

REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office 28 DEC 1929

of writing Report 28th Nov 1929 When handed in at Local Office 28th Nov. 1929 Port of NAGASAKI.

in Survey held at NAGASAKI. Date, First Survey 20th Aug. 29 Last Survey 31st Oct. 1929.

on the Steel Twin Screw Motor Vessel "Buenos Aires Maru". Tons { Gross 9,625.65 Net 5,854.27

at Nagasaki. By whom built Mitsubishi Zosen Kaisha Yard No. 456. When built 1929.

ers Osaka Shosen Kabushiki Kaisha. Port belonging to Osaka.

Electric Light Installation fitted by Nagasaki Works, Mitsubishi Zosen Kaisha, Ltd., Contract No. When fitted 1929.

System of Distribution Two wire system.

Pressure of supply for Lighting 110 volts, Heating 225 volts, Power 225 volts.

System or Alternating Current, Lighting Direct current. Power Direct current.

Is an 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 Yes

Are they over compounded 5 per cent. Yes, if not compound wound state distance between each generator /

Are there more than one generator is fitted are they arranged to run in parallel Yes, is an adjustable regulating resistance fitted in

with each shunt field Yes

Are terminals accessible, clearly marked, and furnished with sockets Yes, are they so spaced or shielded that they cannot be accidentally earthed,

circuited, or touched Yes Are the lubricating arrangements of the generators as per Rule Yes

Location of Generators In machinery space.

Is ventilation in way of the generators satisfactory Yes, are they clear of all inflammable material Yes

Are they 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 the air axes of rotation fore and aft Yes

Are the bedplates and frames of the generating plant efficiently earthed Yes are the prime movers and

respective generators in metallic contact Yes

Switch Boards, where placed In machinery space at fore end on 3rd Deck level.

If the generators and main switchboard are not placed in the same compartment, is each generator provided with on each insulated pole as near as possible to the terminals of the generator, additional to that provided on the main switchboard /

Are the 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

work 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

entirely high insulation resistance Yes, if semi-insulating material is used, are all conducting parts insulated from the slab

by mica or micamite or other non-hygroscopic insulating material, and the slab similarly insulated from its framework Yes

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

Yes, individual fuses to voltmeter, pilot or earth lamp Yes, connections of switches Yes

Switchgear, description of switchgear for each generator and each outgoing circuit, and arrangement of equalizer switches A double pole circuit breaker with overload trip, time lag device and reverse current trip and a single pole equalizer interlocked with the circuit breaker as per Rule, and a double pole knife switch for generator: A double pole circuit breaker with overload trip and time lag device or a single pole knife switch and an enclosed fuse on each pole for each out-going circuit.

Are there instruments on main switchboard 8 ammeters 4 voltmeters / synchronising device for paralleling purposes.

Are there testing, state what means are provided at the main switchboard for indicating the state of the insulation of the system By lamp.

Are there fuses, Circuit Breakers and Fusible Cut-outs, do these comply with the requirements of the Rules Yes

Are there tests Section and Distribution Boards, is the construction, protection, insulation, material, and position of these as per rule Yes



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Cables: Single, twin, concentric, or multicore Multicore are the cables insulated and protected as per Tables IV or V of the Rules Yes
Fall of Pressure, state maximum between bus bars and any point of the installation under maximum load 11 volts for Power. 5.2 volt for Lighting.
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 /
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 Clamped on metal bracket or perforated galvanized plate by clip & protected by steel armouring or steel pipe where necessary,
 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 / . 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 In junction boxes, as per rule.
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 There is no earthing connection except for wireless telegraph, sectional area of which is 0.00715 square inch.
 , 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 /
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 Lamps in steerage are protected by strong metal guard. are any fittings placed in spaces where inflammable or explosive dust or gases are liable to be present, if so, how are they protected / , how are the cables led where are the controlling switches situated /
Searchlight Lamps, No. of / , whether fixed or portable / , are their fittings as per Rule /
Arc 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 , 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 Totally enclosed . if not of this type, state distance of the combustible material horizontally or vertically above the motors. / and /
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 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 type approved by the Home Office /

PARTICULARS OF GENERATING PLANT.

DESCRIPTION OF GENERATOR.	No of	RATED AT				DRIVEN BY	WHERE DRIVEN BY AN INTERNAL COMBUSTION ENGINE.	
		Kilowatts.	Volts.	Ampères.	Revs. per Min.		Fuel Used.	Flash Point of Fuel.
MAIN	3	230	225	1022	310	Diesel Engine.	Tarakan oil	Above 150°
AUXILIARY	2	35	110	318	1500	DC 220 V 55 HP. Motor (210 A).		
EMERGENCY								
ROTARY TRANSFORMER								

LIGHTING AND HEATING CONDUCTORS.

Ref. No.	DESCRIPTION.	No. of Conductors.	Effective Area of each Conductor. Sq. Ins.	COMPOSITION OF STRAND.		Total Maximum Current. Amperes.	Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.
				No.	Diameter.				
	MAIN GENERATOR...								
	EQUALISER CONNECTIONS								
	AUXILIARY GENERATOR								
	EMERGENCY GENERATOR								
	ROTARY TRANSFORMER...								
	AUXILIARY SWITCHBOARDS								
	ENGINE ROOM								
	BOILER ROOM								
	ACCOMMODATION								
	WIRELESS								
	SEARCHLIGHT								
	MASTHEAD LIGHT...								
	SIDE LIGHTS								
	COMPASS LIGHTS								
	POOP LIGHTS								
	CARGO LIGHTS								
	ARC LAMPS								
	HEATERS								

MOTOR CONDUCTORS.

Ref. No.	DESCRIPTION.	No. of Motors.	Effective Area of each Conductor. Sq. Ins.	COMPOSITION OF STRAND.		Total Maximum Current. Amperes.	Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.
				No.	Diameter.				
	BALLAST PUMP								
	MAIN BILGE LINE PUMPS								
	GENERAL SERVICE PUMP								
	EMERGENCY BILGE PUMP								
	SANITARY PUMP								
	CIRC. SEA WATER PUMPS								
	CIRC. FRESH WATER PUMPS								
	AIR COMPRESSOR								
	FRESH WATER PUMP								
	ENGINE TURNING GEAR								
	ENGINE REVERSING GEAR								
	LUBRICATING OIL PUMPS								
	OIL FUEL TRANSFER PUMP								
	WINDLASS								
	WINCHES, FORWARD								
	WINCHES, AFT								
	STEERING GEAR—								
	(a) MOTOR GENERATOR...								
	(b) MAIN MOTOR								
	WORKSHOP MOTOR								
	VENTILATING FANS								

Steel Twin Screw Motor Vessel "BUENOS AIRES MARU".

Lighting and Heating Conductors.

Ref. No.	Description.	No. of Cond.	Effective Area of each Cond. Sq. Ins.	Composition of Strand No. Dia.	Total Maximum Current Amperes	Approximate Length (L & R) Ft.	Insulated with.	How Protected.
1	No.3 Main Generator.	1	.00713	7 .036	1022	65	Rubber	L.C.A.
4		4	.0795	127 .104	✓	130	"	"
2	Equalizer for No.3 Main Gen.	1	1.07985	"	✓	65	"	"
3	Gen.side No.2 35KW Mot-Gen.	1	.007	7 .036	✓	48	"	"
2		2	.60493	91 .092	318	96	"	"
4	Equalizer for Gen.of M-G.	1	"	"	✓	48	"	"
5	Motor side No.2 35KW M-G.	2	.40551	61 "	210	90	"	"
71	No.1 Submain board.	2	.06	19 .064	✓	78.9	136	"
72	No.1 Distribution Board	2	.00713	7 .036	✓	20	4	L.C.
73	No.2 " " "	2	"	"	✓	13.9	126	"
74	No.2 " " "	2	"	"	✓	12	144	"
75	No.4 " " "	2	"	"	✓	16.2	4	"
76	No.5 " " "	2	"	"	✓	16.8	4	"
77	No.2 Submain Board.	2	.06112	19 .064	✓	65.4	138	L.C.A.
78	No.6 Distribution Board.	2	.00701	7 .036	✓	17.6	4	L.C.
79	No.7 " " "	2	"	"	✓	10.4	270	L.C.A.
80	No.8 " " "	2	.00322	1 .064	✓	8.2	"	"
81	No.9 " " "	2	.01267	7 .048	✓	29.2	162	L.C.
82	No.3 Submain Board.	2	"	"	✓	25.2	168	L.C.A.
83	No.10 Distribution Board.	2	.00322	1 .064	✓	8.9	186	"
84	No.11 " " "	2	.00713	7 .036	✓	6.	446	"
85	No.12 " " "	2	"	"	✓	10.3	300	"
86	No.4 Submain Board.	2	.06112	19 .064	✓	73.7	138	"
87	No.13 Distribution Board.	2	.00713	7 .036	✓	14	218	"
88	No.14 " " "	4	.00322	1 .064	✓	12.6	218	"
89	No.15 " " "	2	"	"	✓	8.2	110	L.C.
90	No.16 " " "	2	.00713	7 .036	✓	21.1	4	"
91	No.17 " " "	4	.00322	1 .064	✓	17.8	272	L.C.A.
92	No.5 Submain Board.	2	.06112	19 "	✓	67.9	160	"
93	No.18 Distribution Board.	2	.00713	7 .036	✓	11.1	130	"
94	Flash light for whistle.	2	"	"	✓	5.2	117	L.C.
95	" " " "	2	"	"	✓	5	335	L.C.A.
96	No.19 Distribution Board.	2	.00322	1 .064	✓	10.6	4	L.C.
97	No.20 " " "	2	.00713	7 .036	✓	20.4	4	"
98	No.21 " " "	2	"	"	✓	15.7	4	L.C.A.
99	No.22 " " "	2	"	"	✓	10.1	405	"
100	No.6 Submain Board.	2	.02252	7 .064	✓	39	124	"
101	No.23 Distribution Board.	2	.00713	7 .036	✓	14	2	"
102	No.24 " " "	2	"	"	✓	20	2	"
103	Engine room Cargo lamp.	2	.00181	1 .048	✓	5	38	"
104	" " " "	2	.00475	168 .006	✓	5	40	H.B.F.C.
105	" " Bus-bar lamp.	2	.00181	1 .048	✓	1.2	106	L.C.A.
106	No.7 Submain Board.	2	.01267	7 "	✓	24.4	225	"
107	Cargo lamp for No.1 Hatch.	2	.00322	1 .064	✓	4.8	40	"
108	" " " No.2 "	2	"	"	✓	"	62	"
109	" " " fore mast.	2	"	"	✓	10	38	"
110	" " " "	2	.00475	168 .006	✓	5	65	H.B.F.C.
111	" " for No.3 Hatch.	2	.00713	7 .036	✓	4.8	264	L.C.A.
112	" " " "	2	.00475	168 .006	✓	2.4	72	H.B.F.C.
113	No.8 Submain Board.	2	.01267	7 .048	✓	19.6	400	L.C.A.
114	Cargo lamp for No.4 Hatch.	2	.00322	1 .064	✓	4.8	50	"
115	" " " "	2	.00475	168 .006	✓	2.4	82	H.B.F.C.
116	" " for No.5 Hatch.	2	.00322	1 .064	✓	4.8	48	L.C.A.
117	" " " main mast.	2	"	"	✓	10	46	"
118	" " " "	2	.00475	168 .006	✓	5	65	H.B.F.C.
119	Navigation lamp.	2	.00713	7 .036	✓	3.2	291	L.C.A.
120	Fore mast head lamp.	2	.00181	1 .048	✓	0.6	491	"
121	Main mast head lamp.	2	"	"	✓	"	795	"
122	Starboard side lamp.	2	"	"	✓	"	177	"
123	" " " "	2	.00172	61 .006	✓	"	3	H.B.F.C.
124	Port side lamp.	2	.00181	1 .048	✓	"	169	L.C.A.
125	" " " "	2	.00172	61 .006	✓	"	3	H.B.F.C.
126	Stern lamp.	2	.00181	1 .048	✓	"	824	L.C.A.
127	No.9 Submain Board.	2	.03438	19 "	✓	49.2	138	"
128	No.25 Distribution Board.	2	.00713	7 .036	✓	15.6	218	"
129	No.26 " " "	4	.00322	1 .064	✓	13.2	218	L.C.A.
130	No.27 " " "	2	"	"	✓	10	4	L.C.
131	No.28 " " "	2	"	"	✓	10.4	272	L.C.A.
132	No.10 Submain Board.	2	.01267	7 .048	✓	19.6	148	"
133	No.29 Distribution Board.	2	.00713	7 .036	✓	16.4	4	L.C.
134	No.30 " " "	2	.00322	1 .064	✓	3.2	606	L.C.A.
135	Main Dist.Board for Heater.	2	.18598	37 .08	✓	145.45	136	"
136	No.11 Submain Board.	2	.02252	7 .064	✓	36.36	4	"
137	Heater (Social hall starbd).	4	.00181	1 .048	✓	9.1	160	H.B.
138	No.12 Submain Board.	2	.002252	7 .064	✓	36.36	4	L.C.A.
139	Heater (Social hall port).	4	.00181	1 .048	✓	9.1	150	H.B.
140	No.13 Submain Board.	2	.03054	30 .036	✓	45.46	126	L.C.
141	Imitation fire.	6	.00181	1 .048	✓	18.2	84	H.B.
142	Heater (Smoke room starbd)	4	"	"	✓	9.1	156	"
143	No.14 Submain Board.	2	.01267	7 "	✓	27.27	126	L.C.
144	Heater (Smok. room port)	4	.00181	1 "	✓	9.1	130	H.B.

L.C.A. - Lead covered & armoured.
 L.C. - Lead covered.
 H.B.F.C. - Hemp braided flex cord.
 H.B. - Hemp braided.

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

J. Grotora Electrical Engineers. Date 6/12/29

COMPASSES.

Distance between electric generators or motors and standard compass 12 feet from gyro pilot motor.
 Distance between electric generators or motors and steering compass 3.5 feet from gyro pilot motor.
 The nearest cables to the compasses are as follows :-
 A cable carrying 0.2 Amperes 1 feet from standard compass 1 feet from steering compass.
 A cable carrying 2.5 Amperes 12 feet from standard compass 3.5 feet from steering compass.
 A cable carrying / Amperes / 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 No degrees on Any and every course in the case of the standard compass, and / degrees on / course in the case of the steering compass.

J. Grotora Builder's Signature. Date 6/12/29

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 materials and workmanship are good and the installation has been fitted in accordance with the Rules, tested under working conditions and found satisfactory.
 Plans sent under separate cover of:- Wiring diagram (2 sheets).

THE RECORD. Elec. Dept. 28/1/30

Total Capacity of Generators 760 Kilowatts.

The amount of Fee ... £ 510:30 : When applied for. 5. 11. 29
 Travelling Expenses (if any) £ : When received. 18. 11. 29

G. Anderson Surveyor to Lloyd's Register of Shipping.

Committee's Minute TUE 7 JAN 1930

Assigned *Elec Dept*

Cables: Single.
 Fall of Pres
 Cable Socket Yes
 Paper Insula
 insulating comp
 Cable Runs. steam pipes, up
 Support and galvaniz
 If cables are separate groove
 Refrigerate
 Joints in Ca
 Watertight Yes
 Bushes in I bushed
 Earthing C except
 Alternative Emergency
 Navigation are the swite has each nav
 Secondary Fittings, a are any fitti protect are any fitti
 where are
 Searchlig
 Arc Lam
 Motors, are the bre inflamm are they p if situated
 Total em
 Control
 Lightni
 Ships c section as
 If port

Im. 238 - Transfer. (The Stowages are requested not to violate on or below the space for Committee's Minutes.)

Steel Twin Screw Motor Vessel "BUENOS AIRES MARU".

Motor Conductors.

Ref. No.	Description.	No. of Motors	Effective Area of each Cond. Sq. Ins.	Composition of Strand		Total Maximum Current Amperes	Approximate Length (L & R) ft.	Insulated with	How Protected.
				No.	Dia.				
6	No.1 Aux. Switchboard.	9	.60493	91	.092	793	520	Rubber	L.C.A.
7	Windlass motor.	1	.40551	61	"	264	240	"	"
8	No.7 winch motor.	1	.11903	37	.064	120	350	"	"
9	No.2 Aux. Switchboard.	6	.40551	61	.092	519	460	"	"
10	No.9 winch motor	1	.11903	37	.064	120	80	"	"
11	Mooring winch motor	1	.18598	37	.08	172	190	"	"
12	No.1 Steering motor	2	.11903	37	.064	138	650	"	"
13	Junct. box for laundry machy &c.	1	.03438	19	.048	45	550	"	"
14	Washing machine	1	.00713	7	.036	13.5	38	"	"
15	Hadro extractor.	1	"	7	"	20	50	"	"
16	Electric iron &c.	1	"	7	"	11.5	57	"	"
17	Junct. box for Ref. machine.	1	.60493	91	.092	320	160	"	"
18	No.2 Ref. comp. motor	2	.18598	37	.08	173	70	"	"
19	No.2 Brine pump motor	2	.01267	7	.048	23	90	"	"
20	3 HP Ordnance fan motor	1	.00713	7	.036	13.5	150	"	"
21	.35 HP " " "	1	"	7	"	1.8	140	"	"
22	Junct. box for Vent fan motor	1	.02252	7	.064	36.8	150	"	"
23	No.3 General vent. fan motor	3	.00713	7	.036	9.2	280	"	"
24	Switchboard for W. tel.	1	"	7	"	16	220	"	"
25	Secondary battery.	1	"	7	"	16	16	"	"
26	Motor side, 2 KVA. M-alt.	1	"	7	"	15	150	"	L.C.
27	Gene. side " "	1	.01267	7	.048	10	150	"	L.C.A.
28	Motor side, 1/4 KVA. M-alt.	1	.00713	7	.036	16	160	"	"
29	Gene. side, " "	1	"	7	"	5	160	"	"
30	Junct. box for gyro-comp.	1	"	7	"	6.4	230	"	"
31	Fresh W. Cir. Pump M. Gyro-Comp.	1	.00322	1	.064	1.4	40	"	L.C.
32	Motor alternator, Gyro Comp.	1	"	1	"	5	40	"	L.C.A.
33	Fresh hot W. Cir P.M. carolif.	1	.00713	7	.036	3.45	140	"	"
34	Junct. box, Cooking Apparatus.	1	.11903	37	.064	64.86	140	"	"
35	Hobert Mixer.	1	.00713	7	.036	5.6	90	"	"
36	No.2 Ord. fan M. Galley Exh.	2	"	7	"	9.2	40	"	"
37	No.1 cooking fan motor.	1	"	7	"	4.58	16	"	"
38	Baker's oven.	1	.06112	19	.064	40.9	60	"	"
39	Junct. box for cooking app.	1	.01267	7	.048	28	140	"	"
40	Baggage lift.	1	.00713	7	.036	11	30	"	"
41	Tofu making motor.	1	"	7	"	5.9	80	"	"
42	Potato peeler.	1	"	7	"	2.4	10	"	"
43	Toaster.	1	"	7	"	17	130	"	"
44	Cocktail mixer.	1	.00322	1	.064	1	400	"	"
45	Aut. egg boiler.	1	.00713	7	.036	8	40	"	"
46	No.3 Aux. switchboard. tor.	1	.60493	91	.092	670	110	"	L.C.
47	Fuel oil service Pump M.	1	.00713	7	.036	6.2	180	"	L.C.A. Conductors!
48	No.1 Lub. oil purifier.	2	"	7	"	12.3	280	"	"
49	Fire & Sanitary Pump motor.	1	.18598	37	.08	137	220	"	"
50	Junct. box for F.O. purifier.	1	.02252	7	.064	36.9	150	"	"
51	No.3 Fuel oil purifier.	3	.00713	7	.036	12.3	40	"	"
52	No.3 Aux. switchboard.	1	.07985	127	.104	610	110	"	"
53	No.2 Jacket cooling W.P.	2	.40551	61	.092	190	140	"	"
54	No.2 piston cooling W.P.	2	.11903	37	.064	109	120	"	"
55	No.2 Lub. oil pump motor.	2	.18598	37	.08	128	60	"	"
56	F.O. transfer Pump for purifier.	1	.00713	7	.036	11	160	"	"
57	Lub. oil shifting P.M.	1	"	7	"	6.2	350	"	"
58	No.2 F.O. shift P.M.	2	.11903	37	.064	97	76	"	"
59	No.2 Bilge pump motor.	2	.03438	19	.048	44	160	"	"
60	Fire & general service P.M.	1	.18598	37	.08	137	250	"	"
61	Hot sanitary pump motor	1	.06112	19	.064	62	220	"	"
62	No.2 Fresh water Pump M.	2	.01267	7	.048	30	300	"	"
63	No.1 Turbo blower motor.	2	.60493	91	.092	1250	90	"	"
64	No.2 Aux. air comp. motor.	2	"	"	"	745	260	"	"
65	Work shop motor.	1	.00713	7	.036	22	110	"	"
66	Motor siren.	1	.02252	7	.064	35	800	"	"
67	Junct. box, Main Eng. turning M.	1	.06112	19	"	84	300	"	"
68	No.1 Main Eng. turning motor,	2	.02252	7	"	42	30	"	"
69	Junct. box Eng. Rm. Vent. fan M.	1	.06112	19	"	68	210	"	"
70	No.1 Eng. Rm. Vent fan motor.	2	.02252	7	"	34	50	"	"

L.C.A. - Lead covered and armoured.
L.C. - Lead covered.

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