

# REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office JUN-14 1937

Date of writing Report 11/5/37 When handed in at Local Office 11/5/37 Port of Hong Kong

No. in Survey held at Hong Kong Date, First Survey Jan 15<sup>th</sup> Last Survey May 4<sup>th</sup> 1937  
(Number of Visits 15)

Reg. Book. on the Motorship "LEGAZPI" Tons { Gross 1175.68  
Net 675.59

Built at Hong Kong By whom built H. K. & W. Dock Co Ltd Yard No. 767 When built 1937

Owners La Naviera Filipina Inc Port belonging to Cebu P.I.

Electric Light Installation fitted by H. K. & W. Dock Co Ltd Contract No. 767 When fitted 1937

Is the Vessel fitted for carrying Petroleum in bulk No.

System of Distribution Double-Wire Fuse Box Distribution  
Pressure of supply for Lighting 110 volts, Heating 110 volts, Power 110 volts.

Direct or Alternating Current, Lighting Direct Power Direct

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 Shunt with Interpoles  
are they over compounded 5 per cent. —, if not compound wound state distance between each generator 3ft

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 Bottom Platform Pt. Engine room.  
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 —

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 Bottom Platform Engine P

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, if situated near unprotected

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 Sundry Panels, 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 — 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, 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 Generator Protected by DP Circuit Breaker having overload Reverse current Trips + Interlocked equalizing switches, each outgoing circuit protected by Double-throw switch & fuse.

Instruments on main switchboard 4 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 Earth indicating lamps

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



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

**Fall of Pressure,** state maximum between bus bars and any point of the installation under maximum load 1.5 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 clipped on surface cable plating and protected where necessary in pipes

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 Yes

**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 Switchboard .10" Generators .15"  
Motors & Starters .075" .03 & .003"  
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 Yes

**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 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 Yes, are any fittings placed in spaces where inflammable or explosive dust or gases are liable to be present, if so, how are they protected Yes, how are the cables led Yes, where are the controlling switches situated Yes

**Searchlight Lamps,** No. of One, 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 Yes

**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.	Amperes.	Revs. per Min.		Fuel Used.	Flash Point of Fuel.
MAIN	3	1-47 KW 2-25 KW	110	410 217	375 550	Diesel Engine		
AUXILIARY	1	17 KW	110	154	550	Belt Drive from Main Shaft		
EMERGENCY								
ROTARY TRANSFORMER								

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 Effective Area per Pole Sq. Ins.	No.	Diameter.	In Circuit.	Rule.			
MAIN GENERATOR	2	.5	37	.093	410	428	90	Rubber	Armoured
EMERGENCY GENERATOR	1	.3	37	.103	217	240	70	"	"
APPROPRIATE GENERATOR	1	.3	37	.103	217	240	50	"	"
EMERGENCY GENERATOR	1	.2	37	.083	154	184	150	"	"
ROTARY TRANSFORMER MOTOR GENERATOR									
ENGINE ROOM									
BOILER ROOM									
AUXILIARY SWITCHBOARDS									
ACCOMMODATION									
UPPER & SHADE DECK LIGHTS	1	.04	19	.052	506	64	120	"	LEAD COVER CABLE
BRIDGE & FROM DECK LIGHTS	1	.04	19	.052	508	64	172	"	"
ENGINE ROOM & FO'CLE	1	.0045	7	.029	120	18	24	"	"
WIRELESS	1	.0045	7	.029	13	18	185	"	"
SEARCHLIGHT	1	.003	3	.036	2	12	30	"	"
MASTHEAD LIGHT	1	.002	3	.029	4	7.8	130	"	"
SIDE LIGHTS	1	.002	3	.029	4	7.8	50	"	"
COMPASS LIGHTS	1	.002	3	.029	2	7.8	40	"	"
POOP LIGHTS									
CARGO LIGHTS									
ARC LAMPS									
HEATERS/HOT WATER BOILER	1	.0045	7	.029	13	18	150	"	"

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 Effective Area per Pole Sq. Ins.	No.	Diameter.	In Circuit.	Rule.			
BILGE BALLAST PUMP	1	1	.15	37	.072	152	152	180	RUBBER	WIRE ARMOURD
MAIN BILGE LINE PUMPS	1	1	.15	37	.072	152	152	180	"	"
GENERAL SERVICE PUMP										
EMERGENCY BILGE PUMP										
SANITARY PUMP	2	1	.003	3	.036	6.4	12	22	"	"
CIRC. SEA WATER PUMPS	1	1	.12	37	.064	120	130	80	"	"
CIRC. FRESH WATER PUMPS	2	1	.003	3	.036	9.6	12	30	"	"
AIR COMPRESSOR	2	1	.5	61	.093	263	288	75	"	"
FRESH WATER PUMP	2	1	.003	3	.036	9.6	40	60	"	"
ENGINE TURNING GEAR	1	1	.06	19	.064	64	80	110	"	"
ENGINE REVERSING GEAR										
LUBRICATING OIL PUMPS	1	1	.25	37	.093	185	214	104	"	"
OIL FUEL TRANSFER PUMP	1	1	.003	3	.036	4.5	12	93	"	"
WINDLASS	1	1	.2	37	.083	184	184	214	"	"
WINCHES, FORWARD	2	1	.12	37	.064	123	130	112	"	"
LUB OIL TRANSFER PUMP	1	1	.003	3	.036	9.6	12	160	"	"
WINCHES, AFT	2	1	.12	37	.064	123	130	108	"	"
STEERING GEAR										
(a) MOTOR GENERATOR										
(b) MAIN MOTOR	1	1	.06	19	.064	65	83	278	"	"
WORKSHOP MOTOR	1	1	.12	37	.064	120	130	110	"	"
VENTILATING FANS	2	1	.003	3	.036	4.5	12	96	"	"
REFRIG MOTOR	1	1	.06	19	.064	39	83	142	"	"
LUB OIL PURIFIER	2	1	.0045	7	.029	12.6	18	110	"	"
AUX. COOLING WATER PUMP	1	1	.0045	7	.029	17.1	18	62	"	"

All Conductors are of annealed copper conforming to British Standard Specification No. 7. *Yes*  
 The Insulated Conductors are guaranteed to withstand the immersion and resistance tests specified in the Rules. *Yes*  
 The foregoing is a correct description.

*Loock* Electrical Engineers. Date \_\_\_\_\_

**COMPASSES.**

Distance between electric generators or motors and standard compass *40 ft*  
 Distance between electric generators or motors and steering compass *34 ft*  
 The nearest cables to the compasses are as follows:—  
 A cable carrying *.4* Ampères *Compass Light* feet from standard compass *Compass Light* feet from steering compass.  
 A cable carrying *.4* Ampères *Wheelhouse Light* feet from standard compass *6* 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.

*Loock* 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. *This electric installation has been efficiently fitted on board in accordance with the rules & approved plans, the material & workmanship being sound & good. On completion the installation was megger tested & tried under full load & working conditions & found satisfactory*

*Noted*  
*F.Y.*  
*17/6/37.*

Total Capacity of Generators *114* Kilowatts.

The amount of Fee *£67.14-3p* *10.95.00* When applied for, *10-5-1937*  
 Travelling Expenses (if any) *£ 40.00* When received, *26.6.37*

*J.S. Morrison* for *G.H. Macdonald & Self*  
 Surveyor to Lloyd's Register of Shipping.

FRI 18 JUN 1937

Committee's Minute  
 Assigned *See F.O. Nichey Rpt*

2m.31.—Transfer  
 The Surveyors etc requested not to write on or below the space for Committee's Minute.