

# REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office 21 AUG 1950

Date of writing Report 19th June 19 50 When handed in at Local Office 19th June 19 50 Port of Baltimore, Maryland

No. in Survey held at Baltimore, Maryland Date, First Survey 24th Apr. Last Survey 5th May 19 50  
Reg. Book. (No. of Visits 5)

13046 on the S.S. "IMPERIAL ALBERTA" Tons { Gross 17883 Net 10918

Built at Chester, Pa. By whom built Sun S.B. & Drydock Co. Yard No. 568 When built 1949

Owners Imperial Oil Shipping Co., Ltd. Port belonging to Halifax, N.S.

Installation fitted by Sun S.B. & Drydock Co. When fitted 1949

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

Plans, have they been submitted and approved. 3 Phase 3 Wire For Power 2 Wire Single Phase For Ltg. Branch Circuits  
Generator 115 volts System of Distribution Voltage of Lighting 115

Heating/Cooking 220" Power 440 D.C. or A.C., Lighting AC Power AC If A.C. state frequency 60

Water Heater 220" Prime Movers, has the governing been found as per Rule when full load is thrown on and off Yes Are turbine emergency governors fitted

with a trip switch Yes Generators, are they compound wound, and level compounded under working conditions -

if not compound wound state distance between generators - and from switchboard - Are the generators arranged to run

in parallel Yes, are short field regulators provided Yes Is the compound winding connected to the negative or 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 No and the results found as per Rule American Bureau of Shipping and A.I.E.E. Stds.

Position of Generators Machinery Flat Starboard Side.

is the ventilation in way of generators satisfactory Yes are they clear of inflammable material and protected from mechanical injury and

damage from water, steam and oil Yes Switchboards, where are main switchboards placed

Machinery Flat Starboard Side.

are they in accessible positions, free from inflammable gases and acid fumes and protected from mechanical injury and damage from water,

steam and oil Yes what insulation is used for the panels. Dead front circuit Breaker type with, if of synthetic insulating

material is it an Approved Type Yes (as per E.I.E.E. Stds.) Ebony asbestos supports.

per Rule Yes Is the construction as per Rule, including locking of screws and nuts. Yes Description of Main Switchgear

for each generator and arrangement of equaliser switches.

3 Pole manually operated circuit breakers with 3 overcurrent trips and shunt trip and under voltage

current protection generator.

and the switch and fuse gear (or circuit breakers) for each outgoing circuit.

3 Pole manually operated circuit breakers with thermal and magnetic overload trip (each feeder circuit).

Are compartments containing switchboards composed of fire-resisting material or lined as per Rule Yes Instruments on main switchboard 2

ammeters 3 voltmeters 1 synchronising devices. For compound machines in parallel are the ammeters and reversed current

protection devices connected on the pole opposite to the equaliser connection - Earth Testing, state means provided

Ground lamps

Switches, Circuit Breakers and Fuses, are they as per Rule As per A.I.E.E. Stds. are the fuses an Approved Type As per A.I.E.E. Stds.

make of fuses. General Electric, are all fuses labelled. Yes If circuit breakers are provided for the generators, at what

overload do they operate 825 Amps. valve power 125A - 2 seconds of reverse power.

and at what current do the reversed current protective devices operate

Joint Boxes, Section Boards and Distribution Boards, is the construction as per Rule A.I.E.E. Standards

Cables, are they insulated and protected as per Rule, 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 AC, are the ends of all cables having a sectional

area of 0.01 square inch and above provided with soldering sockets No Type Are all paper insulated and varnished cambric insulated

cables sealed at the ends 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 any cables laid under machines or floorplates. No, if so, are they

adequately protected - Are cables in machinery spaces, galleys, laundries, etc., lead covered Yes or run in conduit No

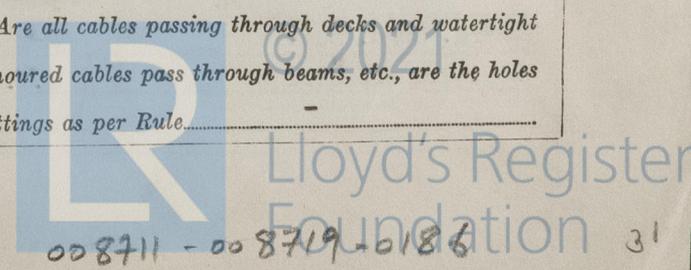
or of the "HR" type - State how the cables are supported or protected. In brass pipe on gangways otherwise

effectively clipped to flat bar hangers.

Are all lead sheaths, armouring and conduits effectually bonded and earthed 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

effectively bushed - Refrigerated chambers, are the cables and fittings as per Rule -



Alternative Lighting, are the groups of lights in the engine and boiler rooms arranged as per Rule. Yes Emergency Supply, state position EMER, SWBD, is normally energised from main SWBD emergency generator is driven by diesel engine on fidley deck.

Navigation Lamps, are they separately wired. Yes controlled by separate double pole switches 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 Is an alternative supply provided. Yes

Secondary Batteries, are they constructed and fitted as per Rule. Yes, are they adequately ventilated. Yes state battery capacity in ampere hours. 200 A.H.

Fittings, are all fittings on weather decks, in stokeholds and engine rooms and wherever exposed to drip or condensed moisture, weatherproof. Yes Are any fittings installed where readily combustible materials or inflammable or explosive dust or gases are likely to be present. No if so, how are they protected. Pump room lighted by explosion proof fixtures and wired and serviced on engine room side and where are the controlling switches fitted. Pump room control station in CO<sub>2</sub> room upper deck. Are all fittings suitably ventilated. Yes

Searchlight Lamps, No. of 1, whether fixed or portable. fixed, are they of the carbon arc or of the filament type. Filament type

Heating and Cooking, is the general construction as per Rule. A.I.E.E. Stds 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 and placed in well-ventilated compartments in which inflammable gases cannot accumulate and protected from damage from water, steam and oil. A.I.E.E. Standards Are motors coupled to oil fuel transfer and pressure pumps capable of being stopped from a position accessible in the event of fire in the pump compartment. Yes Have motors of 100 BHP and over been inspected by the Surveyors during manufacture and testing. Shipping Have certificates of test for motors under 100 BHP intended for essential sea services been supplied and the results found as per Rule. No

Control Gear and Resistances, are they constructed and fitted as per Rule. A.I.E.E. Standards Lightning Conductors, where required are they fitted as per Rule. 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 an Approved Cartridge Type. Yes, make of fuse. General Electric Are the fittings for pump rooms, tween deck spaces, etc., in accordance with the special requirements for such ships. Yes Are the cables lead covered as per Rule E.S.D., if fitted state maker. location of transmitter. Forward and receiver. Chart room

Spare Gear, if the vessel is for open sea service have spares been provided as per Rule and suitably stored in dry situations. Yes Megger tests carried out and Insulation Tests, has the insulation resistance of all circuits and apparatus been tested and found satisfactory. found to be within rule requirement.

PARTICULARS OF GENERATING PLANT.

DESCRIPTION OF GENERATOR.	No. of	MAKER.	RATED AT				PRIME MOVER.	
			Kilowatts per Generator.	Volts.	Ampères.	Revs. per Min.	TYPE.	MAKER.
MAIN	2	General Electric	400	450 AC	642	1200	Steam Turbine	General Electric
EMERGENCY GENERATOR	1		60	450	96	1200	Diesel Engine	
EMERGENCY GENERATOR	2	General Electric	5	120	41.7	1750	motor	General Electric

GENERATOR CABLES.

DESCRIPTION.	KILOWATTS.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (lead plus return feet).	INSULATION.	PROTECTIVE COVERING.
		No. in Parallel per Pole.	Sectional Area or No. and Dia. of Strands. Sq. ins. or sq. mm.	In the Circuit.	Rule.			
MAIN GENERATOR	400	2	.943	642	882	30	V.C.	L & A
EMERGENCY GENERATOR	60	1	.104	96	158	10	V.C.	L & A
EMERGENCY GENERATOR Primary	7.5	1	.00521	11	22	10	V.C.	L & A
EMERGENCY GENERATOR Secondary	5	1	.0206	41.7	55.5	10	V.C.	L & A

MAIN DISTRIBUTION CABLES (to Section Boards, Distribution Fuse Boards, etc.).

DESCRIPTION.	A.I.E.E.					
	No. in Parallel per Pole.	Sectional Area or No. and Dia. of Strands. Sq. ins. or sq. mm.	In the Circuit.	Rule.	APPROX. LENGTH (lead plus return feet).	INSULATION.
Shop line receptacle	1	.1659	200	217	75	V.C.
Suez Canal	1	.0658	30	117	200	V.C.
Refrig. Power Panel P 29	1	.0206	35	55.5	60	V.C.
Qtrs. Vent. Panel Fwd & Aft P 23	1	.0261	50	65	75	"
Mach. Space Vent. Panel P 27	1	.0829	65	134	50	"
Galley Transformers 450/220 V P 26	1	.0521	77	99	60	"
Machine Shop Panel P 25	1	.008	25	30	50	"
Eng. Rm. Power " Aft P 24	1	.0521	28	99	90	"
" " " " Fwd P 23	1	.0521	28	99	90	"
Emerg. Swgd. Bustle M-E	1	.1318	150	185	100	"
Ltg. Transformers T.1.	1	.0521	77	99	50	"

LIGHTING, HEATING, WIRELESS, NAVIGATION LIGHTS, ETC., CABLES.

DESCRIPTION.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (lead plus return feet).	INSULATION.	PROTECTIVE COVERING.
	No. in Parallel per Pole.	Sectional Area or No. and Dia. of Strands. Sq. ins. or sq. mm.	In the Circuit.	Rule.			
Engine Room Lighting	1	.0521	48	99	50	V.C.	L & A
Boiler " "	1	.0261	26	65	75	"	"
Midship Qtrs. "	1	.1318	63	185	350	"	"
Upper Dk. Aft. "	1	.0521	42	99	125	"	"
Poop Dk. "	1	.0261	44	65	150	"	"
Wireless	1	.0261	30	65	400	"	"
Searchlight	1	.008	9	30	30	"	"
Masthead Light	1	.003	0.5	11.5	230	"	"
Sidelights	1	.003	0.5	11.5	50	"	"
Heaters (Generator)	1	.005	5.4	22	30	"	"
2 Galley Ranges	1	.0261	50	65	80	"	"
Baking Oven	1	.0051	10	22	75	"	"
Running Light Panel	1	.0082	2	30	150	"	"
Gyro Compass	1	.0082	15	30	110	"	"

MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED.	No.	B.H.P.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (lead plus return feet).	INSULATION.	PROTECTIVE COVERING.
			No. in Parallel per Pole.	Sectional Area or No. and Dia. of Strands. Sq. ins. or sq. mm.	In the Circuit.	Rule.			
Inbd & outbd. (each)	2	15 HP	1	.008	20	30	50	V.C.	L & A
1st Stage Heater & Drain Cooler	2	10 HP	1	.005	14	22	80	"	"
Engine Room Bilge Pump	1	10 HP	1	.005	14	22	80	"	"
Cargo Stripper Pump	1	100HP	1	.1659	125	217	60	"	"
Main Condensate Pumps (each)	2	30 HP	1	.0206	38	55.5	25	"	"
Sanitary Pump	1	15 HP	1	.008	20	30	65	"	"
Main Circ. Sea Water Pump	1	125 HP	1	.1659	150	217	60	"	"
Fwd & Aft Drinking Fresh Water (each)	1	1 HP	1	.005	1.8	22	75	"	"
Engine Turning Gear	1	7 1/2 HP	1	.005	11	22	50	"	"
Air Compressors	2	30 HP	1	.0206	38	55.5	70	"	"
Fwd & Aft Wash Water Pumps (each)	2	1 HP	1	.005	1.8	22	80	"	"
Lub Oil Cooler Pump	1	10 HP	1	.005	14	22	70	"	"
Lubricating Pumps (each)	2	25 HP	1	.0206	33	55.5	80	"	"
Fuel Oil Service Pumps	2	10 HP	1	.005	14	22	90	"	"
Emer. Forced Draft Fan	1	2 HP	1	.005	3.2	22	75	"	"
Forced Draft Fans (each)	2	90 HP	1	.1318	113	185	75	"	"
Aux. Cond. Pump	1	30 HP	1	.0206	38	55.5	60	"	"
Aux. Circulating Pump	1	40 HP	1	.0261	50	65	60	"	"
Steering Main Motors (each)	2	50 HP	1	.0521	63	99	150	"	"
Emer. Feed Pump	1	5 HP	1	.0051	7.5	22	75	"	"
Emer. F.D. Service Pump	1	1 1/2 HP	1	.005	2.5	22	75	"	"
Fwd. Refrig Compressor	1	7 1/2 HP	1	.005	11	22	600	"	"
Aft. " "	1	7 1/2 HP	1	.005	11	22	90	"	"
Refrig. Cond. Circ. Pump	1	1 HP	1	.005	1.8	22	90	"	"
L. O. Purifier Pump	1	2HP	1	.005	3.2	22	65	"	"
Comb. Cont. Air Comp.	1	7 1/2 HP	1	.005	11	22	75	"	"
Boiler Compound Pump	1	1 1/2 HP	1	.005	2.3	22	80	"	"
Lathe	1	2HP	1	.005	4.6	22	90	"	"
Drill Press	1	1 HP	1	.005	1.8	22	90	"	"
Grinder	1	3HP	1	.005	4.6	22	90	"	"
P&S Boiler Rm Vent Supply (each)	2	15HP	1	.008	20	30	90	"	"
P&S " " " Exh. (each)	2	4HP	1	.005	6.4	22	90	"	"
P&S Eng. " " " " "	2	12HP	1	.008	17.2	30	90	"	"
P&S " " " " Supply "	2	12HP	1	.008	17.2	30	90	"	"
Vent Fans Misc. (each)	10	1/3 to 3HP	1	.005	4.5	22	22	"	"
Fire Pump	1	50	1	.0521	64	99	90	"	"

The Electrical Equipment is installed in accordance with the approved plans and the requirements of the Rules. /  
 /Per A.B. of Shipping & U.S.C.G. & A.I.E.E. Standards  
 All Insulated Conductors are guaranteed to have been tested at the maker's works as specified in the Rules. /  
 /A.B. of Shipping and A.I.E.E. Standards  
 The foregoing is a correct description.

..... Electrical Contractors. Date.....

**COMPASSES.**

Have the compasses been adjusted under working conditions.....

..... Builder's Signature. Date.....

Have the foregoing descriptions and schedules been verified and found correct..... Yes

Is this installation a duplicate of a previous case..... Yes If so, state name of vessel..... S.S. "KUWAIT"

Plans. Are approved plans forwarded herewith..... Yes If not, state date of approval.....

Certificates. Are certificates of test for motors engaged on essential sea services and generators forwarded herewith..... -

General Remarks. (State quality of workmanship, whether insulation tests, etc., have been made, opinions as to class, etc.).....

The electrical equipment of this vessel has been installed under Special Survey of the American Bureau of Shipping Rules and the United States Coast Guard rules and in accordance with approved plans.

The workmanship and materials are good .

The installation has been examined under full working conditions, tested as per rule and found satisfactory and in my opinion the electrical installation is such as could be accepted by the Committee for Classification.

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

*Noted See 11/9/50*

Total Capacity of Generators..... 860 ✓ ..... Kilowatts.

The amount of Fee ... .. £ *See Rept 9* : When applied for, .....

..... 19 .....

Travelling Expenses (if any) £ : : When received, .....

..... 19 .....

*W. M. J. Lee*  
 Surveyor to Lloyd's Register of Shipping.

Committee's Minute..... **NEW YORK AUG 2 - 1950**.....

Assigned..... *See Rpt 9*.....

2m.9.46.—Transfer. (MADE AND PRINTED IN ENGLAND.)  
 (The Surveyors are requested not to write on or below the space for Committee's Minute.)



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