

APPENDIX 5

修繕計画案



GHANA RAILWAY COMPANY LTD.

MANAGING DIRECTOR'S OFFICE
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Reference:

PRJ/G/16/584

10th January, 2013.


THE CHIEF EXECUTIVE OFFICER,
GHANA RAILWAY DEVELOPMENT AUTHORITY,
A C C R A

ACTION PLAN FOR TAKORADI - NSUTA SECTION

We make reference to your letter No.GRDA/1740 dated November 8, 2012 on the above subject.

Please find attached the action plan for Takoradi-Nsuta Section for your information and necessary action.

An amount of GH¢4,657,803.78 will be needed to execute the action plan.


G. ATO BOTCHEY
AG. MANAGING DIRECTOR

ACTION PLAN TO ACHIEVE TARGETED HAULAGE OF MANGANESE ORE IN 2013

BACKGROUND:

Ghana Railway Company Limited has a network with a route length of 947 Km. There is a near breakdown of the railways network. Greater parts of the Western and Eastern and the entire Central line are not functioning due to lack of funds to maintain the tracks. With the exception of manganese, haulage of all other commercial commodities have ceased. Manganese ore is hauled over a distance of some 60 Km from Nsuta to the Takoradi Port by rail.

OBJECTIVES:

The objective of this report is to put up an action plan indicating the actions to be taken to enable Ghana Railway Company Limited (GRCL) haul the set target for Manganese in the year 2013.

TRAFFIC PERFORMANCE 2012:

GRCL is expected to haul about 637,574 tons at the end of 2012, against a target of 825,000 tons set at the beginning of the year. This will represent 81.21% of the set target.

The monthly performance to date is shown in the table below:

Month	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
Tonnage	32,194	51,480	59,924	28,488	52,022	51,294	60,678	71,328	50,872	21,106	78,188	80,000*	637,574

*Estimate

REASONS FOR NOT ACHIEVING TARGET:

Railings were affected by the following:

- 46 accidents affecting manganese trains have been recorded up to the end of October 2012. The total line restoration time resulting from these accidents was 2,463 hours. The derailment were mostly caused by poor track conditions and poor conditions of some of the wagons.
- Insufficient number of serviceable wagons. Trains were running with an average of 18 wagons instead of 25 wagons maximum.
- Limited space at the off loading point at the port. Train services are at times suspended due to lack of space and maintenance of the tipping plant.

HAULAGE PROGRAMME FOR 2013:

For the year 2013 GRCL has targeted to haul 1,200,000 tons of manganese ore with available resources. Ghana Manganese Company (GMC) has indicated to haul a total of 1,500,000 tons of ore in 2013. GRCL is in competition with road haulers.

REQUIREMENTS:

WAGONS:

GRCL has acquired 70 new 40 ton wagons from India 44 of which have been cleared from the port as at 13th November, 2012. The seventy (70) wagons will form 3 rakes. In addition 2 more rakes will be selected from the existing wagons to make 5 rakes for manganese ore haulage for next year 2013. In all 120 wagons will be needed and these are available.

LOCOMOTIVES:

Nine (9) locomotives will be needed to run the trains. Four (4) of the 1671 class of locomotives which are fitted with air brake system will be used to run the three (3) rakes from India. These are fitted with air break systems. Three (3) locomotives of the 1651/1661 class will be made available to run the two (2) rakes vacuum brake wagons. Two other locos namely: one 1651 will be earmarked for emergencies/shunting duties and one 1670 class for the offloading manganese ore.

TRACK

The track is not well maintained and is in generally poor condition.

The conditions of the tracks are aptly described as below:

1. The longitudinal drains have failed almost on about 80% of the track.
2. Rail creep has affected the down line and requires pulling back the rails.
3. Most curves are out of alignment especially the transitions.
4. Most joints have only about 2 to 3 bolts and nuts instead of the required number of 4.

Thus train speed is slow and derailments are frequent.

SIGNAL AND COMMUNICATION:

There is no functional signaling system in place between Takoradi and Nsuta, but there is adequate communication using recently installed block telephone system.

There is also some mobile phone buck up and this in conjunction with the use of line clear certificate is enough to receive and dispatch trains safely.

STEPS TO MITIGATE FACTORS AFFECTING PERFORMANCE:

The following steps have been taken to reduce the effect of the factors that affect performance:

- Purchase of spare parts for repairs of locomotive will be intensified. The new 70 trucks came with spare parts sufficient enough for maintaining the wagons throughout year 2013.
- The old wooden wagons which were involved in most of the derailments have been withdrawn for detailed inspection and repairs. There is enough wagons available to achieve the set target for year 2013.
- There is ongoing work on the track to replace wooden sleepers in bad condition with steel and wooden sleepers and ballast some sections of the track.
- TRAFFIC STATISTICS

Commodity	Manganese Ore
Year	2013
Operating days	284
Originating Tonnage	1,200,000 tons
No. of Wagons to be loaded	40,000
Average load per wagon	30 tons
Distance	63 Km
Tonne Km	75,600,000
Wagon Turn Round (days)	0.8
No. of wagon per train	23
No. of loco required (mainline)	5 bare (+ 2 extra)
Wagons required	113 bare + (10 extra)

FINANCIAL IMPLICATION:

An amount of GH¢4,657,803.78 will be needed to execute the programme namely;

Civil Engineering Items	-	GH¢ 412,280.00 (USD 206,140.00)
Mechanical Engineering Items	-	
i) Locomotive Parts	-	GH¢3,145,480.90 (USD1,572,740.45)
ii) Wagon Parts	-	GH¢1,100,042.88 (USD 550,021.44)
Total:	-	GH¢4,657,803.78 (USD2,328,901.89)

Exchange Rate USD1.00 = GH¢2.00

Details as per the attached.

Action Plan

	Action	Purpose	Reason	Means	Expected Effect	Responsible person	Deadline (Duration)	Cost
1	Realignment	Improvement of alignment and rail creep	<ul style="list-style-type: none"> - Rail creep has affected the down line and requires pulling back the rails. - Most curves are out of alignment, especially the transitions 	Measuring and repair	Reduction of derailment	Chief Civil Engineer (CCE)	90 days	N.A.
2	Track improvement	Improvement of track condition	<ul style="list-style-type: none"> - The track longitudinal drains have failed almost 80% of the track - The ratio of defective sleepers is more than 30%. - Ballast is mixed up with soil. - Most joints have only about 2 to 3 bolts & Nuts instead of the required number of 4. 	Civil works	Reduction of derailment	Chief Civil Engineer (CCE)	90 days	N.A.
3	Maintenance of locomotive	Maintenance of locomotives	<ul style="list-style-type: none"> - 4 of 1670 class locos for hauling 3 rakes of new wagons are required. But only 3 locos are available. - Loco 1661, under repairs at Location workshop, is waiting for lubricating oil to serve as a spare locomotive. 	Maintenance	5 rakes can be operated. (5 rakes are enough for manganese operations)	Chief Mech. & Elect. Engineer (CMEE)	Short Term 1 year Medium Term 2-3 years Long Term 3 years Total	Short Term US\$831,321.88 Medium. Term US\$307,998.55 Long Term US\$433,420.04 US\$1,572,740.45 (GH¢3,145.480.90)

4	Maintenance of wagon	Maintenance of old wagons	- Air leak of break system is severe. - Wear of wheels is also severe	Replacement of old parts	i) Improvement in braking system ii) Normalisation of wagon heights	Chief Mech. & Elect. Engineer (CMEE)	1 year	USD 550,021.44 (GH¢1,100,042.88)
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Table 1 Description of Track Works

	Location/Section	Description of work	Materials/Equipment requirement	Quantity	Responsible Gang	Duration
A	ML8-11 Angu-Kojokrom	Up and Down lines a. Curve regarding b. Changing broken and rotten sleepers c. Regarding new rails d. Ballasting, packing & lining e. Insertion and tightening of fasters f. Rail creep	1. Wooden sleeper 2. Steel sleepers 3. Ballast 4. Fish bolts & Nuts 5. Shank spike 6. BS80A rails	3,000 pcs 3,000 pcs 2,000m ³ 88 sets* 12,000 pcs 20 pcs @ 12.2m	Gang 2	70 days
B	ML34-35-36 Bonsawire-Nsuta	a. Changing rotten sleepers b. Changing new rails c. Ballasting, packing & lining d. Rail creep	1. Wooden sleeper 2. Steel sleepers 3. BS80A rails 4. Ballast 5. Fish bolts & Nuts 6. Shank spike	1,000 pcs 2,000 pcs 10 pcs @ 12.2m 800m ³ 48 sets* 4,000 pcs	Gang 3	60 days
C	Kojokrom Station limits	a. Desilting drains b. Changing rotten sleepers c. Track formation repairs d. Ballast cleaning	1. Wooden sleeper 2. Ballast	1,000 pcs 200m ³	Gang 4	40 days
D	MI 2-4 Takoradi-Kojokrom	a. Drainage improvement b. Changing rotten sleepers	1. Wooden sleeper 2. Ballast 3. BS80A rails 4. Fish bolts & Nuts 5. Shank spike 6. Backhoe (lease)	2,000 pcs 200m ³ 5 pcs @ 12.2m 7 sets 8,000 pcs 10 days	Gang 4	40 days
E	Manso-Bridge Southern abutment Manso-Amantin	a. Drainage improvement (prevention against scouring)	1. Gabion nets 2. 8"-10" boulders	40 pcs 60m ³	Gang 1	80 days
F	MI 12-18 Angu-Manso	a. Changing rotten sleepers b. Ballasting, packing & lining c. Insertion and tightening of fasters	1. Wooden sleeper 2. Ballast 3. Shank spike	3,000 pcs 2,000m ³ 12,000 pcs	Gang 5	70 days
G	MI 23-27 Amantin-Benso Esuaso	a. Changing rotten sleepers b. Ballasting, packing & lining c. Insertion and tightening of fasters				

*:Quantities of fish bolt & nuts and shank spikes are assumed by JICA Study Team

**ESTIMATED COST FOR TRACK MATERIALS AND TOOLS REQUIRED
FOR THE IMPROVEMENT OF THE TAKORADI TO NSUTA RAIL LINE**

S/N	ITEM	QUANTITY	UNIT COST GH¢	TOTAL COST GH¢
1.	Wooden Sleepers	10,000 Nos.	16.00	160,000.00
2.	Shovel	20 Nos.	8.00	160.00
3.	Back Hoe Equipment	10 Days	1,000.00 (US\$500.00)	10,000.00 (US\$5,000.00)
4.	8" – 10" Boulders	60m ³	27.00	1,620.00
	Transport for 15m ³ /Trip	4 Trips	500.00	2,000.00
5.	Repair and Maintenance of Gang Trolleys Nos.1, 3 & 6	3 Nos.	4,500.00	13,500.00
6.	Transportation of Rails from Accra to Ketan Level Crossing (40 Nos. 80A)	2 Trips	-	5,000.00
7.	Track Tools	Various	-	200,000.00
8.	Round logs for Sawmill for Crossing and Bridge Timbers	200m ³	150.00	30,000.00
TOTAL				412,280.00



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PROFORMA INVOICE
DEV12LOG0361/ 1

Lisses, at 08/09/2012

File AFF12LOG0355	
Person in charge M. Andrew MOTT Tel : +44 (0)16.9119.333 Fax : +44 (0)16.9119.330 a.mott@cimgroupe.com	Attention Mr. G. ATO BOTCHEY Tel : +233.(312).26.52. Fax : +233.(312).37.97.
In response to your request PRJ/SP/LMW/552 of 08/01/2012	Please find below details of our proposal for DIESEL MAINTENANCE LIST

GHANA RAILWAY COMPANY LIMITED
PO BOX 251
TAKORADI
GHANA

To be delivered to
GHANA RAILWAY COMPANY LIMITED
PO BOX 251
TAKORADI
GHANA

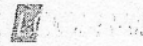
Item	O/Ref.	Y/Ref.	Description	Delivery Days	Qty / Unit	Unit price USD	Total price USD
1	PN000144		FILTER ELEMENT EMD 08345482 (FILTER 08168621) MOQ 4 units	10	240 Piece	20,97	5 032,80
2	PN000145		FILTER ELEMENT EMD 08423132 MOQ 12 units	70	108 Piece	6,88	743,04
3	PN006883		ELEMENT FUEL STRAINER EMD 09324489 (EX08344103) MOQ 12 units	80	72 Piece	7,76	558,72
4	PN000309		FILTER ELEMENT EMD 08340000 MOQ 12 units	110	48 Piece	8,25	396,00
5	PN003626		FILTER EMD 40035123 MOQ 12 units	30	48 Piece	18,76	900,48
6	PN000245		FILTER EMD 09311037 MOQ 12 units	70	48 Piece	7,87	377,76
7	PN007214		ELEMENT FILTER EMD 08402068	20	24 Piece	24,46	587,04
8	PN102501		FILTER DONALDSON P772523	30	40 Piece	209,99	8 399,60

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Item	O/Ref.	Y/Ref.	Description	Delivery Days	Qty / Unit	Unit price USD	Total price USD
9	PN009088		AIR CLEANER OUTLINE EMD 40110327	120	4 Piece	6 186,91	24 747,64
10	PN009089		AIR CLEANER OUTLINE EMD 40110328	140	4 Piece	4 673,00	18 692,00
11	PN006218		BOX ASM. EMD 08342136	90	6 Piece	799,96	4 799,76
12	PN001021		RING EMD 08343161	60	6 Piece	1,40	8,40
13	PN009050		VALVE EMD 08369450	130	2 Piece	10 227,98	20 455,96
14	PN012075		KIT EMD 08271906 (EX. 0559549)	90	10 Piece	13,24	132,40
15	PN000430		VALVE EMD 08283626	110	10 Piece	3 741,94	37 419,40
16	PN002986		CLUTCH DR ASM-LH ROT EMD 40052862	90	4 Piece	14 679,10	58 716,40
19	PN004331		VALVE EMD 08451213	20	6 Piece	445,61	2 673,66
20	PN003312		KIT EMD 40029185	40	4 Piece	36,49	145,96
21	PN008037		MOTOR EMD 10478828 (EX GM 01990333)	40	6 Piece	1 440,53	8 643,18
22	PN011099		MOTOR BRUSH ASM EMD 01852886	90	128 Piece	1,89	241,92
23	PN003840		RESISTOR EMD 09519141	60	5 Piece	48,26	241,30
26	PN007979		RESISTOR EMD 09339108	80	6 Piece	68,28	409,68
28	PN006311		CONTACTOR EMD 08482180	30	4 Piece	1 234,59	4 938,36
29	PN012020		CONTACTOR EMD 09315518 (EX EMD 08433397)	40	1 Piece	1 672,61	1 672,61
30	PN001107		RELAY EMD 08357416	40	4 Piece	2 082,49	8 329,96
31	PN000387		BULB FOR HEAD LIGHT EMD 08156001	50	200 Piece	18,28	3 656,00
33	PN003435		LAMP EMD 08140357	90	24 Piece	0,47	11,28

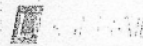
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MODELS



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Item	O/Ref.	Y/Ref.	Description	Delivery Days	Qty / Unit	Unit price USD	Total price USD
34	PN000153		CIRCUIT MODULE-TH14 EMD 08482633	120	6 Piece	2 318,22	13 909,32
35	PN001143		MODULE VR14 EMD 40055335 (EX EMD 08440256)	50	6 Piece	1 926,63	11 559,78
36	PN007993		MODULE GX2 EMD 08442229	120	4 Piece	1 820,25	7 281,00
37	PN001137		MODULE GV 12 EMD 08453967	90	4 Piece	1 142,71	4 570,84
38	PN000923		MODULE WS11 EMD 08454771	140	8 Piece	6 116,28	48 930,24
39	PN009013		MODULE RC 12 EMD 09319866	120	1 Piece	849,32	849,32
41	PN000456		CONTACTOR FS EMD 08451158	90	2 Piece	1 410,12	2 820,24
42	PN012018		RESISTOR MFS EMD 09539065	90	1 Piece	840,30	840,30
43	PN012338		RESISTOR MFS EMD 09539063	90	1 Piece	840,30	840,30
44	PN012339		RESISTOR MFS EMD 09539064	90	1 Piece	840,30	840,30
45	PN000585		RELAY EMD 08363168	40	4 Piece	166,01	664,04
46	PN001113		RELAIS TL TD EMD 40001247 (EX 08349285)	50	4 Piece	675,42	2 701,68
47	PN006248		RELAY EMD 40011787 (EX EMD 08276598 (EX GM 081	90	2 Piece	923,67	1 847,34
48	PN000586		RELAY EMD 08357415	60	2 Piece	162,19	324,38
49	PN007278		SWITCH EMD 09515383	50	6 Piece	327,80	1 966,80
50	PN003175		SWITCH EMD 40045029 (EX 08433191)	20	2 Piece	214,40	428,80
51	PN007218		AMMETER EMD 08295501	30	2 Piece	280,27	560,54
52	PN008374		VOLTMETER EMD 10531711	80	2 Piece	270,47	540,94
53	PN012137		LAMP EMD 08482811	110	20 Piece	1,19	23,80

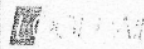
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TOULOU



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Item	O/Ref.	Description	Delivery Days	Qty / Unit	Unit price USD	Total price USD
		MOQ 10 units				
54	PN003177	SWITCH EMD 08384650 (EX 8217561 - 8126019)	30	1 Piece	36,17	36,17
55	PN102445	AIR WHISTLE EMD 010585230	90	4 Piece	1 273,86	5 095,44
56	PN102469	SIGNAL HORN M75/370 HZ 0 908 114	40	2 Piece	497,74	995,48
57	PN102470	SIGNAL HORN M75/660 HZ 0 907 739	40	2 Piece	497,74	995,48
58	PN003674	BRUSH EMD 40034666	120	24 Piece	16,71	401,04
59	PN003675	CARBON BRUSH EMD 08413190 MOQ 4 units	110	24 Piece	6,55	157,20
60	PN000283	CARBON BRUSH EMD 40025029 (EX 8430993)	100	100 Piece	32,41	3 241,00
61	PN000443	BRUSH HOLDER EMD 08290124 (EX 08453470)	90	60 Piece	585,42	35 125,20
62	PN006222	SWITCH ASM EMD 08296748 (EX 08225806)	70	18 Piece	42,25	760,50
63	PN006223	SWITCH EMD 08296752 (EX 08225807)	80	6 Piece	31,17	187,02
64	PN006221	SWITCH EMD 08296750	50	6 Piece	51,12	306,72
65	PN006220	SWITCH EMD 08298178 (EX.08225805)	40	18 Piece	45,33	815,94
66	PN006224	CONTROL SWITCH EMD 40048972 (EX GM 08358932)	40	2 Piece	236,23	472,46
68	PN001191	SWITCH EMD 40040512 (EX 08334773 08441559)	30	4 Piece	454,27	1 817,08
69	PN006903	SWITCH EMD 08448174 (EX 40040502)	40	4 Piece	473,62	1 894,48
73	PN003246	SWITCH EMD 08362643 (EX 8004888)	40	1 Piece	21,88	21,88
74	PN000430	VALVE EMD 08283626	90	4 Piece	3 741,94	14 967,76
75	PN009046	VALVE EMD 08453467	120	2 Piece	905,94	1 811,88

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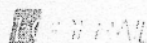
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Item	O/Ref.	Description	Delivery Days	Qty/ Unit	Unit price USD	Total price USD
76	PN013342	KIT-BRAKE EMD 08271904 (EX 559547)	50	6 Piece	151,52	909,12
77	PN009047	KIT REPAIR EMD 08271905	110	6 Piece	14,44	86,64
78	PN012109	VALVE EMD 08369452	110	4 Piece	2 836,00	11 344,00
79	PN000986	SEPARATEUR EMD 09503032	120	6 Piece	909,88	5 459,28
80	PN001253	ELEMENT FILTRE TYPE VORTOX EMD 09508836	100	6 Piece	57,76	346,56
81	PN102446	HOSE EMD 08451115	110	10 Piece	1 156,95	11 569,50
82	PN100510	COUPLER & DRAFTGR EMD 10623961 MOQ 2 units	200	6 Piece	48 129,03	288 774,18
83	PN102447	COUPLER CARRIER ASSEMBLY EMD 08278661	180	6 Piece	563,99	3 383,94
84	PN012523	CYLINDRE DE FREIN EMD 08308622	120	16 Piece	1 378,61	22 057,76
85	PN012522	CYLINDRE DE FREIN EMD 08308621	120	16 Piece	1 378,61	22 057,76
86	PN009053	SPRING EMD 08381082	120	60 Piece	911,67	54 700,20
87	PN009054	WEAR PLATE EMD 08414280	90	96 Piece	628,55	60 340,80
88	PN009055	WEAR PLATE EMD 08491403	80	96 Piece	130,95	12 571,20
89	PN011962	PLATE (PAD) EMD 08159761	100	10 Piece	32,31	323,10
90	PN000558	PLATE EMD 09085371 (EX 08381746)	130	12 Piece	146,04	1 752,48
91	PN000611	PLATE WEAR BOLSTER EMD 09089551 (EX GM 08453310-09089552)	30	48 Piece	114,98	5 519,04
92	PN000423	RING EMD 09329630 (EX 09330490 - 08381745)	70	8 Piece	71,41	571,28
93	PN011964	SHOE EMD 08059235	40	60 Piece	99,61	5 976,60

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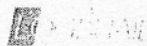
PROFORMA INVOICE : DEV12LOG0361 / 1 GHANA RAILWAY COMPANY LIMITED

Date : 08/09/2012

Item	O/Ref.	Y/Ref.	Description	Delivery Days	Qty/ Unit	Unit price USD	Total price USD
94	PN004741		ABSORBER EMD 40153054 (EX EMD 04993721 (EX 031886	40	16 Piece	401,77	6 428,32
96	PN000625		JOINT TORIQUE EMD 08332959	90	12 Piece	5,10	61,20
98	PN006212		PINION EMD 08341961	80	24 Piece	785,32	18 847,68
99	PN006215		DUCT EMD 08382488	120	6 Piece	945,44	5 672,64
100	PN006216		DUCT EMD 08383320	140	12 Piece	1 543,00	18 516,00
101	PN009139		CARTER D'ENGRENAGE HAUT EMD 40162666 (EX.09557119)	120	10 Piece	3 715,68	37 156,80
102	PN009056		GEAR CASE ASM LOWER EMD 40162663	180	10 Piece	1 922,26	19 222,60
103	PN004993		STRAP EMD 08126036 MOQ 10 units	40	20 Piece	10,00	200,00
104	PN001199		SEAL EMD 08250267	90	12 Piece	6,77	81,24
105	PN006212		PINION EMD 08341961	110	12 Piece	785,32	9 423,84
106	PN001438		CAP ASM EMD 08357105	120	24 Piece	123,42	2 962,08
108	PN004630		BEARING EMD 08491285	120	60 Piece	713,63	42 817,80
109	PN004626		SEAL EMD 09552602	120	60 Piece	111,13	6 667,80
110	PN004639		SEAL EMD 09552603	100	60 Piece	121,05	7 263,00
111	PN000304		CRATER COUMPOUND - 1LBS EMD 09569938 (EX 08493729)48 BAGS/CARTON MOQ 48 units	50	2 016 le sachet	215,71	434 871,36
112	PN004317		WICK EMD 08370101	40	120 Piece	89,99	10 798,80
113	PN004280		WIRE LEAD EMD 08243661 unit = 5 lbs, so if qty is 3, then 15 lbs.	40	3 Piece	96,34	289,02



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International
Maintenance



DIVISION DE L'ACTM
LES APPAREILS
FERROVIAIRES



LOG PROFORMA INVOICE : DEV12LOG0361 / 1 GHANA RAILWAY COMPANY LIMITED Date : 08/09/2012

Item	O/Ref.	Y/Ref.	Description	Delivery Days	Qty/ Unit	Unit price USD	Total price USD
114	PN001021		RING EMD 08343161	90	12 Piece	1,40	16,80
115	PN004890		RESSORT EMD 08408735 MOQ 10 units	120	10 Piece	4,57	45,70
116	PN003695		GAUGE EMD 08231594	40	2 Piece	115,70	231,40
117	PN003513		GAUGE EMD 08099907 (EX GM 08232106-08211837)	50	2 Piece	50,27	100,54
118	PN000693		SEAL 3" EMD 08479602 (EX 08307477) MOQ 4 units	40	12 Piece	7,23	86,76
119	PN004746		SEAL EMD 08479601 (EX 8479538) MOQ 4 units	90	12 Piece	7,76	93,12
120	PN004746		SEAL EMD 08479601 (EX 8479538) MOQ 4 units	90	12 Piece	7,76	93,12
121	PN009146		SEAL EMD 08479543 (EX 8479533) MOQ 10 units	120	10 Piece	5,27	52,70
122	PN102448		SEAL O RING 1-3/8" EMD 09565247 MOQ 50 units	110	50 Piece	0,60	30,00

Shipment by : By sea	Net weight : 57,00 T
Validity period : 07/11/2012	Gross weigh 57,00 T
Terms of payment : L/C Irrevocable confirmed	
Except otherwise, goods origin : United Stats of America and coming from : Canada	

AF12LOG0365

Total material	USD	1 513 307,76
PACKING		6 800,00
FOB MONTREAL		2 900,00
CIF/CF		37 832,69
CIF TAKORADI		11 900,00
TOTAL	USD	1 572 740,45

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55, RUE DU BOIS CHALAND - CE 2928 LISSES - 91029 EVRY CEDEX - FRANCE
TEL. : (0)1 69 11 93 33 * FAX : (0)1 69 11 93 30 * E-mail : cim@cimgroupe.com * Site : www.logerail.com

S.A AU CAPITAL DE 1 632 816 € R.C.S. EVRY 380 330 571 TVA FR 28 380 330 571 SIRET 380 330 571 0003 - APE 4669 B

SHORT AND MEDIUM TERM SPARES FOR SOUTH AFRICAN WAGONS

2 RAKES TO BE USED FOR MANAGANESE HAULAGE

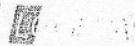
S/N	DESCRIPTION	PART NO.	QTY.	UNIT PRICE US\$ ^o	TOTAL PRICE US\$
1	Bottom Centre Casting	6802078	20	2,950.00	59,000.00
2	Top Centre Casting	368110747	20	2,950.00	59,000.00
3	Centre Casting Liner Cup	68032013	100	978.00	97,800.00
4	Outer Coil Spring (from Aflink)	68052698	240	125.00	30,000.00
5	Vertical Brake Lever	680039658	100	70.00	7,000.00
6	Slack Adjuster Model 2000	71008879	20	1,500.00	30,000.00
7	Brake Block Low Friction Blue	68017197	480	50.00	24,000.00
8	Brake Shaft Assembly	UTH932A028	96	1,116.00	11,136.00
9	Brake Shaft Bracket	UTH932A030	100	107.00	10,700.00
10	Coupler S-Type	68028911	8	2,500.00	20,000.00
11	Knuckle	68006223	48	400.00	19,200.00
12	Yoke Key	68028871	24	123.40	2,961.60
13	Cotter Pins	101864	200	0.20	40.00
14	Waster	68055047	20	24.56	491.20
15	Pin	68044057	20	12.50	250.00
16	Locking Plate	68047001	20	6.50	130.00
17	Brake Beam	368200734	120	259.00	56,000.00
				Total:	427,708.80
				Add 30% To get 2012 Unit Price	<u>128,312.64</u>
				GRAND TOTAL	550,021.44

^o Based on 2009 Unit Prices obtained from Holdtrade (UK) Ltd



COMPTON
INTERNATIONAL
de Matériel

DIVISION DÉTAILLÉE



LES APPAREILS
FERROVIAIRES

00110



FOLLOWING ITEMS HAVE INVALID OR INCOMPLETED EMD PART NUMBERS, WE WILL NEED GRCL TO REVIEW THE P/N AND/OR GIVE MORE TECHNICAL DETAILS (BATTERIES):
ITEMS 17, 18, 24, 25, 27, 32, 40, 67, 97, 107,

FOLLOWING ITEMS ARE NOT MANUFACTURED BY EMD BUT WE WILL TRY TO OFFER THEM FROM OTHER SOURCES, BUT WE WOULD WELCOME ADDITIONAL TECHNICAL DETAILS TO HELP US SOURCING THEM:
ITEMS 70-72, 95, 123-126.

The General Manager