

Rpt. 13.

No. 8299

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

23 FEB 1943

Date of writing Report 1 Nov 1942 When handed in at Local Office 10 Nov 1942 Port of Philadelphia
 No. in Survey held at Chester Pa Date, First Survey 12 Aug Last Survey 30 Sept 1942
 Reg. Book. S/S MARKAY. (Number of Visits 5)
 Built at Chester Pa By whom built Sum 837 DD Co Yard No. 232 When built 1942
 Owners Regystone Tankship Corp Port belonging to Wilmington Del
 Electric Light Installation fitted by Sum 837 DD Co Contract No. 232 When fitted 1942
 Is the Vessel fitted for carrying Petroleum in bulk Yes

Tons { Gross 103 1/2
 Net

System of Distribution

Pressure of supply for Lighting 110 volts, Heating 110 volts, Power 200 volts.

Direct or Alternating Current, Lighting

AC

Power

AC

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

Generators, do they comply with the requirements regarding temperature rise

Yes

are they compound wound

AC

are they over compounded 5 per cent.

AC

if not compound wound state distance between each generator

Yes

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

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

Engine room

Aux machinery flat

Stb side

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

Main Switch Boards, where placed

Near Main generators

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

Same compartment

Switchboards, are they placed in accessible positions, free from inflammable gases and acid fumes

Yes

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

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

Yes

is the non-hygroscopic insulating material of an approved

type

Yes

and is the frame effectively earthed

Yes

Are the fittings as per Rule regarding: — spacing or shielding of live parts

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

2 Main generators 1600 Amp 3 Pole ACB & 1600 Amp 3 pole DT line switch Aux gen 200 Amp ACB 200 ST line switch.

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

Yes

Instruments on main switchboard

3

ammeters

3

volts

1 FREQ. METER

synchronising device for paralleling purposes. For compound machines is the ammeter connected on the opposite pole to equaliser connection

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

Ground lamps

Switches, Circuit Breakers and Fusible Cut-outs,

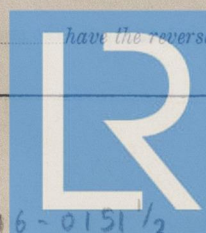
do these comply with the requirements of the Rules

Yes

are the fusible cutouts of an approved type

Yes

have the reversed



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current protection devices been tested under working conditions

construction, protection, insulation, material, and position of these as per rule

Cables: Single, twin, concentric, or multicore are the cables insulated and protected as per Tables IV, V, X or XI of the Rules

If the cables are insulated otherwise than as per Rule, are they of an approved type

any point of the installation under maximum load

area of 0.04 square inch and above provided with soldering sockets

If conductors are paper or varnished cambric insulated, is the dielectric at the exposed ends of the conductor protected from moisture by being suitably sealed with insulating compound, or waterproof insulating tape

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 any risk of mechanical damage

Support and Protection of Cables, state how the cables are supported and protected

If cables are run in wood casings, are the casings and caps secured by screws

separate grooves

Refrigerated Chambers, are the cables and fittings in accordance with the special requirements

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

Watertight Glands and Deck Tubes, are all cables passing through decks and watertight bulkheads provided with deck tubes or watertight glands

Bushes in Beams and Non-watertight Partitions, where unarmoured cables pass through beams and non-watertight partitions, are the holes efficiently bushed

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

position and method of control of the emergency supply and how the generator is driven

Navigation Lamps, are these separately wired

are the switches and fuses grouped in a position accessible only to the officers on watch

has each navigation lamp an automatic indicator as per Rule

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

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

are any fittings placed in spaces where inflammable or explosive dust or gases are liable to be present, if so, how are they protected

where are the controlling switches situated

are all fittings suitably ventilated

Heating and Cooking Appliances, are they constructed and fitted as per Rule

Searchlight Lamps, No. of

Arc Lamps, other than searchlight lamps, No. of

Motors, are their working parts readily accessible

are the brushes, brush holders, terminals and lubricating arrangements as per Rule

inflammable gases cannot accumulate and clear of all inflammable material

water, steam or oil

material, are the motors of the totally enclosed, pipe ventilated, forced draught, drip or flame proof type

if not of this type, state distance of the combustible material horizontally or vertically above the motors

have machines of over 100 BHP been inspected by the Surveyors during manufacture and testing

field and motor speed regulators, starters and controllers constructed and fitted as per Rule

are required, are these fitted as per Rule

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

If portable lamps for use in dangerous spaces are supplied, are they of a self-contained, battery-fed type approved by the Home Office

Spare Gear, if the vessel is for open sea service have spares been supplied as per Rule

Joint Boxes, Section and Distribution Boards, is the

Fall of Pressure, state maximum between bus bars and

Cable Sockets, are the ends of all cables having a sectional

Paper Insulated and Varnished Cambric Insulated Cables.

Cable Runs, are the cables fixed as far as possible in accessible positions

Are cables in machinery spaces, galleys, laundries, bathrooms and lavatories lead covered or run in conduit

are the cables run in

are the clips spaced as per Table VIII

Emergency Supply, state

are the fuses double pole

are they constructed and fitted as per Rule

are their fittings as per Rule

are they placed in well-ventilated compartments in which

are they protected from mechanical injury and damage from

if situated near unprotected woodwork or other combustible

Control Gear and Resistances, are the generator

Lightning Conductors, where lightning conductors

Ships carrying Oil having a Flash Point less than 150° F. Have the special requirements of

are all fuses of the filled cartridge type

are they of an approved type

are they approved by the Home Office

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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	2	400 each	220	1600	1200	Steam turbine		
AUXILIARY	1	50	"	200	"	"		
EMERGENCY								
STATIC TRANSFORMER	3	15KVA	220/110					

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.	Rule.			
MAIN GENERATOR	4	2.0	244	103	1600	2160	60	VIC	Lead & armoured
EQUALISER CONNECTIONS	4	2.0	244	"	"	"	70	"	"
AUXILIARY GENERATOR	1	.25	37	043	200	343	"	"	"
EMERGENCY GENERATOR	1	.0225	7	064	42	75	30	"	"
ROTARY RUNNING LIGHTS	1	.0225	7	"	"	"	"	"	"
TRANSFORMER	1	.007	7	036	3	28	900	"	"
ENGINE ROOM	1	.06	19	064	32	135	30	"	"
BOILER ROOM	1	.0225	7	"	16	75	120	"	"
MIDSHIP LIGHTING	1	.06	19	"	75	135	900	"	"
AUXILIARY SWITCHBOARDS	1	.007	7	036	9	28	120	"	"
GYRO. PISTON INDICATOR	1	.003	1	"	1	"	60	RC	"
ENGINE TELEGRAPH	1	.003	1	"	1	"	120	"	"
DOCKING	1	.003	1	"	1	"	60	"	"
Boiler	1	.003	1	"	1	"	60	"	"
Aft quarter Upper deck	1	.06	19	"	38	135	210	VC	"
Accommodation Room	1	.0225	7	"	49	75	120	"	"
LEG. TRANS. SECONDARY	1	.5	61	103	400	540	50	"	"
DC distribution	1	.0225	7	064	44	75	900	"	"
Gyro pilot	1	.007	7	036	10	28	200	"	"
ROM indicator	1	.003	1	064	1	10	"	RC	"
WIRELESS									
SEARCHLIGHT									
MASTHEAD LIGHT									
SIDE LIGHTS									
COMPASS LIGHTS									
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 Nominal Area per Pole Sq. Ins.	No.	Diameter.	In Circuit.	Rule.			
FIRE PUMP	1	1	.03	37	103	250	385	210	VC	Lead & armoured
MAIN BILGE LINE PUMPS	1	1	.0225	7	064	28	75	240	"	"
FORCED DRAUGHT	2	1	.35	37	093	125	343	140	"	"
GENERAL SERVICE PUMP	1	1	.0645	7	029	125	65	130	RC	"
PUMP ROOM VENT	1	1	.0645	7	029	125	65	130	RC	"
EMERGENCY DRAIN PUMP	1	1	.0645	7	029	125	65	130	RC	"
SANITARY PUMP	1	1	.045	7	062	22	37	150	VC	"
CIRC. SEA WATER PUMPS	1	2	.6	74	103	320	770	170	"	"
MOTOR WELL DRAIN	1	1	.0645	7	029	35	105	110	RC	"
CARGO PUMP	1	1	.0645	7	029	35	105	110	RC	"
AIR COMPRESSOR	1	1	.04	19	052	40	104	220	VC	"
FRESH WATER PUMP	1	1	.0045	7	024	35	105	220	RC	"
ENGINE TURNING GEAR	1	1	.0145	7	012	22	17	160	VC	"
ATMOS. DRAIN PUMP	1	1	.007	7	036	15	28	150	"	"
ENGINE REVERSING GEAR	1	1	.007	7	036	15	28	150	"	"
LUBRICATING OIL PUMPS	2	1	.04	19	052	40	104	220	"	"
MAIN CONDENSATE	2	1	.06	19	064	12	135	150	"	"
CHEM. FEED TRANSFER PUMP	1	1	.1045	7	029	64	105	260	RC	"
WATER OIL PURIFIER	1	1	.1045	7	029	64	105	260	RC	"
STEERING GEAR	2	1	.06	19	064	12	135	170	VC	"
WINCHES, FORWARD	2	1	.0225	7	064	28	75	140	"	"
FUEL OIL SERVICE	1	1	.12	37	064	100	210	170	"	"
WINCHES, AFT TRANSFER	1	1	.12	37	064	100	210	170	"	"
VENTILATING FANS	5	1	.0145	7	012	115	17	680	"	"
GALE POWER	4	1	.3	37	103	275	385	210	RC	"
WASH WATER	1	1	.0045	7	024	35	105	220	RC	"
(a) MAIN MOTOR	1	2	.4	74	082	400	592	140	VC	"
REFRIG. COMPRESSOR	1	1	.0045	7	029	2	105	170	RC	"
WATERING MOTOR	1	1	.0145	7	012	19	57	170	VC	"
RADIO	1	1	.0125	7	064	15	75	425	"	"
AUX. CON. CIRC.	1	1	.12	37	064	100	210	170	"	"
AUX. CONDENSATE	1	1	.0145	7	012	22	57	170	"	"
MACHINE SHOP	1	1	.0225	7	064	28	75	180	"	"
LT. TRANS. PRIMARY	1	1	.2	37	083	180	246	60	"	"
MAIN CARGO PUMPS	1	2	.5	74	093	480	686	140	"	"

S/S MARKAY

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.

JM Jackson
(aw)

Electrical Engineers.

Date 10/12/42

COMPASSES.

Distance between electric generators or motors and standard compass

300 ft

Distance between electric generators or motors and steering compass

300 ft

The nearest cables to the compasses are as follows:-

A cable carrying 10 Ampères 6 feet from standard compass 6 feet from steering compass.

A cable carrying 3/10 Ampères 7 feet from standard compass 7 feet from steering compass.

A cable carrying 1/2 Ampères 9 feet from standard compass 9 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 All course in the case of the standard compass, and 0 degrees on All course in the case of the steering compass.

JM Jackson
(aw)

Builder's Signature.

Date 10/12/42

Is this installation a duplicate of a previous case

Yes

If so, state name of vessel S/S SEAKAY

General Remarks (State quality of workmanship, opinions as to class, etc.)

The U.S. Maritime Commission ordered this vessel to be built under the rules & with the Classification of the American Bureau of Shipping. After the work was well advanced the Managing Owners made special arrangements to have this Society's Classification as well.

AC electrical equipment was decided upon for this whole class of U.S. tankers: this is allowed under U.S. Government rules.

It is recommended that this be accepted in this instance.

The electrical installation was fitted & tested under our supervision with satisfactory results, the workmanship & materials are good.

Plans could not be obtained until the vessel was completed, these are forwarded herewith.

Regarding forms 7b for the alternators, the Pittsburgh Surveyors state that the tests on these were witnessed by the Surveyors to the American

Please see Continuation sheet

Total Capacity of Generators 850 Kilowatts.

The amount of Fee

\$100.00

So Agreed.

Travelling Expenses (if any) £

When applied for,
30th Nov. 1942
When received,
19

Surveyor to Lloyd's Register of Shipping.

Committee's Minute

NEW YORK JAN 13 1943

Assigned

Elec. light