CHAPTER VIII
RUNNING AND MAINTENANCE OF MACHINERY

8.1 The entire machinery and equipment of the Corporation pertaining to construction works of buildings, roads and bridges including tippers and trucks will be in the charge of the mechanical unit at the head office, headed by a Resident Engineer (Mechanical). In addition to the work of purchase, running and maintenance of construction machinery and equipment, the RE (Mechanical) will also be responsible for purchase running and maintenance of office vehicles (cars, jeeps, etc.) located at the headquarters. The R&M includes upkeep of logbooks of these machinery and vehicles, periodical and urgent repairs, etc.

8.2 The ownership record of all the machinery and equipment, old and new will be kept in the Equipment Register. It will contain basic data about the machine/equipment/vehicle regarding its make, purchase cost, economic life in years/hours, details of spare parts received with the machine and expenditure incurred on major repairs, replacement of tyres, depreciation charged, etc., from time to time.

8.3 Running and maintenance estimate of each machinery, equipment and vehicle will be prepared by Mechanical Unit every year before commencement of the financial year to account for expenditure on operation and return from out turn. The direct operating charges on a machine including repairs, cost of spares, etc., will be debited to the estimate while the value of out turn in the form of hourly or daily or unit rate or per kilometre rate charged will be credited to the estimate. However, in the case of office vehicles there will be no out turn.

8.4 Record of issue of logbooks for each machine, equipment or vehicle will be kept in a logbook register and through this a watch on proper use and return of the logbooks for preparation of debit/credit notes or for record will be kept. The logbooks shall be checked to watch that:

(i) the monthly abstract of use of the machinery on various works/purposes has been correctly prepared and the amount to be charged from various users has been clearly shown;
(ii) the rate of consumption of POL is within the norms of standard consumptions;
(iii) all parts of the logbook have been properly filled-in and signed by the authorised user;
(iv) entries of POL, minor and major repairs with spares have been made in it;
(v) issue of the machinery to the contractors has been distinctly shown so that rates prescribed for outside users may be charged.

8.5 Each year, hourly/unit rate of each construction machine to be charged to the work and to the contractors/outside parties will be worked out and fixed before commencement of the financial year in accordance with the guidelines given by the Ministry of Surface Transport, Government of India and the economic life recommended by them for various types of machinery. A model work sheet for

computation of unit rate of hire charge is given at Annexure-VIII A. The unit rate should be within the market rate of similar type of machine. Economic life for various types of machinery recommended by Ministry of Surface Transport, Government of India, vide their letter No. RW-24011/5/93-R&P dated December 30, 1993 is given at Annexure VIII B. A list of various types of machinery, equipment and vehicles being maintained presently by the Mechanical Unit is given at Annexure VIII C. It includes hot mix plants, paver finishers, vibratory compactors, road roller, DG sets, trucks, tippers, jeeps, cars, etc. The present rates of hire charges of machinery of the Corporation is given at Annexure VIII D.

8.6 Every month the logbook of each machine duly filled-in and signed by competent authorities of Construction Units will be sent to the RE (Mechanical) for checking and raising of debit notes. A set of two logbooks for a machine for use in alternate months may be kept to avoid delay in raising of bills. The engineer-in-charge of the machine will make out an abstract of use of the machine during the month giving the names of works, hours or units of use, transportation charges, rate per unit of use (hour, kilometre, ton) and the total amount to be charged. The Accountant/AAO of Mechanical Unit will check the entries of the logbook, monthly abstract and get prepared a debit/credit note to be sent to each user RE of Construction Unit or to the contractor or other user.

8.7 The Auditor, Accountant/AAO and RE (Mechanical) will sign the debit notes alongwith the bills and will forward them to the concerned RE's of Construction Units alongwith extract copy of the logbook. In the accounts of Mechanical Unit the respective users' accounts will be debited and the M&R estimate of the machine (hire charges) will be credited. The direct charges like cost of POL, Salary/Wages of operators, minor repairs, etc. will also be debited to the M&R estimate of the machine. The formats of bill, debit note and forwarding letter is given at Annexure VIII-E.

8.8 The construction division on receipt of the debit note will check the demand with respect to the copy of logbook, site record and sign the counterfoil of the debit note and send it back to the RE (Mechanical) alongwith cheque/DD debiting the work concerned within 15 days of receipt of the debit note. If there is a discrepancy in the debit note and actual use of machine hours/units or rate, the cheque/DD for accepted amount shall be sent and for the remaining amount clarification note will be sent by the RE of the Construction Unit. Any expenditure incurred by the Construction Unit on the R&M and POL of the machine will be deducted from the bill.

8.9 Minor repairs, special repairs, replacement of tyres/spare parts of machinery will be done at the central workshop at the Head Office, debiting the M&R estimate of the machine. However, emergent repairs may be got done at the site of work by the Construction Unit in consultation with RE (Mechanical) debiting the expenditure to the account of RE (Mechanical). Periodic repairs, major repairs of office cars and jeeps may be got done at the central workshop, if the facility exists or

at authorised dealers' workshops. Minor repairs of these vehicles may be got done at the central workshop or at the local market upto Rs. 2,000/- in each case. The office vehicles located at places outside Jaipur may be got repaired at authorised dealer's workshop at the respective place except minor repairs costing upto Rs. 2,000/- at a time which may be got done at local market. Spare parts used in repairs shall, however, be purchased always from the authorised dealer or equipment manufacturer or sole distributor as per purchase rules.

8.10 Every year, the month-wise utilisation of each construction machine/equipment will be compiled by the Mechanical Unit and it will be compared with the annual utilisation norms and a report in this regard will be submitted to the MD by RE (Mechanical) with comments of SE, GM/CPM and CAO for directions for further course of action.

8.11 The machine which is not being used upto the normal utilisation units (hours/km/ton) in a year should be reviewed to find reasons of under-utilisation. If it is due to its obsolescence or oldness or surplus nature, it should be considered for disposal. The Corporation should not run a machine which causes loss to it, being a commercial organisation.

8.12 Every year a survey report of the unserviceable/obsolete machinery will be prepared by Mechanical Unit for orders of MD for their disposal. The operating staff rendered surplus due to disposal of machinery should be dealt with in accordance with personnel policy of the Corporation and general guidelines given by the Government in this regard.

Annexure VIII-A

RAJASTHAN STATE ROAD DEVELOPMENT & CONSTRUCTION CORPORATION LTD, JAIPUR

NAME OF EQUIPMENTS:

1. FOR EQUIPMENT USED DEPARTMENTALLY

(I)	Ownership charges:			
(a)	Total investment at site of work (this includes A/T cost, sales tax, excise, custom and other duties, transport expenses consisting of freight (by ocean & rail) insurance loading/unloading charges and erection and commissioning on receipt)			Rs……
(b)	Deduct salvage value@15 percent of A			Rs……
(c)	Total investment to be depreciated = A-B			Rs……
(d)	Economic life of the machine in hours as per appendix 7.II (as per Ministry norms, it is 9000 Hrs.)		Hrs.	Rs……
(e)	Depreciation per hour [C/D]			Rs……
(f)	Storage charges per hour (1 percent of "c" spread over the economic life) = 0.01x (C) / (D)			
	Total ownership charges = (E)+ (F)			Rs……I
II	Operational Charges			
	Repair charges per hour including maintenance and replacement of tyres (150 percent of "C" spread over economic life = 1.5xC/D			Rs……II
III	Overhead Charges:			
	@ 5 percent of ownership and operational charges = 5(1+II)/100			
	Ownership charges per hours			
	Operational Charges per hours		=	Rs. ……III
	Overhead charges per hours		=	Rs……..
IV	Running Charges:			
	Operating staff/labour & wages: No. Wages/month			
	Designation			
	(i) Operatior			
	(ii) Helper			
	(iii) Cleaners			
	(iv) Misc. Expenses (Welder)			
	(v) TA. Etc.	Total	=	Rs. ……..
(H)	Wages Per hour Total Wages per monthx12 / Annual working hours		=	Rs. ……..
	(See note d)			
(J)	Servicing charges: No. Expenditure/Month			
	Designation			
	(i) Machine			
	(ii) Cleaners			
	(iii) POL	Total	=	Rs……..

(J) Servicing Chages: Fuel Lubricants, etc.

Consumption/hr.	Rate/Litre	Cost/hr.
(i) Fuel		
(ii) Lubricants		
(iii) Grease		
(iv) Hyd. Oil		
(v) Gear Oil, Cotton waste, etc.		
Furnace oil etc. (in case of Hot mix plant, etc.)	Total	Rs……

K Cost of Lub. Oil, Fuel etc. hr.

L Total Running charges per hour = H + J + K

V. Overhead charges @ 5 percent of the total charges per hour = 5 x L/100 = Rs……

Summing up:

Ownership charges = I =

Operational Charges = II =

Overhead of I and II = III =

Running charges (as in 5) = IV =

Overhead charges on IV = V =

Hire charges per hour= I+II+III+IV+V

2. <u>For equipment given to contractors & outside agencies:</u>

When the machines are issued to contractors interest and insurance charges @ 10 percent of average investment per year will be calculated as under and added

$$+\ \frac{A}{1500}\ \frac{60^*}{100}\ \frac{10}{100}$$

* one- 5 years life

Annexure-VIII- B

Economic Life of Raod/Bridge Construction Equipment

S.N.	Name of Machine	Years	Km./hrs.
I.	Bittumenous Construction Equipment		
1.	Hot Mix Plant (Below 20 TPH)	12	9000 hrs.
2.	Hot Mix Plants (Above 20 TPH)	12	9000 hrs.
3.	Drum Mix Plants	12	9000 hrs.
4.	Paver Finisher	15	9000 hrs.
5.	Bitument Boilesrs	10	---
6.	Bitumen Pressure Distributor/ Bitument Transportaion Tanker	12	9000 hrs.
7	Bitumen Storage Tank	10	----
8.	Asphalt Mixer	12	8000 hrs.
9.	Front End Loader (Wheeler)	15	9000 hrs.
10.	Tippers	12	2,40,000 km.
11.	Chip Spreadoer	10	---
II.	Heaver Earth Moving Equipment		
1.	Dozer Wheeled	15	9000 hrs.
2.	Dozer Creqler	15	9000 hrs.
3.	Motorised scraper/ Towed screper	15	9000 hrs.
4.	Motor Grader	15	9000 hrs.
5.	Excavator upto 1 cum	12	10000 hrs.
6.	Mobile Crane	15	8000 hrs.
7.	Cumper (All size)	12	1000 hrs.
8.	Tractor (Wheeled)	12	1000 hrs.
9.	Grab Dredging Cranes	12	9000 hrs.
III	COMPACTION EQUITPMENT		
1.	Road Roller 8-10T	15	12000 hrs.
2.	Sheep foot Roller	15	---
3.	Vibratory Rollers upto 2 tons WT	10	---
4.	Vibratory Rollers above 2 tons WT	12	10000 hrs.
5.	Tandem Vibratory Roller 8-10T	12	10000 hrs.
6.	Pneumatic Tyred Rollers	12	10000 hrs.
IV 1.	**BRIDGE CONSTRUCTION EQUIPMENT** Bridge Inspection Unit (a) Bucket Type (b) Platform Type	 15 18	 --- ---
2.	Power Winch	15	8000 hrs.
3.	Concrete Mixer	06	---
4	Pile Driving Set	12	8000 hrs.
5.	Diamond Core Drill Pm/C	12	8000 hrs,
6.	Vibrators (all types	05	---
7.	Air Compressor	12	9000 hrs.
8.	Pumping set Diesel (upto 10 HP)	08	---

9.	Pumping Set Diesel (Above 10 HP)	12	10000 hrs.
10.	Winch Bridges	12	---
V.	**GENERAL PURPOSE**		
1.	Truck	12	2,40,000 km.
2.	Stone Crusher/Granulator (Electrical)	15	12000 hrs.
3.	Stone Crusher/Granulator (Diesel)	12	10000 hrs.
4.	Generator Set	12	10000 hrs.
5.	Diesel Welding Set	15	10000 hrs.
6.	Jeep/Car/Station Wagon/Mini Bus	10	2,00,000 kms.
7.	Ferry/Boate- Steel	15	---
	Wooden	10	---
8.	Kerb Laying Machine	12	---
9.	Concrete Transit Mixer	12	10000 hrs.
10.	Concrete Pump	10	---
11.	Concrete Batching & Mixing Plant	15	12000 hrs.
12.	Concrete Paving Equipment	15	12000 hrs.
13.	Stone Crushing & Screening Unit	10	10000 hrs.
14	Snow Cutter/Plougher	20	---

Annexure VIII-C

POSITION OF MACHINES/VEHICLES AS ON DATED 30.6.2006

S.N.	Name of Machines	Number
1	Hot Mix Plant	05 (1 acutioned)
2	Paver Finishers (Mechanical)	08
3	Sensor Paver Finisher	01
4	Concrete Batch Mix Plant	01
5	Transit Mixer	01
6	Wet Mix Plant	01
7	Vibratory Compactor Tandon Type W-752	01
8	Vibratory Earth Compactor Dynapac	01
9	Diesel Road Rollers 8-10T	02
10	JCB Excavator Loader	01
11	Tata Excavator (Crane)	03
12	Bitumen pressure Distributor	01
13	Tractors	03
14	Vacuum Dewatering Systems	04
15	DG Sets Diff Range (7.5 to 125 KVA	22
16	Trailor (Long Bed)	02
17	Trucks	04
18	Tippers	21
19	Jeeps	05 (1 auctioned)
20	Ambassador Car	02
21	Indica Carq	02
22	Santro Car	01
23	Esteem Car	02
24	Bolero Jeep	03

Annexure VIII-D

HIRE CHARGES RATES OF CORPORATION MACHINES EFFECTIVE FROM 1.4.1997 ONWARDS

S.N	Machine	Rates for Corporation (Rupees)	For contractor (Rupees)	Unit
1.	Vibratory Compactor (Soil)	470	490	Per Hours
2.	Diamond Core Drilling Machine	170	220	Per Hour
3.	Power Winch	30	35	Per Hour
4.	Builders Hist.	70 5750	80 6720	Per Hour Per Month
5.	Well Point Dewatering Pump Set	105	130	Per Month
6.	JCB Excavator Loader	400	480	Per Hour
7.	DG Set 7.5 to 10 KVA	40	45	Per Hour
8.	DG Set 18 .75 KVA	60	65	Per Hour
9.	DG Set 25 KVA	90	100	Per Hour
10.	DG Set 62.5 KVA	185	200	Per Hour
11.	DG Set 100 KVA	220	250	Per Hour
12.	DG Set 125 KVA	250	300	Per Hour
13.	Sensor Power	1315	--	Per Hour
14.	Vibratory Compactor Steel/Wheel) Vibromax (L & T)	780	--	Per Hour
15.	Tipper Trucks	740 Or	--	Per Day
	Without Pol	7.60 P		Per Km.
	With Pol	860 Or Rs.		Per Km.
16.	Millar 15 Cu.m/Hour -Concrete Batching Plant	320	495	Per Hours
	-Without Electric Charges	275	455	Per Hour
17.	Drum Mix HKP (40-60 TPH) - With Electric Charges	2810	3315	Per Hour
	- Without Electric Charges	1040	1515	Per Hour
18.	Bitumen Pressure Distributor	390	---	Per Hour
19.	Diesel Power Winch	110	130	Per Hour
20.	TATA Crane Model 320 18 Mt. Capacity	450	650	Per Hour
21	TATA Crane Model 655 36 MT Capacity	550	700	Per Hour
22	Air Compressor 300 CFM.	110	140	Per Hour
23.	Air Compressor 400 CFM	155	205	Per Hour
24.	Stone Crusher	95	120	Per Hour
25.	Hindustan Tractor 50 HP	65	75	Per Hour
26	Concrete Mixer 10/7 CFT.	50	55	Per Hour
27.	Apollo HMP (20-30 TPH)			

	With POL	2530	--	Per Hour
	Without POL	610	--	Per Hour
28.	Concrete Mixer 14/10 CFT	55	70	Per Hour
29.	Winch With HMP (Grit Pushing)	0.00	--	Per Tonne
30.	Transit Mixer Millar With POL	630	--	Per Hour
31.	Beaver Trailor With POL	2420	--	Per Day
32.	Vacuum Dewatering System	8800	--	Per Month
33.	Vibratory Roller 1 to 2 Tonnes	5225	--	Per month
34.	SU Dewatering Pumps	3000	--	Per Month
35.	Hilti Core Cutting Machine	12000	--	Per Month
36.	Diesel Road Roller 8-10 Tonne	80	180	Per Hour
37.	Mastic Cooker	120	135	Per Hour
38.	Hot Mix Plant (40-60 TPH) with allied equipment on 1 MT production Basis	120	135	Per Hour
(i)	Mix Material at Plant Site	78	--	Per Metric Tonne
(ii)	Mix Material with Transportation within Municipal limits	123	---	---
(iii)	Mix Material with Transportation Conventional Power-Roller within Municipal Limits	152	--	--
(iv)	Mix Material with transportation Sensor Power-Vibromax within Municipal Limits	177	--	--

(For Outside Municipal Limits Rs. 10/- or more according to distance may be charged per tonne more as the case may be)

Resident Engineer
Mech_I
RSRDC., Jaipur

Phones: 0141-2711162 (o) Telefax : 0141-2711178

Rajasthan State Road Development Construction Corporation Ltd.,
(Formerly RSBCC Ltd.)
(A Government of Rajasthan Undertaking)
Reg Office: Setu Bhavan, Jhalana Doongari Jaipur Agra By-Pass Road, Jaipur
(Mechanical Unit)

A-5 (M)/Hire Charges/1247-51 Dated 7.1.2006

Office Order

The hire charges of Hot Mix Plant & allied Machinery for Mixing the material, transportaion & Compaction are as follows:

1. Hire Charges of HMP & Allied machines : Rs. 299/pmt.

The above rates are fixed with the following conditions:

(i) These rates are valied for a lead of 25 km. Only. IF the lead increased, the POL component of transportation charges will be charged extra.
(ii) If the rates of LDO & HSD increases, POL component of hire charges will be charged accordingly.
(iii) The shifting charges, transportation charges, erection & Commissioining charges, loading & unloading charges of HMP etc will be charged extra.
(iv) All civil works for erection purpose will be carried out by civil wing ald also to be borne by concrened civil unit.
(v) Feeding aggregates, laying of mix material will be charged extra as per actuals.
(vi) Hire charges of miscelleneous machies like 7.5 KVA DG set for lighting, JCB for other activites will be charged as per norms.
(vii) For any other miscelleneous activity, the hire charges will be extra.

This bears approval of Managing Director

RESIDENT ENGINEER (Mech.)

Copy to:
1. SE-I, RSRDC Ltd., Jaipur
2. SE, RSRDCC, Ltd., Jaipur
3. Resident Engineer, RSRDC, Ltd., Unit Hanumangarh
4. Shri M.L. Arora, A.En. (Mech.) RSRDCC, Ltd., Jaipur
5. Accountant (Mech) RSRDCC., Jaipur

Resident Engineer (Mech.)

Annexure VIII-E

Phones: 0141-2711162 (o)
Telefax : 0141-2711178

Rajasthan State Road Development Construction Corporation Ltd.
(Formerly RSBCC Ltd.)
(A Government of Rajasthan Undertaking)
Reg Office: Setu Bhavan, Jhalana Doongari Jaipur Agra By-Pass Road, Jaipur
(Mechanical Unit)

A-5 (M)/Accounts Dated 7.1.2006

To,
The Resident Engineer
RSRDCC Ltd.,
Jaipur

Sub: Debit Note

Sir,

Please Find enclosed herewith the debit note No. ……for Rs…… towards the hire charges bill of corporation machinery utilised at your work site and material issue to your work site. You are therefore, requested to please accept the same and send the payment by Cheque/DD at the earliest.

Thanking you,

Yours faithfully,

Resident Engineer (Mech.)

RAJASTHAN STATE BRIDGE & CONSTRUCTION CORPORATION LTD.
(a Government of Rajasthan Undertaking)

Debit/Credit Note

No.

Resident Engineer
Unit…….

Reference of Log Book No./CV No.	Details of Debit/Credit Claims	Total use in no. of units	Rate Per Unit	Amount

Prepared by Checked by Total

Auditor Accountant AAO Resident Engineer
RSRDCC, Ltd.

DEBIT/CREDIT NOTE

No…….

Returned to H.O. with remarks that the Debit/Credit note has been
Accepted subject to following deficiencies

ACCOUNTANT/R.E.
UNIT----------

Bill No…….

OPERATIONAL DETAILS OF CORPORATION MACHINERY UNDER RESIDENT ENGINEER

S.N.	Name of Machinery	Corporation Serial No.	Operational Hours	Hourly Rate	Amount

(Rs…….. Only)

AAO (Mech.) Resident Engineer (Mech.)

Debit Note No:.