

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office

22 SEP 1949

Date of writing Report 22nd Aug. 1949 When handed in at Local Office 22nd August, 1949. Port of PHILADELPHIA, PA.

No. in Survey held at Chester, Pa. Date, First Survey 7th April, Last Survey 15th June, 1949.
Reg. Book. (Number of Visits seven)- on the S.S. "RAS AL ARDH" Tons { Gross 17612.57
Net

Built at Chester, Pa. By whom built Sun S.B. & D.D. Co. Yard No. 569 When built 1949

Owners. Kupan Transport Co. Port belonging to

Electric Light Installation fitted by Sun S.B. & D.D. Co. Contract No. 569 When fitted 1949

Is the Vessel fitted for carrying Petroleum in bulk yes

3 phase 3 wire for power
System of Distribution 3 phase 3 wire for ltg. panels, 2 wire single phase for ltg. branch circuits
Pressure of supply for Lighting 115 volts, **Heating** 115 generator 220 (water heater) volts, **Power** 440 volts.
Direct or Alternating Current, Lighting Alternating **Power** Alternating
 If alternating current system, state frequency of periods per second 60
 Has the **Automatic Governor** been tested and found efficient when the whole load is suddenly thrown on or off yes
 (as per AIEE Stds.)
Generators, do they comply with the requirements regarding temperature rise yes, are they compound wound AC generators
 are they over compounded 5 per cent. - 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~~ exciter field yes Have certificates of test results for machines under 100 kw. been submitted and approved - Have machines over 100 kw. been inspected by the Surveyors during manufacture and testing 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 machinery flat stbd. side, 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 machinery flat stbd. side
 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
 (as per AIEE Stds.)
 is it of an approved type 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. - is the non-hygroscopic insulating material of an approved type. - 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, temperature rise of omnibus bars yes, individual fuses to voltmeter, pilot or earth lamp. yes, are moving parts of switches alive in the "off" position no are all screws and nuts securing connections effectively locked yes are any fuses fitted on the live side of switches. no
Main Switchgear, description of switchgear for each generator and each outgoing circuit, and arrangement of equalizer switches 3 pole manually operated circ. breaker with 3 overcurrent trips & shunt trip. (generator) (each feeder circuit)
 Are turbine driven generators fitted with emergency trip switch as per rule yes Are cupboards or compartments containing switchboards composed of fire-resisting material or lined with approved material - **Instruments** on main switchboard 2 ammeters. 3 volt-me. rs. 1 synchronizing device for paralleling purposes. For compound machines is the ammeter connected on the opposite pole to equalizer connection -
Earth Testing, state what means are provided at the main switchboard for indicating the state of the insulation of the system Ground lamps (A.I.E.E. Stds.) **Switches, Circuit Breakers and Fusible Cut-outs**, (A.I.E.E. Stds.) do these comply with the requirements of the Rules yes are the fusible cutouts of an approved type yes have the reversed

PARTICULARS OF GENERATING PLANT.								
DESCRIPTION OF GENERATOR.	No. of	RATED AT				DRIVEN BY	WHERE DRIVEN BY AN INTERNAL COMBUSTION ENGINE.	
		Kilowatts.	Volts.	Amperes.	Revs. per Min.		Fuel Used.	Flash Point of Fuel.
MAIN	2	400	450	642	1200	Steam Turbine		
XXXXXXXX								
EMERGENCY	1	60	450	96	1200	Diesel Engine	#2 Diesel Oil	150° F Min.
ROTARY TRANSFORMER	2	5	120	41.7	1750	Motor		

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 Nominal Area per Pole Sq. Ins.	No.	Diameter.	Circuit.	AMPERES.			
MAIN GENERATOR	2	.943	61	.099	642 ✓	882	30	VC	L & A
EQUILIBRIUM CONNECTIONS									
AUXILIARY GENERATOR									
EMERGENCY GENERATOR	1	.104	19	.083	100 ✓	158	10	VC	L & A
ROTARY (Motor)	1	.005	7	.030	11 ✓	22	10	VC	L & A
TRANSFORMER (Generator)	1	.0206	7	.061	417 ✓	55.5	10	VC	L & A
ENGINE ROOM lighting	1	.0521	7	.097	48 ✓	99	50	VC	L & A
BOILER ROOM lighting	1	.0261	7	.068	26 ✓	65	75	VC	L & A
AUXILIARY SWITCHBOARDS									
ACCOMMODATION									
Midship Qtrs. Ltg.	1	.1318	19	.094	63 ✓	185	350	VC	L & A
Upper Dk. Aft Ltg.	1	.0521	7	.097	42 ✓	99	125	VC	L & A
Poop Dk. Ltg.	1	.0261	7	.068	44 ✓	65	150	VC	L & A
WIRELESS	1	.0521	7	.097	30 ✓	99	400	VC	L & A
SEARCHLIGHT	1	.008	7	.038	9 ✓	30	30	VC	L & A
MASTHEAD LIGHT	1	.003	7	.024	0.5 ✓	11.5	230	RC	L & A
SIDE LIGHTS	1	.003	7	.024	0.5 ✓	11.5	50	RC	L & A
COMPASS LIGHTS									
POOP LIGHTS									
CARGO LIGHTS									
Midship Water Heater	1	.005	7	.030	9 ✓	22	40	VC	L & A
HEATERS (Generator)	1	.005	7	.030	5.4 ✓	22	30	VC	L & A

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 Nominal Area per Pole Sq. Ins.	No.	Diameter.	In Circuit.	AMPERES.			
1st stage heater & drain cool2	2	1	.005	7	.030	20 ✓	22	50	VC	L & A
ENGINE ROOM										
ENGINE ROOM	1	1	.005	7	.030	14 ✓	22	80	VC	L & A
Cargo Stripping Pump	1	1	.1659	19	.105	125 ✓	217	60	VC	L & A
MAIN CONDENSATE PUMP										
MAIN CONDENSATE PUMP	2	1	.0206	7	.061	38 ✓	55.5	60	VC	L & A
SANITARY PUMP	1	1	.005	7	.030	20 ✓	22	65	VC	L & A
CIRC. SEA WATER PUMPS	1	1	.1659	19	.105	150 ✓	217	60	VC	L & A
Drinking	2	1	.005	7	.030	1.8 ✓	22	75	VC	L & A
CIRC. FRESH WATER PUMPS	2	1	.0206	7	.061	38 ✓	55.5	70	VC	L & A
AIR COMPRESSORS	2	1	.005	7	.030	1.8 ✓	22	80	VC	L & A
Wash	2	1	.005	7	.030	1.8 ✓	22	80	VC	L & A
FRESH WATER PUMP	1	1	.005	7	.030	11 ✓	22	50	VC	L & A
ENGINE TURNING GEAR	2	1	.005	7	.030	14 ✓	22	70	VC	L & A
Lube Oil Cooler Pump	2	1	.005	7	.030	14 ✓	22	70	VC	L & A
ENGINE REVERSING GEAR	2	1	.0206	7	.061	33 ✓	55.5	80	VC	L & A
LUBRICATING OIL PUMPS	2	1	.005	7	.030	14 ✓	22	90	VC	L & A
OIL FUEL TRANSFER PUMP	2	1	.005	7	.030	3.2 ✓	22	75	VC	L & A
Fuel Oil Serv. Pump	1	1	.005	7	.030	11 ✓	22	80	VC	L & A
WATER	1	1	.005	7	.030	11 ✓	22	80	VC	L & A
Emer. Forced Draft	1	1	.005	7	.030	11 ✓	22	80	VC	L & A
WATER	1	1	.005	7	.030	11 ✓	22	80	VC	L & A
Forced Draft Fans	3	1	.1318	19	.094	113 ✓	185	75	VC	L & A
Aux. Cond. Pump	1	1	.0206	7	.061	38 ✓	55.5	60	VC	L & A
WATER	1	1	.0261	7	.068	50 ✓	65	60	VC	L & A
Aux. Circ. Pump	1	1	.0261	7	.068	50 ✓	65	60	VC	L & A
STEERING GEAR—										
(a) MOTOR GENERATOR	2	1	.0521	7	.097	63 ✓	99	150	VC	L & A
(b) MAIN MOTOR	1	1	.005	7	.030	7.5 ✓	22	75	VC	L & A
Emer. Feed Pump	1	1	.005	7	.030	2.5 ✓	22	75	VC	L & A
WATER	1	1	.005	7	.030	11 ✓	22	80	VC	L & A
Emer. F.O. Service	1	1	.005	7	.030	11 ✓	22	80	VC	L & A
WATER	1	1	.005	7	.030	11 ✓	22	80	VC	L & A
Refrig. Compressor	2	1	.026	7	.068	11 ✓	65	600	VC	L & A
" " " "	2	1	.005	7	.030	11 ✓	22	90	VC	L & A
Refrig. Cond. Circ. Pump	1	1	.005	7	.030	1.8 ✓	22	90	VC	L & A
" " " "	2	1	.005	7	.030	2.5 ✓	22	90	VC	L & A
Brine & Cond. Pump	2	1	.005	7	.030	7.5 ✓	22	80	VC	L & A
L.O. Purifier Pump	2	1	.005	7	.030	3.2 ✓	22	65	VC	L & A
Comb. Cont. Air pump	1	1	.005	7	.030	11 ✓	22	75	VC	L & A
MAIN CONDENSATE PUMP										
MAIN CONDENSATE PUMP	1	1	.005	7	.030	11 ✓	22	75	VC	L & A
ENGINE ROOM	1	1	.005	7	.030	11 ✓	22	80	VC	L & A
Lathe	1	1	.005	7	.030	4.6 ✓	22	90	VC	L & A
ENGINE ROOM	1	1	.005	7	.030	4.6 ✓	22	90	VC	L & A
Drill Press	1	1	.005	7	.030	1.8 ✓	22	90	VC	L & A
Grinder	1	1	.005	7	.030	4.6 ✓	22	90	VC	L & A
CIRC. SEA WATER PUMPS	1	1	.005	7	.030	7.5 ✓	22	90	VC	L & A
Shaper	1	1	.005	7	.030	7.5 ✓	22	90	VC	L & A
CIRC. FRESH WATER PUMPS	1	1	.005	7	.030	7.5 ✓	22	90	VC	L & A
Boiler Rm. Vent Sup	2	1	.008	7	.038	20 ✓	30	90	VC	L & A
APPROX	2	1	.005	7	.030	6.4 ✓	22	90	VC	L & A
FRESH WATER PUMP	2	1	.005	7	.030	17.2 ✓	22	90	VC	L & A
Eng. " " " "	2	1	.005	7	.030	17.2 ✓	22	90	VC	L & A
ENGINE ROOM	2	1	.005	7	.030	17.2 ✓	22	90	VC	L & A
Hospital Exhaust Fan	1	1	.005	7	.030	0.7 ✓	22	100	VC	L & A
LUBRICATING OIL PUMPS	2	1	.005	7	.030	4.6 ✓	22	100	VC	L & A
Aft. Ctrs. Supply Fan	1	1	.005	7	.030	4.6 ✓	22	90	VC	L & A
ON BOARD TRANSFER PUMP	1	1	.005	7	.030	4.6 ✓	22	90	VC	L & A
Pump Rm. Exh. Fan	1	1	.005	7	.030	4.6 ✓	22	90	VC	L & A
WATER	3	1	.005	7	.030	1.8 ✓	22	90	VC	L & A
Aft Ctrs. Exh. Fan	1	1	.005	7	.030	1.8 ✓	22	100	VC	L & A
WATER	1	1	.005	7	.030	0.6 ✓	22	40	VC	L & A
Galley Exh. Fan	1	1	.005	7	.030	0.6 ✓	22	40	VC	L & A
Batt. Rm. Exh. Fan	1	1	.005	7	.030	0.6 ✓	22	40	VC	L & A
WATER	1	1	.005	7	.030	0.6 ✓	22	40	VC	L & A
Midship Ctrs. Supply	1	1	.005	7	.030	3.2 ✓	22	30	VC	L & A
STEERING GEAR	2	1	.0521	7	.097	63 ✓	99	150	VC	L & A
Midship Ctrs. Exh.	1	1	.005	7	.030	1.8 ✓	22	30	VC	L & A
Midship Fresh Water	1	1	.005	7	.030	1.8 ✓	22	30	VC	L & A
Midship Fresh Water	1	1	.005	7	.030	1.8 ✓	22	30	VC	L & A
WORKSHOP MOTOR TRANS. P.	1	1	.005	7	.030	1.8 ✓	22	30	VC	L & A

Compressors for refrigeration fwd.

All Conductors are of annealed copper conforming to British Standard Specification No. 7 (or International Electro-technical Commission Publication No. 28).

The Insulated Conductors are guaranteed to withstand the immersion and resistance tests specified in the Rules.

The foregoing is a correct description.

Sun Shipbuilding and Dry Dock
T. M. Jacobson

Electrical Engineers.

Date *Aug 25-49*

COMPASSES.

Distance between electric generators or motors and standard compass..... 15 Feet (Motor for automatic whistle timing)

Distance between electric generators or motors and steering compass..... 15 Feet "

The nearest cables to the compasses are as follows:—

A cable carrying..... 25 Ampères..... 1 feet from standard compass..... 1 feet from steering compass.

A cable carrying..... 2 Ampères..... 10 feet from standard compass..... 10 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 nil degrees on..... any course in the case of the standard compass, and nil degrees on..... any course in the case of the steering compass.

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, opinions as to class, &c. The electrical equipment of this vessel.....)

has been installed under Special Survey and in accordance with the approved plans and New York letters; the workmanship and materials are good.

The installation has been examined under full working conditions, tested as per Rule, and found satisfactory, and, in our opinion, is eligible to have the Society's Classification without special notation.

See separate report for the 400 K.W. Generator sets.

Note sent 26/10/49

Total Capacity of Generators 860 ✓ Kilowatts.

The amount of Fee £ : : When applied for, 18 Jul. 1949
per F.A.G.
When received.
Traveling Expenses (if any) £ : : 23 Aug. 1949

[Signature]
Surveyor to Lloyd's Register of Shipping.

Committee's Minute..... NEW YORK AUG 31 1949 *JS*

Assigned *Elec. light*



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