

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office

3 APR 1950

Date of writing Report 7th March, 1950 When handed in at Local Office 7th March, 1950. Port of PHILADELPHIA, PA.

No. in Survey held at Chester, Pa.

Date, First Survey 9th Nov., Last Survey 26th Jan., 1950.

Reg. Book.

(Number of Visits six)

- on the steel screw steamer "SOVAC COMET"

Tons { Gross 17597.94
Net -

Built at Chester, Pa. By whom built Sun S.B. & D.D. Co. Yard No. 574 When built 1949-50

Owners Tankers Navigation Co., Inc. Port belonging to Panama

Electric Light Installation fitted by Sun S.B. & D.D. Co. Contract No. 574 When fitted 1949-50

Is the Vessel fitted for carrying Petroleum in bulk yes

System of Distribution Two wire

Pressure of supply for Lighting 115 volts. Heating 115 volts. Power 230 volts.

Direct or Alternating Current, Lighting Direct Power Direct

If alternating current system, state frequency of periods per second Ship service AC motor generator set 60 cycle

Has the Automatic Governor been tested and found efficient when the whole load is suddenly thrown on or off yes

(A.I.E.E.)

Generators, do they comply with the requirements regarding temperature rise yes, are they ~~compounded~~ Stabilized shunt wound

are they over compounded 5 per cent. - if not compound wound state distance between each generator 10 feet

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 ~~yes~~ 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 ~~yes~~ A.I.E.E. yes

Position of Generators Machinery flat upper engine room port 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, upper engine room - port 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

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 ~~yes~~ (A.I.E.E.) 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 1600 amp. circ. breaker, man.oper. with overload & reverse current trips & undervoltage device, 1600 amp. 3 pole disconnect switch

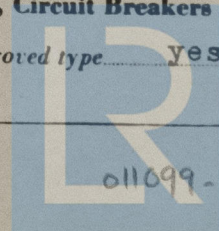
Are turbine driven generators fitted with emergency trip switch as per rule yes Are cupboards or compartments containing switchboards composed of

fire-resisting material or lined with approved material. - Instruments on main switchboard. - 2 ammeters 3 volt-

meters. - synchronizing device for paralleling purposes. For compound machines is the ammeter connected on the opposite pole to equalizer connection

yes 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. Switches, Circuit Breakers and Fusible Cut-outs,

do these comply with the requirements of the ~~yes~~ yes are the fusible cutouts of an approved type yes have the reversed

current protection devices been tested under working conditions **yes** **A.I.E.E.** Joint Boxes, Section and Distribution Boards, is the construction, protection, insulation, material, and position of these as per ~~rule~~ **yes** **A.I.E.E.**

Cables: Single, twin, ~~xxxxxx~~ **yes** are the cables insulated and protected as per ~~rule~~ **yes** **A.I.E.E.**

If the cables are insulated otherwise than as per Rule, are they of an approved type **yes** Fall of Pressure, state maximum between bus bars and any point of the installation under maximum load **3% for lgt., 5% for power** Cable Sockets, are the ends of all cables having a sectional area of 0.01 square inch and above provided with ~~xxxxxx~~ sockets **solderless** Paper Insulated and Varnished Cambric Insulated Cables.

If conductors are ~~xxxxxx~~ 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 **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** Are cables in machinery spaces, galleys, laundries, bathrooms and lavatories lead covered or run in conduit **Lead covered**

Support and Protection of Cables, state how the cables are supported and protected **Cables run behind joiner work on hangers spaced on 14" centers in horizontal runs & 18" centers in vertical runs.**

Cables on fore and aft walkway are run through ventilated conduits.

If cables are run in wood casings, are the casings and caps secured by screws **-**, are the cap screws of brass **-**, are the cables run in separate grooves **-** **A.I.E.E.** If armoured and lead covered cables are secured by metal clips, are the clips spaced as per ~~rule~~ **yes** **A.I.E.E.**

Refrigerated Chambers, are the cables and fittings in accordance with ~~rule~~ **Yes**

Joints in Cables, state if any, and how made, insulated, and protected **Only in watertight 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 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 **Lead alloy sheath and cable armor effectually earthed as per Rule.**

A.I.E.E. are their connections made as per ~~rule~~ **yes.** **A.I.E.E.** Auxiliary Supply, state position and method of control of the ~~xxxxxx~~ supply and how the generator is driven **240 V. 2 wire direct from generators**

120 volt lamps paired in series for engine and boiler room spaces only.

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** **A.I.E.E.** **A.I.E.E.** 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 **-**

are any fittings placed in spaces where inflammable or explosive dust or gases are liable to be present, if so, how are they protected **Pump Rooms are lighted with fixtures (explosion proof) mounted in pump room bulkheads or decks. These fixtures are wired outside pump room and can only be relamped outside of pump room.**

where are the controlling switches situated **Outside of pump room spaces.**

are all fittings suitably ventilated **yes.** are all switches and lampholders constructed wholly of non-ignitable, non-absorbent materials **Yes.** **A.I.E.E.**

Heating and Cooking Appliances, are they constructed and fitted as per ~~rule~~ **Yes.** are air heaters constructed and fitted as per Rule **-**

Searchlight Lamps, No. of **one** * whether fixed or portable **Fixed.** are their fittings as per ~~rule~~ **Yes.** **A.I.E.E.**

Are Lamps, other than searchlight lamps, No. of **-** are their live parts insulated from the frame or case **-** are their fittings as per Rule **-**

Motors, are their working parts readily accessible **Yes.** are the coils self-contained and readily removable for replacement **Yes.** **A.I.E.E.** 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 **-** if not of this type, state distance of the combustible material horizontally or vertically above the motors **-** and **-**

have machines of over 100 BPH been inspected by the Surveyors during manufacture and testing **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 **-** Ships carrying Oil having a Flash Point less than 150° F. Have the special requirements of **A.I.E.E.** the ~~rule~~ been complied with regarding switches, joint boxes, section and distribution boards, protection of cables, method of distribution, lead of cables, lights and fittings **Yes.** are all fuses of the filled 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 type approved by the Home Office **A.I.E.E.** **Yes.**

Spare Gear, if the vessel is for open sea service have spares been supplied as per ~~rule~~ **Yes.**

WIRELESS	1	66400	7	97.4	50	99	620	"	"
Dk. Floodlts. & Rec. Ltg. Panel	1	168000	19	94	56	185	640	VC	L & A
Auxiliary Ltg.	1	4100	7	24.2	3.3	11.5	200	Rubber	"
Eng. Rm. Lighting xxxxxxx Panel	1	66400	7	97.4	95	99	20	"	"
Boiler Rm. Ltg panel xxxxxxx	1	33100	7	68.8	30	65	50	"	"

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 GENERATOR	2	300	240	1250	1200	Steam Turbine		
Standby GENERATOR	1	75	240	312	1800	Diesel Engine	Furnace Oil #2 - #4	150° F
LTG. M/Generator	2	40	120	330	1800	Motor		
ROTARY TRANSFORMER	2	4	120 Ac.	41	1750	Motor		

GENERATOR, LIGHTING AND HEATING CONDUCTORS.

DESCRIPTION.	No. of Poles.	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.	Millis.	In Circuit.	A.M.P.E.R.E.			
MAIN GENERATOR	2		1400000	61	107.1	1250	1340	120	VC	L & A
EQUALISER CONNECTIONS	2		1400000	61	107.1	-	1340	120	"	"
Standby GENERATOR	1		500000	37	116.2	312	529	120	"	"
Lighting GENERATOR	2		600000	61	99.2	330	441	150	"	"
ROTARY TRANSFORMER (Motor)	1		26300	7	61.2	30	55.5	60	"	"
TRANSFORMER (Generator..)	1		16500	7	48.6	41	41	60	"	"
ENGINE ROOM Vent. Power	1		500000	37	116.2	331	529	200	"	"
Aft. Ctrs. Vent. Power	1		33100	7	68.8	52	65	150	"	"
Fwd. Ctrs. Vent. Power	1		33100	7	68.8	9.2	65	640	"	"
Eng. Rm. Aux. Power	1		500000	37	116.2	435	529	120	"	"
Evap. Power	1		33100	7	68.8	41.4	65	180	"	"
Refrigeration Power	1		66400	7	97.4	101.2	99	200	"	"
Machine Shop Power	1		33100	7	68.8	50.6	65	150	"	"
Galley Power	1		212000	19	105.5	217	217	200	"	"
A.C. Power Panel	1		83700	19	66.4	45	117	640	"	"
Midship D.C. Power Panel	1		66400	7	97.4	35	99	640	"	"
Bridge Dk. Ltg. Panel	1		212000	19	105.5	120	217	640	"	"
Focsls Ltg. Panel	1		168000	19	94	20	185	920	"	"
Running Lts. Panel	1		10400	7	38.5	3.1	30	660	"	"
RELESS	1		66400	7	97.4	50	99	620	"	"
ARCHLIGHT	1		4100	7	24.2	8.7	11.5	60	Rubber	"
STEAD LIGHT	1		4100	7	24.2	.44	11.5	400	"	"
DE LIGHTS	1		4100	7	24.2	.44	11.5	140	"	"
per Dk. Art. Ltgs.	1		66400	7	97.4	84.4	99	220	VC	"
Dk. Ltg. Panel	1		66400	7	97.4	78	99	240	"	"
Eng. Rm. Lighting Panel	1		66400	7	97.4	95	99	20	"	"
Boiler Rm. Ltg. Panel	1		33100	7	68.8	38	65	70	"	"
HEATERS (Generator.)	1		33100	7	68.8	20	65	20	"	"

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.	A.M.P.E.R.E.			
Cargo Stripping Pumps	3	1	300000	37	90	275	376	140	VC	L & A
MAIN BILGE LINE PUMPS	3	1	16500	7	48.6	30	41	120	"	"
GENERAL SERVICE PUMP	1	1	300000	37	90	275	376	50	"	"
Aux. Circ. Pump	1	1	212000	19	105.5	147	217	50	"	"
SANITARY PUMPS	2	1	66400	7	97.4	58	99	70	"	"
Condensate Pumps	3	1	66400	7	97.4	76	99	180	"	"
CIRC. FRESH WATER PUMPS										
AIR COMPRESSORS	2	1	66400	7	97.4	58	99	170	"	"
FRESH WATER PUMP	2	1	6530	7	30.5	4.6	22	90	"	"
ENGINE TURNING GEAR	1	1	33100	7	68.8	39	65	100	"	"
Emer. Feed Pump	1	1	66400	7	97.4	76	99	120	"	"
LUBRICATING OIL PUMPS	2	1	66400	7	97.4	58	99	150	"	"
OIL FUEL TRANSFER PUMP	1	1	300000	37	90	275	376	180	"	"
F.O. Service Pump	2	1	66400	7	97.4	58	99	150	"	"
WINCHES, FORWARD										
Ltg. M/G Set Motor	2	1	300000	37	90	220	376	150	"	"
WINCHES, AFT										
Foreed Draft Fans	2	1	400000	37	104	360	456	200	"	"
STEERING GEAR—										
(a) MAIN MOTORS	2	1	300000	37	90	184	279	200	"	"
Galley Exhaust Fan	1	1	4100	7	24.2	2.4	11.5	60	Rubber	"
VENTILATING FANS Pump Rm	2	1	6530	7	30.5	5.6	22	200	VC	"
Aft. Ctrs. Exhaust Fan 2	1	1	4100	7	24.2	4.6	11.5	100	Rubber	"
Aft. Ctrs. Supply Fan 2	1	1	6530	7	30.5	12.6	22	150	VC	"
Boiler Rm. Sup. Fans	2	1	66400	7	97.4	58	99	80	"	"
Engine Rm. Sup. Fans	2	1	66400	7	97.4	41	99	80	"	"
Engine Rm. Exh. Fans	2	1	66400	7	97.4	41	99	80	"	"
Bath Rms. Exh. Fan	12	1	4100	7	24.2	0.3	11.5	120	Rubber	"

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.			
Midship Ctrs. Supply Fan	1	1	6530	7	30.5	8	22	60	VC	L & A
Tube Oil Purifiers	2	1	66400	7	97.4	61	99	60	"	"
Evap. Feed	1	1	33100	7	68.8	39	65	130	"	"
Evap. #1 Brine	1	1	6530	7	30.5	8.6	22	50	"	"
Evap. #2 Brine	1	1	6530	7	30.5	8.6	22	50	"	"
Evap. #1 Cond. Pump	1	1	6530	7	30.5	8.6	22	50	"	"
Evap. #2 Cond.	1	1	6530	7	30.5	8.6	22	50	"	"
Evap. Starch Pump	1	1	6530	7	30.5	1.2	22	60	"	"
Refrig. Comps.	2	1	33100	7	68.8	39	65	200	"	"
Refrig. Cond. Circ.	1	1	6530	7	30.5	4.6	22	150	"	"
Pantry Refrig.	3	1	6530	7	30.5	2.4	22	60	"	"
Shaper	1	1	10400	7	38.5	20	30	40	"	"
Lathe	1	1	6530	7	30.5	8.6	22	50	"	"
Drill Press	1	1	6530	7	30.5	4.6	22	50	"	"
Grinder	1	1	6530	7	30.5	12.6	22	30	"	"
Galley Ranges	2	1	83700	19	66.4	90	117	60	"	"
Galley Bake Oven	1	1	26300	7	61.2	40	55.5	60	"	"
STEERING GEAR—										
(a) MOTOR GENERATOR										
(b) MAIN MOTOR										
WORKSHOP MOTOR										
VENTILATING FANS										



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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.

T. M. Jackson Electrical Engineers.

Date Mar 9-1950

COMPASSES.

Distance between electric generators or motors and standard compass..... -

Distance between electric generators or motors and steering compass..... -

The nearest cables to the compasses are as follows:—

A cable carrying 2 Ampères 6 feet from standard compass 8 feet from steering compass.

A cable carrying 3 Ampères 8 feet from standard compass 12 feet from steering compass.

A cable carrying 5 Ampères 10 feet from standard compass 10 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 yes.

The maximum deviation due to electric currents was found to be nil degrees on all course in the case of the standard compass, and nil degrees on - course in the case of the steering compass.

Sun Shipbuilding and Dry Dock Co Builder's Signature.

Date Mar 9-1950

Is this installation a duplicate of a previous case YES NOX If so, state name of vessel Sun Hulls 570-576 incl.

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 300 K.W. Generator Sets.

Noted Sub 19/4/50.

Total Capacity of Generators 675 Kilowatts.

The amount of Fee As Agreed \$200.00 When applied for.
per F.A.G. 2nd Feb. 1950
Traveling Expenses (if any) £ 12.00 When received.

M. P. Pemberton
Surveyor to Lloyd's Register of Shipping.

Committee's Minute NEW YORK MAR 15 1950

Assigned blue light



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