

Rpt. 13.

No. 734

REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

24 JUL 1930

Received at London Office

Date of writing Report 28th July 1930 When handed in at Local Office 28th July 1930 Port of NAGASAKI.

No. in Survey held at NAGASAKI. Date, First Survey 16th Jan. 30. Last Survey 30th May 1930.

Reg. Book. 42525 on the Steel Twin Screw Motor Vessel "TERUKUNI MARU". Tons { Gross 11979.39
Net 7184.55

Built at Nagasaki. By whom built Mitsubishi Zosen Kaisha Ward No. 467 When built 1930

Owners Nippon Yusen Kabushiki Kaisha. Port belonging to Tokio.

Electric Light Installation fitted by Mitsubishi Zosen Kaisha, Ltd., Contract No. When fitted 1930.

System of Distribution Two wire system.

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

Direct or Alternating Current, Lighting Direct current Power Direct current

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? Yes

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

Where more than one generator is fitted are they arranged to run in parallel? Yes - except 50 K.W. & 30 K.W. 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 In Main 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? 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 At forward end of Main engine room.

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? In same compartment.

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, 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

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

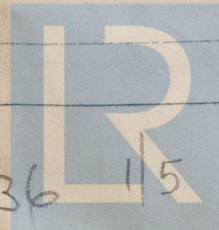
Main Switchgear, description of switchgear for each generator and each outgoing circuit, and arrangement of equalizer switches A 3 pole interlocked, as per rule, circuit breaker with overload trip, reverse current trip and time lag device for each of 450 KW sets. A double pole circuit breaker with overload trip and time lag device for each of 50 KW and 30 KW dynamo. a double pole circuit breaker with overload trip and time lag device or a double pole knife switch and fuses for each of out-going circuits.

Instruments on main switchboard 18 ammeters 4 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 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



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Cables: Single, twin, concentric, or multicore Single and 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 12 volts for Power
8.4 volts for Lighting
7.55 volts for Heater.
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 Clamped to metal bracket or perforated galvanized steel plate by metal clips and protected by metal cover or pipe where exposed to risk of any damage.

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 are no earthing connections except for Wireless telegraph and Direction finder, for which earthing conductors having sectional area of 0.0145 and 0.0070 square inch are used, 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 D.G. 30 KW. Emergency dynamo driven by Kerosene engine and placed in emergency dynamo room, Supplies the power for lighting throughout the ship and also for boat winches, W.T. door, control gear motor, emergency air compressor, emergency bilge pump, gyro compass, wireless telegraph, etc.

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 /

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 3 sets, whether fixed or portable 2 sets- fixed. 1 set- portable. are their fittings as per Rule Yes

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-but except a few very small motors.

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 type, 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			Revs. per Min.	DRIVEN BY	WHERE DRIVEN BY AN INTERNAL COMBUSTION ENGINE.	
		Kilowatts.	Volts.	Amperes.			Fuel Used.	Flash Point of Fuel.
MAIN	3	450	225	2000	250	Diesel Engine	Tarakan oil	About 150°
AUXILIARY	1	50	225	222	420/440	" "	" "	" "
EMERGENCY	1	30	225	133	1100	Kerosene engine	Kerosene oil	
ROTARY TRANSFORMER	1	5 K.V.A.	250	20	3000	DC 8 HP 220V 33A motor.		
	1	1 K.V.A.	100	10	3333	DC 1.5 HP 220V 8.5A motor.		
	1	1 K.V.A.	2100	0.475	1800	DC 3 HP 220V 13A motor.		
	1	0.8 K.V.A.	100	8	3333	DC 1 HP 220V 6.5 A motor.		

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...								

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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.

NAGASAKI WORKS, MITSUBISHI ZOSSEN KAISHA, LTD.

J. Motora
GENERAL MANAGER.

Electrical Engineers.

Date

COMPASSES.

Distance between electric generators or motors and standard compass. About 12 ft. from clear view screen motor.

Distance between electric generators or motors and steering compass. About 9 ft. from clear view screen motor.

The nearest cables to the compasses are as follows:—

A cable carrying 0.1 Amperes 1 feet from standard compass 1 feet from steering compass. (for Compass lamp).

A cable carrying 0.7 Amperes 12 feet from standard compass 9 feet from steering compass. (for clear view screen motor).

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 0 degrees on Any and every course in the case of the standard compass, and No degrees on Any and every course in the case of the steering compass.

NAGASAKI WORKS, MITSUBISHI ZOSSEN KAISHA, LTD.

J. Motora
GENERAL MANAGER.

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, etc. The materials and workmanship are good,

and the installation has been fitted in accordance with the Rules, tested under working condition and found satisfactory.

Plans sent under separate cover of:- Wiring diagram. (4 sheets).

*It is submitted that
this vessel is eligible for
THE RECORD. Elec. Light.*

28/7/30.

Total Capacity of Generators 1430. Kilowatts.

The amount of Fee ... £ 672:50 : 30. 5. 30

Travelling Expenses (if any) £ : 17. 6. 30

Committee's Minute

FRI 1 AUG 1930

Assigned

Elec. Light

Rpt. 9a.

Port of NAGASAKI. (1). Continuation of Report No. 1734. dated 28th July 1930. on the

Steel Twin Screw Motor Vessel "T E R U K U N I M A R U".

Ref. No.	Description.	No. of each cond.	Effective Area of sq. in.	Composition of Strand. No.	Total Maximum current Amperes.	Approximate Length (L & R ft)	Insulated with	How Protected.	
1		1	.00322	1	.064	6.88	150	Rubber	L.C.A.B.
2		1	.0396	19	.052	64	220	"	"
3		1	"	"	"	59	166	"	"
4	For Description	1	.1168	37	.064	95.5	110	"	"
5		1	.00701	7	.036	16.7	150	"	"
6	Please see	1	.00322	1	.064	6.2	140	"	"
7		1	"	1	"	8.7	144	"	"
8	Blue Prints	1	.1964	37	.083	135	156	"	"
9		1	.3024	37	.103	218	204	"	"
10		1	.1964	"	.083	140	220	"	"
11	Herewith.	1	.4064	61	.093	270	250	"	"
12		1	.2214	7	.064	44	396	"	"
13		1	.1168	37	"	98	46	"	"
14		1	.00322	1	"	1.8	44	"	"
15		1	"	1	"	25	110	"	"
16		4	.4064	61	.093	160	160	Paper	"
17		1	.1168	37	.064	98	440	Rubber	"
18		1	.3024	"	.103	218	250:	"	"
19		1	.1964	"	.083	140	200	"	"
20		1	.4064	61	.093	270	194	"	"
21		1	.02214	7	.064	44	48	"	"
22		1	.1462	7	.052	32	90	"	"
23		1	.1168	37	.064	126	78	"	"
24		1	.1964	"	.083	154	114	"	"
25		1	.00701	7	.036	12.3	150	"	"
26		1	.00322	1	.064	3.8	146	"	"
27		1	.00701	7	.036	22	64	"	"
28		1	.0396	19	.052	48	190	"	"
29		1	.00322	1	.064	6.2	180	"	"
30		1	"	1	"	1.8	48	"	"
31		2	.4064	61	.093	200	200	Paper	"
32		2	"	"	"	200	200	Rubber	"
33		1	.00322	1	.064	7.3	60	"	"
34		1	"	1	"	"	36	"	L.C.B.
35		1	"	1	"	"	50	"	"
36		1	"	1	"	"	72	"	"
37		1	"	1	"	7.5	930	"	"
38		1	.00701	7	.036	70	200	"	"
39		1	.0600	19	.064	3133	590	"	L.C.A.B.
40		1	.02214	7	.064	42	500	"	"
41		1	"	7	"	"	246	"	"
42		1	.01462	7	.052	8.4	410	"	"
43		1	.00701	7	.036	33	240	"	L.C.B.
44		1	.0396	19	.052	33	160	"	L.C.A.B.
45		1	"	"	"	"	192	"	"
46		1	"	"	"	"	220	"	"
47		1	.1964	37	.083	133	40	"	"
48		1	.3024	"	.103	2	304	"	"
49		1	.01462	7	.052	245	"	"	"
50		1	.4985	61	.103	2	456	"	"
51		1	.1964	37	.083	154	820	"	"
52		4	.7435	91	.103	1550	240	"	L.C.B.
53		4	"	"	"	1730	326	"	"
54		5	"	"	"	2000	184	"	"
55		1	.3024	37	"	222	288	"	L.C.A.B.
56		1	.1964	"	.083	152	20	"	"
57		1	.00701	7	.036	11.5	60	"	"
58		1	"	7	"	17	80	"	"
59		1	.4064	61	.093	160	160	Paper	"
60		1	.00322	1	.064	5.6	180	Rubber	L.C.B.
61		1	"	1	"	2.25	156	"	"
62		1	.00701	7	.036	12	154	"	"
63		1	.00322	1	.064	8.25	156	"	"
64		1	.00701	7	.036	16.25	152	"	"
65		1	.00322	1	.064	4.6	64	"	"
66		1	"	1	"	2.4	72	"	"
67		1	"	1	"	7	72	"	"
68		1	.1168	37	"	2	650	"	L.C.A.B.
69		1	.00322	1	"	5.6	200	"	"
70		1	"	1	"	8.25	120	"	"
71		1	.00701	7	.036	16.25	360	"	"
72		1	.00322	1	.064	2.25	136	"	"
73		1	.4064	61	.093	152	152	"	"
74		1	.0600	19	.064	3	560	"	"
75		1	.00322	1	"	2.25	206	"	"
76		1	.00701	7	.036	12	210	"	"
77		1	.00322	1	.064	8.25	194	"	"
78		1	"	1	"	5.6	230	"	"
79		1	.1168	37	"	120	60	"	"
80		1	.4985	61	.103	2	270	"	"
81		1	.3024	37	"	222	192	"	"
82		1	.1168	"	.064	180	136	"	"
83		1	.4985	61	.103	380	60	"	"
84		2	.3024	37	"	510	110	"	"
85		2	.4064	61	.093	410	56	Paper	"
86		1	.1168	37	.064	120	56	Rubber	"
87		1	.4985	61	.103	260	260	"	"

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88	1	.3024	37	.103	222	60	Rubber	L.C.A.B.
89	1	.1168	"	.064	120	60	"	"
90	2	.3024	"	.103		180	"	"
91	2	"	"	"	510	130	"	"
92	1	"	"	"	232	176	"	"
93	For Description	.00322	1	.064	4.85	126	"	"
94		.00701	7	.036	11.4	10	"	"
95	Please see	.00322	1	.064	4.6	20	"	"
96		.00701	7	.036	16	64	"	"
97	Blue Prints	.00322	1	.064	0.8	104	"	"
98		.01462	7	.052	16.8	246	"	"
99	Herewith.	.0396	19	"		106	"	"
100		.00701	7	.036	10	26	"	"
101		"	7	"	12.6	202	"	"
102		.00322	1	.064		204	"	"
103		"	1	"		206	"	"
104		.4064	61	.093		208	Paper	"
105		.00322	1	.064	11	80	Rubber	"
106		.00701	7	.036	16.1	284	"	"
107		.00322	1	.064	3.7	162	"	"
108		"	1	"	5	34	"	"
109		"	1	"	5	88	"	"
110		"	1	"	3	20	"	"
111		"	1	"	3	306	"	"
112		"	1	"	8.26	140	"	"
113		.00701	7	.036	16.25	36	"	"
114		"	7	"	18	310	"	"
115		.1168	37	.064	86.3	62	"	"
116		.01462	7	.052	25	336	"	"
117		.02214	7	.064	40.9	68	"	"
118		.00701	7	.036	15.9	126	"	"
119		.01462	7	.052		41	"	"
120		.00322	1	.054	25	132	"	"
121		"	1	"	2.6	84	"	"
122		"	1	"	2.4	200	"	"
123		"	1	"	3	264	"	"
124		"	1	"	2	70	"	"
125		"	1	"	2.5	100	"	"
126		"	1	"	5.6	138	"	"
127		.4064	61	.093		112	Paper	"
128		.0396	19	.052	42	80	Rubber	"
129		.00701	7	.036	10	280	"	L.C.
130		"	7	"	12	80	"	"
131		"	7	"	4	6	"	"
132		"	7	"	8	220	"	L.C.A.B.
133		.02214	7	.064	28	200	"	"
134		.00701	7	.036	7	6	"	L.C.
135		"	7	"	9.5	120	"	"
136		"	7	"	5.5	40	"	"
137		"	7	"	6.5	660	"	L.C.A.B.
138		"	7	"	12	140	"	"
139		"	7	"	6.5	6	"	L.C.
140		"	7	"	5.5	210	"	"
141		.0600	19	.064	57	380	"	L.C.A.B.
142		.02214	7	"	28	270	"	"
143		.00701	7	.036	6.5	30	"	L.C.
144		"	7	"	5.5	135	"	"
145		"	7	"	8	8	"	"
146		.02214	7	.064	29	270	"	L.C.A.B.
147		.00701	7	.036	10	150	"	L.C.
148		"	7	"	8	8	"	"
149		"	7	"	7	200	"	"
150		"	7	"	4	100	"	"
151		.0600	19	.064	49	560	"	L.C.A.B.
152		.02214	7	"	35	100	"	"
153		.00701	7	.036	5	130	"	L.C.B.
154		"	7	"	5.5	250	"	L.C.A.B.
155		"	7	"	5.5	160	"	L.C.
156		"	7	"	9.5	6	"	"
157		"	7	"	14	100	"	L.C.A.B.
158		"	7	"	5.5	6	"	L.C.
159		"	7	"	8.5	120	"	L.C.B.
160		.0600	19	.064	62	410	"	L.C.A.B.
161		.02214	7	"	38	6	"	"
162		.00701	7	.036	4.5	260	"	"
163		.01462	7	.052	6.5	700	"	"
164		"	7	"	13	250	"	"
165		.00701	7	.036	7	100	"	"
166		.02214	7	.064	24	300	"	"
167		.00701	7	.036	5.5	240	"	"
168		"	7	"	6.5	220	"	"
169		.01462	7	.052	25	40	"	"
170		.00701	7	.036	10	8	"	"
171		"	7	"	5	330	"	"
172		.0396	19	.052	60	560	"	"
173		.00701	7	.036	10	2200	"	"
174		"	7	"	5.5	90	"	L.C.
175		"	7	"	4.5	150	"	"
176		.02214	7	.064	27	250	"	L.C.A.B.
177		.00322	1	"	6.8	250	"	"
178		"	1	"	3.4	150	"	"
179		.00701	7	.036	10.4	290	"	"
180		.00322	1	.064	0.27	970	"	"
181		.00701	7	.036	4.5	100	"	"
182		.0396	19	.052	42	200	"	"
183		.00701	7	.036	5	70	"	L.C.

							Rubber	L.C.
184	1	.00701	7	.036	7.	8	"	"
185	1	"	7	"	11	140	"	"
186	1	"	7	"	9	360	"	L.C.A.B.
187	1	"	7	"	10	250	"	"
188	1	.0396	19	.052	33	400	"	"
189	For Description	.02214	7	.064	13.3	200	"	"
190		.00322	1	"	3.4	130	"	"
191	Please see	"	1	"	1.1	130	"	"
192		.00701	7	.036	3.3	620	"	"
193	Blue Prints	.00322	1	.064	1.1	20	"	"
194		.00181	1	.048	0.27	20	"	"
195	Herewith.	.00701	7	.036	6.3	230	"	"
196		.00322	1	.064	1.1	40	"	"
197		.01462	7	.052	10	400	"	"
198		.00322	1	.064	3.4	4	"	"
199		.0600	19	"	21.58	380	"	"
200		.01462	7	.052	13	"	"	"
201		.00701	7	.036	5.5	400	"	"
202		.1168	37	.064	72.8	440	"	"
203		.00701	7	.036	11.4	140	"	B.C.
204		"	7	"	6.8	180	"	"
205		"	7	"	13	80	"	"
206		.1168	37	.064	104.3	170	"	L.C.A.B.
207		.0600	19	"	68.4	6	"	"
208		.00701	7	.036	11.4	170	"	Braided.
209		.02214	7	.064	35.9	6	"	L.C.
210		.00701	7	.036	8.6	140	"	Braided.
211		.00322	1	.064	9.1	200	"	"
212		.1168	37	"	100	230	"	L.C.A.B.
213		.0396	19	.052	45.5	6	"	L.C.
214		.00322	1	.064	9.1	150	"	"
215		"	1	"	45.5	100	"	"
216		"	1	"	6.8	130	"	"
217		.0396	19	.052	54.5	130	"	"
218		.00322	1	.064	6.8	110	"	"
219		.00322	1	"	4.55	90	"	"
220		"	1	"	9.1	180	"	L.C.B.
221		.3024	37	.103	158.8	120	"	L.C.A.B.
222		.0396	19	.052	54.4	6	"	L.C.
223		.00701	7	.036	13.6	190	"	Braided
224		.0396	19	.052	52.2	6	"	L.C.
225		.00322	1	.064	4.55	70	"	"
226		.00322	1	"	6.8	230	"	"
227		.0396	19	.052	52.2	110	"	"
228		.00322	1	.064	4.55	190	"	"
229		"	1	"	6.8	210	"	"
230		.3024	37	.103	181.4	260	"	L.C.A.B.
231		.0396	19	.052	49.9	150	"	L.C.
232		.00322	1	.064	6.8	140	"	"
233		"	1	"	4.55	170	"	"
234		.0396	19	.052	45.4	110	"	"
235		.00322	1	.064	6.8	110	"	"
236		"	1	"	4.55	90	"	"
237		.0396	19	.052	43	230	"	"
238		.00322	1	.064	4.55	110	"	"
239		"	1	"	6.8	125	"	"
240		.0396	19	.052	43.1	6	"	"
241		.00322	1	.064	6.8	150	"	"
242		"	1	"	4.55	75	"	"
243		.1964	37	.083	1092	500	"	L.C.A.B.
244		.0225	7	.064	22.75	160	"	L.C.
245		.00322	1	"	4.55	110	"	"
246		.02214	7	"	36.4	6	"	"
247		.00322	1	"	4.55	130	"	"
248		.0396	19	.052	50	6	"	"
249		.00322	1	.064	4.55	120	"	"
250		"	1	"	9.1	170	"	"

L.C.A.B. - Lead covered armoured and braided.
L.C.B. - Lead covered & braided.
L.C. - Lead covered.

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