-80 kW

generators and the 38 kW generator has 2 single-pole fuses + 2 single-pole circuit breakers with overload & reverse trips. Both the 80 kW sets are connected to the main pair of bars in parallel. ✓

The 38 kW set to another pair of bus bars for connecting in parallel and generator has 2 single pole fuses + double pole circuit-breaker + double pole switch. ✓

Instruments on main switchboard 12 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. ✓ Ammeter

for pressure 115 Volts

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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Single 7
Cables: *Single 7*, *triple*, *concentric*, or *multicore multicore* are the cables insulated and protected as per Tables IV or V of the Rules *Table IV*
Fall of Pressure, state maximum between bus bars and any point of the installation under maximum load *Power 1.5 Volts Lighting 5.3 Volts*
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 *Metal clips. Sheet-steel plating and tubes when passing through decks.*
 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 *Yes*
Joints in Cables, state if any, and how made, insulated, and protected *Power cables - none*
Lighting cables - joint boxes.
Watertight Glands 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 brashed *Yes*. state the material of which the bushes are made *Lead*
Earthing Connections, state what earthing connections are fitted and their respective sectional areas *Yes*
 are their connections made as per Rule *Yes*
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 *Emergency dynamo of 4 H.P. is located in compartment on bridge deck and driven by an oil engine which is started by hand. It is switched on from the emergency switchboard.*
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*
 has each navigation lamp an automatic indicator as per Rule *Yes*
Secondary Batteries, are they constructed and fitted as per Rule *none except for Radio*
Fittings, are all fittings on weather decks, in storerooms and engine rooms and where 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 *hermetically sealed with protective netting.*
 are any fittings placed in spaces where inflammable or explosive dust or gases are liable to be present, if so, how are they protected *Fittings hermetically sealed.*
 how are the cables led *Cables not fitted in these compartments.*
 where are the controlling switches situated *Outside of these compartments in places convenient for handling.*
Searchlight Lamps, No. of *1*, whether fixed or portable *Fixed*, are their fittings as per Rule *Yes*
Arc Lamps, other than searchlight lamps, No. of *none*, 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 *none*
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.	Ampères.	Rev. per Min.		Fuel Used.	Flash Point of Fuel.
MAIN	3	280	138	110	695.330	375	Diesel Engines	
AUXILIARY								
EMERGENCY	1	4		110	35	600	Internal combustion engine.	
ROTARY TRANSFORMER								

LIGHTING AND HEATING CONDUCTORS.

Ref. No.	DESCRIPTION.	No. of Conductors.	Effective Area of each Conductor Sq. Ins.	COMPOSITION OF STRAND.		Total Maximum Current Ampères.	Approximate Length (Lead and Return) Feet.	Insulated with	HOW PROTECTED.
				No.	Diameter				
	MAIN GENERATOR	3	400	91	2.33	39.5	695.330	Rubber	Lead Covered.
	EQUALISER CONNECTIONS	3	400	240	91-61	2.22	32		
	AUXILIARY GENERATOR								
	EMERGENCY GENERATOR	2	25	7	2.12	14	35		
	ROTARY TRANSFORMER								
	AUXILIARY SWITCHBOARDS	8	95	16/6	19/4	2.48	22		
	ENGINE ROOM	4	6	7	1.02	9	30		
	BOILER ROOM	8	1	7	0.41	6	3		
	ACCOMMODATION	2	1	7	0.41	6			
	WIRELESS	2	25	7	2.12	14	20		
	SEARCHLIGHT	2	35	19	1.56	15.5	40		
	MASTHEAD LIGHT	6	2.5	7	0.66	7.5	1.6		204/140
	SIDE LIGHTS	6	1	7	0.41	6			140
	COMPASS LIGHTS	4	1	7	0.41	6	0.5		10
	POOP LIGHTS	3	4	7	0.86	8.5	1.6		360
	CARGO LIGHTS	8	2.5	7	0.66	7.5	4.5		246
	ARC LAMPS								
	HEATERS								

MOTOR CONDUCTORS.

Ref. No.	DESCRIPTION.	No. of Motors.	Effective Area of each Conductor Sq. Ins.	COMPOSITION OF STRAND.		Total Maximum Current Ampères.	Approximate Length (Lead and Return) Feet.	Insulated with	HOW PROTECTED.
				No.	Diameter				
	BALLAST PUMP FOR 2	1	240	61	2.22	32	300	Rubber	Lead covered
	MAIN BELLOWS LINE PUMPS	2	625	91	2.94	47.5	635		185 "
	GENERAL SERVICE PUMP	2	125	37	2.1	23.5	200		180 "
	EMERGENCY BILGE PUMP								
	BALLAST of SANITARY PUMP A.F.T.	1	400	91	2.33	39.5	445		74 "
	CIRC. SEA WATER PUMPS	1	25	7	2.12	14	69		25 "
	CIRC. FRESH WATER PUMPS								
	BILGE PUMP AIR COMPRESSOR FOR P.	1	25	7	2.12	14	65		30 "
	FRESH WATER PUMP A.F.T.	1	16	7	1.68	12.5	35		13 "
	ENGINE TURNING GEAR	2	35	19	1.56	15.5	160		60 "
	ENGINE REVERSING GEAR								
	LUBRICATING OIL PUMPS	1	50	19	1.9	17.5	125		88 "
	OIL FUEL TRANSFER PUMP	6	125/120/15	37/37/4	2.1	23.5	145/200/8		13/20/15/60 "
	WINDLASS	1	400	91	2.33	39.5	450		10 "
	WINCHES, FORWARD	2	95	19	2.48	22	120		150 "
	WINCHES, AFT	1	400	91	2.33	39.5	285		12 "
	STEERING GEAR								
	(a) MOTOR GENERATOR	1	185-400	37/91	2.48	28.5	285		10 "
	(b) MAIN MOTOR	1	400	91	2.33	39.5	285		10 "
	WORKSHOP MOTOR	1	25	7	2.12	14	40		20 "
	VENTILATING FANS	7	10/25	7/19	1.68	12.5	28/47		30 "
	Fire extinguishing Plant Separator	1	95	19	2.48	22	200		30 "
	Compressor	1	25	7	2.12	14	12.5		60 "
	Mixers	1	6	7	1.02	9			8 "
	Pump	1	6	7	1.02	9			6 "
	Ventilation	1	4	7	0.86	8.5			8 "
	Windlass Motor Generator	1	185/400	37/91	2.48	28.5	292/450		10/10 "

Cables made according to Rules of the Registrar Naval Department. See Appendix letter 14 October 1927.

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.

H. M. Kobasek

Electrical Engineers.

Date *19th August 1929*

COMPASSES.

Distance between electric generators or motors and standard compass *27'-6"*
 Distance between electric generators or motors and steering compass *34'-0"*

The nearest cables to the compasses are as follows:—

A cable carrying *4* Ampères *10* feet from standard compass *6* feet from steering compass.
 A cable carrying *0.5* Ampères *fixed to body of* ~~feet from~~ standard compass *and* ~~feet from~~ steering compass *for lighting*
 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 *Under normal working conditions*

Has the effect of switching on and off circuits, motors and other electro-magnetic apparatus within the vicinity of the compasses been noted *no*

The maximum deviation due to electric currents was found to be *-1.25* degrees on *SE and SW* course in the case of the standard compass, and *-2 + 2* degrees on *SW & NW* course in the case of the steering compass.

M. Kobasek

Builder's Signature.

Date *19th Aug. 1929*

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.)

This installation has been fitted on board under special survey, tested under working conditions and found satisfactory. The workmanship was found to be good & sound. Constant attendance was given on board during the installing of the plant.

J. J. Barr

Total Capacity of Generators *202* Kilowatts.

The amount of Fee £	:	:	When applied for,
		 19.....
Travelling Expenses (if any) £	:	:	When received,
		 19.....

J. J. Barr
 Surveyor to Lloyd's Register of Shipping.

Committee's Minute

Assigned

Im. 120. - Transfer. (The Surveyors are requested not to write on or back in the space for Committee's Minute.)



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