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OPERATION MILS MOPTI
HISTORY OF COSTS AND EXPENDITURES

IQC Contract No. PDC-1406-I-03-4090-00
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Submitted By:

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OPERATION MILS MOPTI
HISTORY OF COSTS AND EXPENDITURES

I. INTRODUCTION

A. Background

Opération Mils Mopti was created by the Government of Mali (GRM) in 1972 to stimulate the production of millet and sorghum in the Fifth (Mopti) Region of Mali. Initial financing included the grant of local currency funds generated under U.S. Public Law 480.

In February 1976, AID authorized a grant to Opération Mils Mopti (OMM) which was expected to provide approximately $6 million to the project over three years. The project agreement, signed in June 1976, provided retroactive financing for expenses incurred by OMM after January 1, 1976. Subsequently, a Phase II of the project was financed under an agreement signed in April 1980. There were minor planning differences between the two phases but the financial arrangements were essentially identical. The GRM agreed to pay the salaries of personnel on the national and regional civil service payrolls who were assigned to the project. The other expenses of OMM were financed by AID through a reimbursement process. OMM was required to submit annual budgets to USAID for approval. Supposedly staying within the approved budget, OMM made expenditures from a rotating fund nourished by advances and reimbursements. USAID reimbursed, upon OMM's request, a variety of expenditures including: initial capital for credit programs, infrastructure, equipment, general operating expenses and personnel costs not covered by the GRM national and regional payrolls.

Not all OMM costs were financed by the reimbursement method, however. USAID procured directly, from abroad, such items as vehicles and heavy road-building equipment. It made some local procurement of imported items such as grain grinding mills. It imported blacksmith tools to be provided on credit.

Starting in about 1981, serious problems in the financial management of the project became manifest. Early in 1982, an evaluation report recommended

substantial technical assistance in financial management. The technical assistance was too little and too late. After first suspending reimbursements for several months, AID in October 1982 notified the GRM that financial assistance to the project had been terminated.

In the latter part of 1982, an audit was conducted by AID. The results were published in March 1983; a French language version of the audit was transmitted to the GRM, through the Ministry of Agriculture, in August 1983. The audit report made four recommendations, three of which are of concern to this report. USAID/Mali was advised to seek repayment from the GRM of 354,888,427 Malian francs representing disbursements by AID for seed capital for the agricultural credit program. Similarly, USAID/Mali was advised to seek repayment of 48,925,020 Malian francs disbursed to the mobylette credit fund. In both cases the recommendations were based on a finding that credit funds had been diverted, in violation of the Project Agreement, and used to pay OMM operating expenses.

The other recommendation was that USAID should seek a full accounting for all project funds. If that accounting were not provided within nine months, then USAID should seek repayment of the 2,181,595,851 Malian francs disbursed to pay the costs of the project. The reason for this recommendation was that OMM, and hence the GRM, had not provided adequate accounting information to justify the reimbursement of costs paid by USAID.

Since August 1983, the GRM, through the Ministry of Agriculture, and the USG, specifically USAID/Mali, have been discussing these audit recommendations. The discussions have not been fruitful and the study team had been advised that the differences between the two parties have disturbed their relationship and even threatened the orderly execution of other projects for rural development on which they are cooperating.

In recognition of their problem, the two governments called upon a team, the authors of this report, to study the operational and financial history of Operation Mils Mipti and to develop a base of information, acceptable to both parties, that can be used in discussions leading to an agreed response to the audit recommendations. The team was instructed to determine the justifiable

costs of the project in its various components: credit, operating costs, equipment, infrastructure, etc. Justifiable cost was explained to the team as having two elements: the activity financed was part of the project as described in the Project Paper; unit costs were reasonable based on market prices at the time, in so far as those market prices could be determined.

B. Description of Study Team Activity

The team organized to carry out this study consisted of five persons: Parke D. Massey, Chief of Party and Management and Procurement Specialist; Seydou Kansaye, Chief Inspector of Economic Services, Ministry of Agriculture; John Barton, Engineer; Bocary Kasse, Accountant and Controller, Ministry of Agriculture; and Charles Wilding-White, Financial Management Advisor. The three U.S. members of the team were provided under a contract with Development Associates, Inc., of Arlington, Virginia.

The team divided up its research into manageable elements, giving priority to those activities which involved major project expenditures. In the first review, Massey took the credit programs; Kansaye, furniture and equipment; Wilding-White, motor vehicle purchases, maintenance and operations and other POL uses; Barton reviewed the buildings, roads and well digging programs; and Kasse reviewed all personnel costs. The method of research was document search and review, concentrating on original documents at the project site, interviews with persons connected with the project, some site visits by the engineer and a constant interchange of information and views among the team members. Chief Inspector Kansaye is very familiar with the project and with project documents. Thus, he acted as the team's research guide and director.

The team met in Bamako from October 22 to October 31, 1984. During this period, documents available at USAID/Mali were identified, reviewed and organized for further research. Discussions of the assignment were held with representatives of the Ministry of Agriculture and USAID. A work schedule was prepared and agreed to. On November 1, the team moved to the project site, OMM headquarters in Sévaré/Mopti. Research was conducted in that region from November 2 to December 7, 1984. On December 6, the team gave an oral report on

its findings, up to that date, to representatives of USAID, the Ministry of Agriculture and the management of OMM in a joint meeting at the Opération.

During the week of December 10, the team worked in Bamako preparing part of this report. A second oral report was made to the Ministry of Agriculture and the USAID Mission Director.

During January and February 1985 the team members from Development Associates, Inc., returned to Bamako. M. Kassé was otherwise committed but was available for occasional consultation. Chief Inspector Kansaye rejoined the team and returned to Mopti with Barton and Massey. Wilding-White remained in Bamako researching USAID procurement and other costs. During this period research was completed and the sections on road construction costs, procurement costs, research costs, in-house training and the marketing program were drafted. The field work was completed by February 15 and final editing was done in Washington during the last weeks of February.

C. Summary Conclusions

The team has established a total cost to the OMM project budget for agricultural credit of 850 million Malian francs. Seed capital provided for this program was 354 million francs. The capital turnover ratio for this program was 2.39:1. The adjusted cost of goods sold under the mobylette credit program was 263 million francs. USAID supplied seed capital of 49 million. The rollover ratio was 5.38:1.

The team has calculated the total justified cost to the OMM budget of the project. In most cases justified costs are actual costs established by review of original operating and financial documents. These are the costs that were subject to reimbursement by USAID from project funds in accordance with project agreements and ancillary documents. They include both operating and capital expenses. Shown as a separate item are the seed capital costs of the credit program and total purchases for the credit fund. Seed capital plus rollovers are shown in the section on credit programs. In two cases, costs were calculated for a program, but it was found that these costs were already reported elsewhere. To avoid any double counting these costs are shown as "not

separately identified" in Table 1 below. The team has not been able to determine the cost to the government of the Republic of Mali (GRM) of personnel assigned to the project and paid on national and regional payrolls.

SUMMARY TABLE 1

Justified OMM Costs

1976 - 1982 Malian Francs (000)

Credit Program	438,408
Operating and Capital Costs	654,091
Personnel Support Program	576,152
In-House Training Program	n.s.i*
Blacksmith Training Program	n.s.i
Well Digging Program	77,597
Research Program	342
Farmer Organization Program	- 0 -
Infrastructure Program	696,201
Buildings	180,721
Roads	515,480
Administrative Support	1,353,028
Vehicles and Generators (operating)	1,004,584
Other Admin. Costs	244,444
Office Supplies	104,000
Procurement Program	110,514
Vehicles (net)	23,211
Other	87,303
Total Operating and Capital Costs	2,813,834
Grand Total Credit plus Costs	3,252,242

*n.s.i. = not specifically identified

The team has also calculated OMM's loss on grain marketing operations carried out for l'Office des Produits Agricoles du Mali (OPAM), a requirement of the terms of reference. This loss was at least 113 million Malian francs. Since all costs associated with this program are not available or calculable, the actual loss may have been considerably higher.

To complete the financial picture and to respond in part to item 11 of the Statement of Work, the team has prepared Table 2 (on the following page) which sets forth all Opération Mils Mopti project expenditures, Phase I and Phase II up to December 31, 1984. The Operating Costs (OMM) figure represents project local cost reimbursements and agrees with the total for this item shown in Exhibit E of the audit report, plus $100,000 disbursed after June 31, 1982.

SUMMARY TABLE 2

Opération Mils Mopti - No. 688-0202

Project Expenditures to Dec. 31, 1984

Phase I: Total to 9/30/81

Budget Category	Obligations $(000)	Expended	Balance
Technical Assistance	499	499	0
Training (Participants)	42	47	(5)
Commodities	2,236	2,241	(5)
Credit Program	-	-	-
Construction	12	-	12
Operating Costs (OMM)[3]	3,396	3,502	(106)
Unearmarked	104	0	104
TOTAL	6,289	6,289	0

Phase II: Total to 12/31/84

Technical Assistance	243	424	(181)
Training (Participants)	73	35	38
Commodities	569	480	89
Credit Program	176	0	176
Construction	973	79[2]	894
Operating Costs (OMM)[3]	2,475	2,317	158
Unearmarked	120	109	11
Deobligated	(400)	-	(400)
TOTAL	4,229[1]	3,444	785
GRAND TOTAL-PHASES I AND II:	10,518	9,733	785

NOTES: 1. $4,629 was obligated in Phase II, then reduced by $400,000.

2. Cancelation charge of 67,013,717 M.F. was paid by USAID on March 7, 1984, (equivalent to $78,933 at 849 MF/$) to EGEBAT Construction Co. in Mali.

3. All reimbursements to OMM are charged to Operating Costs.

Sources: Phase I - USAID/CONT, Form U-203, Project Financial Activity Report as of September 30, 1981. Phase II - USAID/CONT, Quarterly Project Financial Status Report as of December 31, 1984.

II. COSTS OF PROJECT PROGRAMS

A. Credit Programs

1. Credit Programs and Operations

Opération Mils Mopti had six separate credit programs; three were forms of agricultural production credit: agricultural equipment and supplies for grain production, draft animals, and hand tools for market gardening on the Dogon Plateau. Two were small-business credit programs, one to supply blacksmiths with tools and working capital and the other to provide village grain mills. There was also an internal credit program which provided personnel of the Opération with bicycles, motor-bicycles and motorcycles for official and personal use. All of these programs were "in-kind"; OMM provided both the supply and the credit functions. The management and operating costs of these programs are not separately identifiable, they are included in the overall operating costs of OMM. Direct costs of goods sold on credit and for cash are fairly easily identifiable and are set forth in this section of the report. All of the programs used some sort of mark-up over direct costs to recover some part of operating costs and/or to reflect an interest rate. However, the mark-ups do not seem to have reflected a calculated cost of managing the program (bookkeeping, credit supervision, supply operations, etc.) or any estimate of the cost of credit. It is highly probable that all credit and supply programs operated at a substantial loss.

Both the mobylette and the agricultural credit programs were set up as revolving funds with seed capital provided by USAID. Receipts from cash and credit sales were supposed to be maintained in separate accounts and used only for re-supply purchases. Actually, the funds were de-capitalized and used to defray operating expenses not reimbursed by USAID or for which reimbursement was delayed or deferred. Nevertheless, the funds were used as rollover accounts and, since these accounts were the subject of findings and recommendations in the audit report, we have calculated a rollover ratio for

both of them. This ratio is derived by dividing the total cost of goods sold, cash or credit, by the amount of seed capital provided originally by USAID.

a. Agricultural Equipment and Supplies

This program is designed to supply, for cash or on credit, agricultural equipment (plows, carts, seeders, cultivators) and supplies (pesticides, fertilizer) to Fifth Region millet and sorghum growers. In order to establish the direct costs of this credit, we have determined from regional and sector records, cross-checking where possible, the amounts of equipment and supplies sold by item, by crop year, for the period covered in the report. We have applied the established prices for each crop year for the items sold to determine total costs by year and item. The prices were listed by the Société de Crédit Agricole et d'Equipment Rurale (SCAER) the Malian state monopoly which, until 1980, imported and distributed all agricultural machinery and most agricultural chemicals provided to Malian farmers. Since no inventory of goods on hand was taken at the start of the 1976/77 crop year and no closing inventory at the end of 1982, we have used the inventory accounting principle of "last in, first out," i.e., replacement cost equals cost of goods. We continued to apply this principle after SCAER was replaced as supplier by other state agencies, SMECMA, CMDT and OPSR.

The scope of work for this study asks the team to establish, in effect, shadow prices for agricultural equipment and inputs sold by OMM. We have been asked to compare prices paid by OMM with prices available in other markets. For this period there were no other prices to compare. OMM's source of supply was a government monopoly selling at subsidized prices. The subsidy was drastically reduced after 1976 and theoretically eliminated as a direct subsidy after 1980. But, since no full cost accounting system was ever used, some subsidy always existed and hence excluded private entrepreneurs from the market. One could construct a set of shadow prices by determining, year by year, export prices in

various markets for identical or similar goods. One could then add transport costs, working capital costs, warehousing, uninsured losses, internal transport, warehousing and management overhead, to arrive at a point of sale to farmer cost. Assuming exemption from all duties and customs charges, the cost, and hence price to farmer, would certainly be higher than that charged. This difference would represent the effective subsidy to the credit program from the GRM and hence a hidden cost or project contribution. To establish this hidden cost would be interesting but hardly worth the investment in time, personnel and money. We only wanted to draw the attention of the readers of this report to the fact that such a cost existed.

The total cost of agricultural equipment sold we have estimated at 699,733,820 MF and the cost of supplies at 164,796,515 MF. This total cost should be reduced by an estimated 20,236,000 francs representing the rebate of 5% on agricultural equipment sales paid by SCAER to OMM and designed to cover distribution costs, at least in part. Add to this the cost of draft animals sold on credit, 5,580,000 MF, and one arrives at a total cost of goods estimated at 850 million francs. With the USAID seed capital contribution fixed at 355 million francs, the roll-over ratio was 2.39:1.

b. Draft Animal Credit

As previously contemplated in project documents, in August 1980 two villages in the Mopti sector were chosen to receive 62 draft animals, oxen, on credit. With the assistance of ODEM, the Malian animal husbandry agency, the animals were purchased at a cost of 90,000 MF each. ODEM provided veterinary services including inoculations at no cost. Training costs and all credit management costs were absorbed in OMM's operating costs. Some farmers were reported to have complained that the animals were overpriced but on the other hand all were sold without difficulty. The justified cost for this program was 5,580,000 MF.

c. Flour Mill Credit

Included in Phase II project planning was a proposal to place up to 100 small grain mills in selected villages in order to reduce the burden upon village women in the preparation of flour and also to provide income to OMM which would operate the mills as a commercial venture with part-time hired labor. A mill with its diesel motor was purchased in 1979 and placed with a village blacksmith to test the idea's commercial prospects. By 1982, the idea had been proven impractical but twelve more mills and motors had been bought. These were later sold, on credit, to various individuals. The first mill was apparently purchased by OMM. The other twelve were purchased from local suppliers by USAID through purchase orders. The market price in 1979 of a mill, with motor and drive belt, was about 990,000 MF and that is the amount which the team feels is a justified cost for this credit program component.

d. Mobylette Credit

The mobylette credit program was directed at OMM's own employees. The Operation wished to provide its employees, especially field personnel, with a means of low-cost transport. It bought small motor-bikes in substantial quantities for cash and sold them to its employees on credit. Payments were spread out over 18 to 20 months, with no down payment. The employee using his mobylette for official duties received a fuel allowance. A few motorbikes were not sold on credit but placed as service vehicles within OMM. This was also true of several bicycles and at least one motorcycle. These were very minor exceptions which do not affect the justified cost aspect of the program and hardly affect the credit aspect.

Procurement was standardized on a 49cc, two stroke moped, assembled in Mali, easily serviced, with local spare part availability. The little vehicle had a useful life of at least two years. Having paid off his debt, the employee could sell his old bike and buy a new one on credit. This was very much the norm and part of the original intent of the program.

The Project Paper contemplated the procurement with U.S. funds of just over 200 mobylettes. The Project Agreement provided that all receipts from the sale of mobylettes would be placed in a segregated account and used only for the purchase of replacement vehicles. Careful accounts were kept of all motorbikes purchased and of all repayments made by employees. Although the mobylette funds were comingled with OMM operating account funds, the project purpose, to set up a revolving fund, was achieved. The initial stock had all been purchased by mid-1978; as of July 1978, 275 motorbikes had been purchased at a cost of about 55 million MF, of which USAID reimbursed 48,925,020 MF or the cost of approximately 195 mobylettes.

In addition to the mobylettes, OMM also provided its employees with 10 motorcycles and 42 bicycles. The total cost of bicycles was 3,197,850 MF; the motorcycles cost 6,010,000 MF. This raises the total cost of the motorbike, motorcycle and bicycle program to 282,547,975 MF. The roll-over ratio, total purchases to USAID provided seed capital, was 5.75:1. The team has noted the audit report statement concerning unjustifiably high prices paid by OMM for motorbikes. We compared prices paid by OMM to two suppliers from July 1980 to April 1981, with prices paid for identical machines by another Operation to a large well-established supplier. The OMM purchases were at much higher prices, net, FOB Bamako. We have recalculated total direct costs and the roll-over ratio to reflect the lower price. The seed capital contribution from AID remains unchanged; all USAID disbursements were made two years earlier. The adjusted total direct cost of the program would have been 263,027,675 MF. The roll-over ratio becomes 5.38:1.

e. Market Gardening Tools

The Project Paper for OMM Phase II, July 12, 1979, proposed the addition of tools for Dogon plateau market gardening to the supply and credit programs of OMM. This decision had been already implemented with the purchase, early in 1979, of an inventory of handtools, picks, shovels, hoes, sprinkler cans, etc. The items were of French manufacture imported by SOMEA, a private company. On March 14, 1979, the Sector Chief in

Bandiagara was advised by OMM of the prices to be charged for each item. Sprinkler cans, wheelbarrows and sledges were to be sold on one year credit, hoes, shovels, picks and rakes were to be sold for cash. All sales prices were marked up 12% over cost to OMM. This program represented a major mistake in judgment. The Dogon peasant had available adequate home-made or village-made tools at minimum prices; there was no market for the new, very expensive tools and they were sold in very small quantities. By the end of 1982, only about 4% of the original cost of the inventory had been recovered by sales.

We have tried to assess the cost of this error to the project. To do so we have taken the cost of the original inventory and deducted the estimated market value of the theoretical stock on hand as of December 1982. This established a cost of sales consisting of cost of goods actually sold plus losses in value of inventory. From this we have deducted income from sales. We estimate that the loss on the program, and hence its cost to the project was 28,115,065 MF.

The valuations placed on the various items in inventory are an educated guess. Some similar items, hoe blades for example, are available in local markets. We were told in 1982, and again more recently, that the sprinkler can offered at 16,000 MF would have been marketable at 4,000 MF.

2. Description of Tables, Explanatory Notes

Table C-1, shows the quantities of equipment and supplies sold on cash and credit to participating farmers. The crop year is generally from the spring of one year to the spring of the next, with little activity in the summer months. Data were derived from sector level reports, summary annual reports and periodic reviews of the sales and credit programs. Where differences have appeared in annual reports, we have resolved them through a combination of cross-checking and inspection of original records of sales. Table C-2 shows the cost price, i.e., replacement price taken from established price lists. Table C-3 shows the resultant total cost item by item, year by year for the program from 1976-1982. The crop years selected conform to

agricultural years during the project period under review, i.e., farmers buy supplies and equipment at planting time and pay off at harvest time.

Tables C-4, C-5 and C-6 show quantities, prices, and suppliers of mobylettes, motorcycles and bicycles. The information was taken from supplier invoices and checks paid. The original documents were consulted.

Table C-7, C-8, C-9 and C-10 provide the data necessary to calculate the cost to the credit program by the losses incurred in the market gardening tools sales sub-program.

Because there was no 1982 year-end inventory, we have calculated year-end stock by deducting total sales 1979-1982 from original stock purchased. The difference between December '82 stock and December '83 represents warehouse inventory losses and is not a justifiable cost to the project budget.

3. Summary Results - Cost of Credit Programs

The table (Summary Results of Credit Program) is a tabulation of the capital costs of the supply and credit programs of Operation Mils-Mopti between 1976 and 1982. The costs shown for agricultural equipment and supplies is the amount reimbursed to the project budget by USAID and represents seed capital. Additions to inventory were, as explained above, financed by rollovers. Not included are the costs, a total of 15,412,500 MF, of 12 grinding mills which were purchased by USAID/Bamako, delivered to the project and ultimately sold on credit. While not a project budget cost, this purchase and sale had the effect of adding to credit fund assets, first as inventory, later as accounts receivable. The basic conclusion is unchanged, however.

At the end of the tabulation we repeat the rollover ratios, calculated as described above.

SUMMARY RESULTS

COST OF CREDIT PROGRAM

		(MF '000)
1.	Agricultural Equipment and Supplies Initial Inventory Cost	354,888
2.	Mobylettes, etc. Initial Inventory Cost	48,925
3.	Draft animals, grain mills	6,480
4.	Loss on Garden Tools	28,115
	Cost of Credit Programs	438,408

Notes:

Initial Inventory Costs are amounts reimbursed to the project by USAID. Additions to inventory were financed by roll-over funds.

Not included above are costs of 12 grain mills which were procured directly by USAID/Mali.

Rollover Ratio Credit Funds

Agricultural Credit

Total Cost Goods Sold, Cash & Credit	849,874	
AID Seed capital	354,888	
Rollover Ratio		2.39:1

Mobylette Credit

Adjusted Cost Goods Sold	263,028	
AID Seed Capital	48,925	
Rollover Ratio		5.38:1

TABLE C-1

AGRICULTURAL CREDIT

DISTRIBUTION OF EQUIPMENT AND PRODUCTS
BY PRODUCTION YEAR - CASH AND CREDIT SALES

	1976/77	1977/78	1978/79	1979/80	1980/81	1981/82	1982/83	Totals
I. EQUIPMENT								
TM Plow	568	498	683	793	317	338	77	3,274
Light Plow	38	-0-	-0-	183	364	119	22	726
Cultivator	-0-	-0-	-0-	-0-	201	194	541	936
T.O.M. Plow	-0-	-0-	-0-	-0-	-0-	-0-	286	268
Multicultivator	37	54	45	34	77	1	136	384
Seeder	-0-	40	35	17	27	1	83	203
Cart	550	889	1,025	1,101	1,204	478	122	5,369
II. PRODUCTS								
Ammonia Phosphate	6,185	19,100	27,732	46,050	43,380	39,100	116,720	298,267
Urea (Tons)	3,075	8,575	18,473	36,475	43,450	8,100	67,690	185,838
Fungicides (Sachets)	106,785	107,164	112,595	84,636	164,483	92,982	84,488	753,133
H.C.H. (Tons)	18,757	1,000					12,160	31,917
Telemsi Phosphate (Tons)							8,200	8,200
Cotton Complexe (Tons)							33,585	33,585

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TABLE C-2

AGRICULTURAL CREDIT 1976-1982

UNIT COSTS - EQUIPMENT AND PRODUCTS

	1976/77	1977/78	1978/79	1979/80	1980/81	1981/82	1982/83
I. EQUIPMENT							
TM Plow	45,650	47,330	52,870	52,870	52,870	60,200	60,725
Light Plow	24,000		52,800	52,800	52,800	53,300	56,260
Cultivator					52,145	52,145	53,125
TOM Plow							53,125
Multicultivator	80,000	83,000	88,795	88,795	88,795	98,760	102,325
Seeder	55,500	55,500	58,010	58,010	58,010	75,145	76,190
Cart	60,900	60,900	71,060	71,060	71,060	80,250	82,970
II. PRODUCTS							
Ammonia Phosphate	95/Kg	95/Kg	130/Kg	140/Kg	140/Kg	225/Kg	280/Kg
Urea	92/Kg	92/Kg	110/Kg	120/Kg	120/Kg	205/Kg	260/Kg
Fungicides	50/Sach..	50/S	50/S	65/S	95/S	95/S	100/S
H.C.H.	150/Kg	350/Kg					390/Kg
Telemsi Phosphate							60/Kg
Cotton Complex							275/Kg

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TABLE C-3

AGRICULTURAL CREDIT

COST OF EQUIPMENT AND PRODUCTS PROVIDED
(Haitian Francs)

	1976/77	1977/78	1978/79	1979/80	1980/81	1981/82	1982/83	TOTAL
I. EQUIPMENT								
TH Plow	25,929,000	23,570,340	361,110,210	41,925,910	16,759,790	20,347,600	4,675,825	169,318,875
Light Plow	9,120,000	-	-	9,662,400	19,219,200	6,342,700	1,237,720	45,582,020
Cultivator					8,401,145	10,116,130	28,740,625	49,337,900
T.O.H. Plow							14,237,500	14,237,500
Multicultivator	2,960,000	4,482,000	3,995,775	3,019,130	6,037,215	98,760	13,916,200	35,309,080
Seeder		2,220,000	2,030,350	986,170	1,566,270	75,145		13,201,705
Cart	33,495,000	54,140,100	72,836,500	78,237,060	85,556,240	38,359,500	10,123,340	372,746,740
Total	71,504,200	84,412,440	114,972,835	33,830,670	140,419,860	75,339,835	79,253,980	699,733,820
II. PRODUCTS								
Ammonia Phosphate								
Urea	587,575	1,014,500	3,605,160	6,447,000	6,073,200	8,979,500	32,601,600	60,006,535
Fungicide	282,900	788,900	2,032,030	4,377,000	5,214,000	1,660,500	17,599,400	31,954,730
N.C.N.	5,339,250	5,358,200	5,629,750	1,501,340	15,625,885	9,928,200	8,448,800	55,201,425
Telemsi Phosphate	2,813,550	350,000					4,742,400	7,805,950
Cotton complex							492,000	492,000
							9,235,875	492,000
Total	9,023,275	8,311,600	11,266,940	16,325,340	26,913,085	19,756,200	7,320,075	164,796,515

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TABLE C-4

MOBYLETTE CREDIT

MOBYLETTE PURCHASES 1976-1981
MALIAN FRANCS

Date	Qty	Net Unit Price	Total Cost	Supplier
9-3-76	30	172,570	5,177,100	Peyrissac. Mali
15-6-76	20	173,540	3,470,800	
22-10-76	25	183,085	4,577,125	"
22-12-76	20	188,220	3,764,400	"
22-12-76	15	188,220	2,823,300	"
4-6-77	20	205,155	4,103,100	"
20-6-77	20	205,155	4,103,100	"
29-8-77	6	205,155	1,230,930	"
8-2-78	22	205,155	4,513,410	"
15-2-78	22	205,155	4,513,410	"
25-4-78	25	205,155	5,128,875	"
21-7-78	50	222,465	11,123,250	"
9-11-78	25	222,465	5,561,625	"
3-10-78	25	222,465	5,561,625	"
19-1-79	5	222,465	1,112,325	"
5-3-79	24	222,465	5,339,160	"
12-3-79	26	222,465	5,784,090	"
1-9-79	50	239,500	11,975,000	Trans Import
15-3-80	100	271,750	27,175,000	Fafa Dembelé
24-7-80	50	332,085	16,604,250	" "
25-7-80	501	332,085	16,604,250	" "
18-12-80	100	396,050	39,605,000	" "
12-9-80	100	326,000	32,600,000	Fikou Landouré
21-4-81	100	355,040	35,504,000	" "
3-1-80	50	239,500	11,975,000	Dupé at Fils
6-8-80	1	260,000	260,000	Mohamed Haidara
6-8-80	12	262,500	3,150,000	Mohamed Haidara
Totals	993		273,340,125	

NOTE:
All Peyrissac Prices are net of quantity discount usually 3,300 MF per unit.

All Fata Dembelé prices are gross, including transport to Mopti.

TABLE C-5

PURCHASES HONDA MOTORCYCLES - 1981

(Malian Francs)

DATE	QTY	PRICE	COST TOTAL	SUPPLIER	CHEQUE
10-1-81	1	600,000	600,000	Boubaca DaNico	417
24-1-81	1	560,000	560,000	Issou Fomba	18
23-2-81	1	900,000	900,000	Afa Savaya	419
25-2-81	1	550,000	550,000	Boubaca Kampo	421
3-3-81	1	550,000	550,000	Mohamed Haidara	423
14-4-81	1	550,000	550,000	Yaya Diallo	428
15-4-81	1	550,000	550,000	Not Identified	429
15-4-81	1	550,000	550,000	Not Idenfitied	430
18-4-81	1	650,000	650,000	Ibraima Koita	431
24-4-81	1	550,000	550,000	Yaya Diallo	433
Total	10		6,010,000		

TABLE C-6

BICYCLE PURCHASES

(Malian Francs)

DATE	QTY	UNIT PRICE	TOTAL COST	SUPPLIER
22-12-76	20	52,377	1,047,540	Peyrissac
20-6-77	1	50,310	50,310	Peyrissac
6-8-80	21	100,000	2,100,000	Mohammed Haidara
Totals	42		3,197,850	

Total Purchases

Actual Cost	
Mopeds	273,340,125
Motorcycles	6,010,000
Bicycles	3,197,850
Total	282,547,975
Adjusted Cost	
Mopeds	253,819,825
Motorcycles	6,010,000
Bicycles	3,197,850
Total	263,027,675

TABLE C-7

PURCHASE, SALE, THEORETICAL INVENTORY, MARKET GARDENING TOOLS - 1979 - 1982

(Malian Francs)

ITEM	UNIT PRICE	QTY	TOTAL COST	SALES	STOCK DEC 1982
Wheel Barrow	30,000	65	1,950,000	19	46
Shovel	4,000	1225	4,900,000	128	1,097
Sledge Hammer	18,000	197	3,546,000	1	196
Hoe	4,500	744	3,348,000	2	742
Sprintler Can	15,000	1922	28,830,000	9	1,913
Pick Axe	4,510	109	491,590	22	87
Rake	2,995	7	20,965		7
Total			43,086,555		

TABLE C-8

ESTIMATED VALUE 1982 - YEAR END INVENTORY

MARKET GARDEN TOOLS

(Malian Francs)

ITEM	STOCK	CLEARANCE PRICE	INVENTORY VALUE
Wheel Barrow	46	15,000	690,000
Shovel	1097	3,000	3,291,000
Sledge Hammer	196	4,500	882,000
Hoe	742	2,000	1,484,000
Sprinkler Can	1913	4000	7,652,000
Pick Axe	87	3000	261,000
Rake	7	1000	7,000
		Total	14,267,000

TABLE C-9

SALES OF MARKET GARDEN TOOLS 1979 - 1982

(Malian Francs)

ITEM	QTY	LIST PRICE	TOTAL RECEIPTS
Wheel Barrow	19	33,600	638,400
Shovel	128	4,480	573,440
Sledge Hammer	1	20,160	20,160
Hoe	2	5,040	10,080
Sprinkler Can	9	16,800	151,200
Pick Axe	22	5,055	111,210
Rake	-0-		-0-
		Total	1,504,490

TABLE C-10

CALCULATION OF LOSS TO CREDIT PROGRAM

(Malian Francs)

Original Cost of Goods	43,886,555
Revalued Final Inventory	-14,267,000
Cost of Goods Sold	29,619,555
Total Sales	-1,504,490
Direct Loss	28,115,065

B. Personnel Support Program

1. Personnel Structure

The personnel of Opération Mils Mopti worked in a four-tier organization structured on a combination of geographical and responsibility considerations. There was a central headquarters staff at Sévaré which managed the project in the Fifth (Mopti) Region. The next lower level was the sector with a chief and a small staff; there were seven sectors. Each sector was divided into Zones of Development with a zone chief and sometimes an assistant; each Zone was divided into sections (secteurs de base) with a chef de base; an extension agent working with several villages, at each section. These personnel were paid under three payroll budget systems. Some were permanent civil servants on the national government payroll, others were permanent civil servants paid on the regional government payroll. The majority were contractual personnel, employed by the Opération and paid on its own payroll. Generally speaking, senior personnel at the Sévaré headquarters tended to be on the national payroll while at the other end extension agents at the base section level tended to be contract employees. The regional payroll employees tended to be scattered throughout the levels in between. However, there appears to have been no hard and fast rule and personnel from any payroll system might be found at any level in the organization.

Salary levels were established in accordance with normal rules of education, experience, responsibility, seniority, etc.

2. Salary and Payroll Structure

The salary of an individual employee consists, in Mali, of basically four parts: a gross salary from which are deducted an income tax contribution and a social security contribution. Added to this net is a prime or bonus. The prime is supposed to reward the employee for productivity, responsibility or other extra level of performance. On the payroll will also be shown an employer's contribution, paid to the national treasury,

which is 15.4% of the salary total, i.e., gross salary plus bonuses; this is a social security contribution from the employer. Although a government Opération in the public sector, OMM as an employer is required to pay this tax.

3. Personnel Costs

The salaries of personnel on the national and regional payrolls were not a charge to the OMM personnel budget. They represented a contribution on the part of the Malian Government to the project and are not here included as personnel costs of the Opération. The personnel costs that were charged to the OMM budget included: the salaries of contractual personnel, their bonuses, if any, and the employer contribution, plus the bonuses of regional and national civil servant personnel and the resultant employer's contribution. There were a number of other personnel costs such as for temporary laborers, part-time investigators for polls and surveys, overtime, travel allowances and training costs. Training costs included salaries of teachers at the Boré Training Center, other Training Center costs and training allowances. Some other training costs, including salaries of both trainers and trainees, are included under appropriate cost categories but cannot be separately identified.

It should be noted here that all personnel costs charged to the OMM budget were subject to reimbursement by AID. As noted, the other payroll costs were considered a GRM contribution.

The total cost to OMM for personnel expenses during the period 1976-1982 is set forth in the table on personnel costs. It amounts to 576,151,635 Malian francs.

As the table indicates, OMM did not pay out all the costs shown for personnel. It still has a number of outstanding liabilities in this category. They represent accrued costs not reimbursed by AID at the time project financing was terminated and for which OMM had no funds available. The severance payments are mostly for contractual personnel dismissed after financing was terminated.

PERSONNEL COSTS
(MF)

Costs Disbursed

Gross Payroll Costs	132,208,000
Employer Payroll Tax	58,419,000
Bonuses (primes)	254,703,000
Temporary Labor	6,672,000
Overtime	1,492,000
Training Bonuses and Allowances	4,561,000
Part time Pollsters/Researchers	3,420,000
Death Benefits	490,000
Research Allowances	1,655,000
Travel Allowances	18,146,000
Miscellaneous Boré Training Center Costs	10,298,660
Kitchen help Boré Training Center	1,836,000
Total Costs Disbursed	493,900,660

Costs Incurred But Not Disbursed

Payroll deductions-literacy program	495,175
Gross Payrol Costs	30,040,000
Employer Payroll Tax	9,747,000
Bonuses	33,227,000
Severance Pay	8,500,000
Boré Training Center	150,000
Kitchen Help, Boré Training Center	91,800
Total Incurred Costs, not disbursed	82,250,975
Total OMM Personnel Costs	576,151,635

The above tables were developed by going through OMM's montly payrolls for each year 1976 to 1982. Working tables were set up for each year and are in the team's working files. The following table (OMM Personnel 1976-1982) shows the development of the work force over the project period.

OMM PERSONNEL 1976-1982

	Phase I 1976	Phase II 1979	October 1982
Headquarters	16	26	74
Field	130	227	384
Min-Ag Regional Office, Mopti	--	n.a.	19
Total	146	253	477

The final table (Personnel Distribution OMM 1982) shows OMM personnel distribution by area of assignment and payroll category as of 1982. Personnel at the Min-Ag regional office in Mopti were essentially headquarters personnel.

PERSONNEL DISTRIBUTION OMM 1982

	Headquarters Sévaré	Min. Ag Regional Office	Field Offices	TOTAL
GRM Budgets	23	15	192	230
OMM Budgets	51	4	192	247
Total	74	19	384	477

C. The In-house Training Program

1. Description of OMM Training Programs

Opération Mils Mopti had three distinct training programs for its employees. The one to which the statement of work is primarily addressed was the training program for up-grading extension agents (encadreurs) which took place at Boré, a former youth training center, located about 135 kilometers from Sévaré OMM headquarters on the road to Douentza. The other two were an in-house refresher training program for all field personnel and an on-the-job training program for interns (stagières) completing their professional education with a period of field assignment prior to graduation and formal employment.

All training was the responsibility of the Training Division at Sévaré and in the field. The division consisted of two persons at OMM headquarters, the division chief and his assistant, plus a farm machinery training specialist at Koro, blacksmith trainers at Koro and Bankass, and training officers at each sector headquarters. All of these persons were primarily engaged in the refresher training program of courses and seminars. The division chief and his assistant also supervised, but at a distance, the training center at Boré.

2. The Boré Training Center

The training center at Boré was rehabilitated and equipped in 1980 and in June of that year 29 newly hired extension agents (encadreurs) went through a 19 day program to prepare them for their new jobs. The program included classroom instruction in agricultural extension, agricultural machinery, general agriculture and a few hours on specific crops including vegetables, peanuts, sorghum and millet. They also spent two and one-half hours a day on practical farm field work. The complete, full-time training program set up at Boré was intended to upgrade extension agents already on the payroll with experience and promise, from the encadreur rank to the moniteur level and thus qualify them for a career in agricultural extension. The first such class, which graduated eighteen students, started in July and

finished in December, 1980. Material studied covered the basic elements of the work of an extension agent: general agriculture, specific crops, agricultural machinery, topography, agricultural extension and some agricultural economics. The first year students were also supposed to receive instruction in mathematics, French and animal husbandry. These were only added for the later classes. The program was originally conceived as including 576 hours of formal classroom instruction and 432 hours of field work spread over six months.

The teaching staff at Boré consisted of two teachers. They were supported by visiting instructors from the headquarters staff at Sévaré including the Training Division chief and his assistant. This system of permanent staff and visiting teachers did not work well as a result of both scheduling difficulties and the lack of teaching skills among the visitors. The teaching staff was accordingly increased to three persons for subsequent classes in 1981 and 1982. The hours of planned classroom instruction fell short of established goals but the hours of practical field work were pretty well maintained. As noted, general education was neglected but some instruction in agricultural research, report writing and literacy programs in Peulh and Dogon was added.

In response to the evaluation of the first year's program, the second class was extended to eight months and ran from June 1981 until February 1982. With the additional teacher it was possible to strengthen the instruction in French, geometry and topography. A third class was started in June 1982 but it ran only until September. There were fifteen students in the second class, sixteen in the third.

3. <u>In-house Training Costs</u>

The costs of the in-house training program, all parts of it, included the salaries and <u>primes</u> of the training division personnel, general overhead assignable to that division, salaries, travel and training allowances paid to participants in courses and seminars, travel of Sévaré staff assigned to instruction duties, salaries, <u>primes</u>, travel of sector level training personnel and the repair, equipping and operation of the Boré center. All

of these training costs are properly considered personnel costs but it has not been possible to separately identify all or even most of them. Those that have been separately identified are set forth below. They also appear in the section of this report dealing with personnel. The costs described here under training are not additional to those shown under personnel, they are the same costs and double counting should be avoided.

There were three separately identifiable costs associated with the operation of the Boré training center: rehabilitation of the structures, supplies and equipment and salaries of the non-teaching staff. They are shown below. It should be noted that supplies and equipment included both expendable supplies, including food, and equipment such as desks, chairs, mattresses, etc.

Referring back to the table on personnel costs, there can be noted an item called Training Bonuses and Allowances. That is for the entire OMM training program and cannot be allocated to Boré and is not included in the table presented here.

IDENTIFIED BORE CENTER COSTS

	MF (000)
Rehabilitation	7,683
Supplies, Equipment	10,449
Non-teaching staff	1,928
TOTAL	20,060

Not included above are the trainees' own salaries, salaries of instructors, travel of visiting headquarters' staff or any share of general OMM overhead. To repeat, all of the above costs, identified or not identified, are already included in other calculations of general operating costs of Opération Mils Mopti and should not be double counted.

D. The Blacksmith Training Program

1. Description of the Program

In order to understand the financial arrangements and costs of the blacksmith training program it must be appreciated that this was less a training program than it was a small industry development program with elements of supply, credit and skill modernization. Blacksmithing in Mali is a traditional, hereditary occupation, at the village level, which manufactures and repairs simple, traditional agricultural tools and equipment using primitive tools and skills. Since one of OMM's objectives was to introduce and expand the use of more modern tools and equipment, it saw the need to upgrade the supporting cottage industry of blacksmithing.

During Phase I of the project two persons attended a training course in agricultural machinery repair at the Institute of Tropical Agriculture, Ibadan, Nigeria. One was, for a time, the chief of OMM's agricultural machinery section; the other was later assisted in setting himself up as a master blacksmith near Bankass. USAID procured from the United States a number of blacksmith tools and some steel stock. Some of this was provided to Amadou Djibo, the smith, for his shop at Sagaremba. The team found no evidence of indebtedness for this equipment and it was probably a donation (see below).

Under Phase II of the program two blacksmith trainers were added to OMM's staff, one in May 1979, the other in March 1981. Only the first was involved in the blacksmith training course that was held in February 1980. The principal activity of the blacksmith trainers was never the conduct of formal training programs. They worked with village blacksmiths the way extension agents worked with pilot farmers or groups of peasants, advising, instructing, encouraging and supporting. They also worked with OMM's agricultural machinery section in programs of in-house training of extension agents on the maintenance and repair of agricultural machinery.

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The blacksmith training course per se took place at Toroli, near Koro, from February 1 to March 4, 1980. Twenty-two blacksmiths attended. The training was conducted by Gaoussou Doumbia, the OMM blacksmith trainer, assisted by Amadou Djibo, the master smith mentioned above. This "special outside lecturer" was unpaid, his services were apparently considered already compensated for by the training, equipment and assistance he had previously received.

The training consisted of communally building a "modern" workshop; learning to work with handtools unknown to the smiths such as hand drills and tap and die sets; making templates for the fabrication of replacement parts for plows; assembling carts and forging parts.

In 1982, an evaluation team concluded that the training program was appropriate and adequate in scope and content.

2. Costs of the Blacksmith Training Program

The costs of the training were limited to the salary and allowances of the OMM trainer for one month, the cost of the equipment and material used, which USAID had supplied, and the cost of rations for the students who were not salaried. We have been advised that the trainee food costs were covered by the Koro sector chief's operating budget and provided in kind. We have not been able to determine what those costs amounted to. The costs of the blacksmith training program were thus divided between the USAID and OMM; USAID provided tools and material; OMM provided some operating costs. While the OMM costs could not be identified, they were (a) minimal and (b) contained in other operating costs already reported elsewhere in this report. The total cost of all blacksmith tools and supplies, for training and for equipping shops, supplied by USAID from project funds but not in the OMM budget, was $103,938.

E. The Grain Marketing Program

1. History of the OMM-OPAM Relationship

The Malian Agricultural Products Office (OPAM) was created in 1965 as a state grain marketing monopoly. Its function was to buy surplus grain production, store it and re-sell it to food or grain deficit areas. It carried out a stabilization function for both producer and consumer prices. In its early days, OPAM dealt almost exclusively, and directly, with farm cooperatives and cooperative federations. Beginning in the early 1970's, OPAM began to use the various Rural Development Operations (ODR's) as intermediaries in the grain marketing process. Although cooperative federations remained active, the Opérations bought grain, rice, corn, millet, from farmers or groups of farmers and delivered it to OPAM at the arrondissement or cercle level. The Opérations were paid a fee for this service calculated annually, based on support and ceiling prices, and designed to cover all costs, including overhead, depreciation of equipment, personnel, etc.

Although OMM was created in 1972, it did not become involved in the marketing of grain from its area of responsibility for several years. The first important year was the crop year of 1975-1976 which ran, as did subsequent crop years, from November 1 to March 31. Two comments should be made here: the team has not found reliable figures for grain marketed from the OMM area for the period prior to the 1976/77 crop year; for 1975/76 this report uses a figure developed by the Bureau Africain de Recherches Appliquees (BARA) from their 1978 OMM/USAID contract study; for subsequent years, the figures for tonnage sold by OMM to OPAM are OPAM's receipts figures which tend to be a bit lower than OMM's claims of delivery. The lower figure has been used to avoid any overstatement of OMM's supposed earnings from this program.

Starting with the 76/77 crop year OMM became active in its marketing program, acting as OPAM's agent for most grain marketed in the area, the

balance coming through the cooperatives. However, for two years 76/77 and 77/78, there does not seem to have been any carefully calculated basis for reimbursing OMM for marketing costs. From secondary sources, it would appear that OMM was paid a fixed fee of 5.000 MF per ton of grain delivered to OPAM whether at arrondissement, cercle or regional level and grain seems to have been so delivered. The tonnage received by OPAM is known, the distances moved are not known. What costs the 5.000 MF were supposed to cover is equally unknown but one can suppose from principles used in calculating costs elsewhere that they were supposed to cover all costs. During this period, the officially government fixed transport rate was 200 MF per ton per kilometer. This was for privately and publicly owned trucks. The fee was supposed to cover all costs including overhead and depreciation. It probably did because some grain was moved in privately owned trucks during this period. However, a fee of 5.000 MF per ton would not even cover the transportation cost of any grain moved more than 25 kilometers. There is no way to calculate, from information presently available, what was the financial impact on OMM during the years 1976, 1977 and 1978. Supposed earnings have been calculated and are shown below. It is extremely doubtful if earnings covered costs, the best that could have happened is that OMM suffered little or no out-of-pocket loss during those years.

ESTIMATED GROSS EARNINGS
OMM GRAIN MARKETING
1976-1977-1978
(MF)

Crop Year	Tons Received	OMM Fee	Supposed Earnings
1975/76	9.649	5.000	48.245.000
1976/77	9.688	5.000	48.440.000
1977/78	8.071	5.000	40.355.000
		TOTAL =	137.040.000

These earnings should not be confused with profits; they very likely did not even cover expenses since a year later total costs, including depreciation and salary supplements for those assigned to the program, were estimated at 8.860 MF per ton.

2. The Marketing System 1979-1982

A major change took place with the 1978/79 crop year. A barême, or price calculation, was prepared and applied to OMM's marketing activity. The margin between what OMM paid the farmer and what OMM was paid by OPAM was fixed at 7.690 MF per ton. Theoretically, this was supposed to cover all OMM costs for grain delivery to the arrondissement level. However, some grain seems to have been delivered to OPAM at cercle level without additional recompense.

OPAM provided funds to OMM to buy grain, usually provided in installments. The fund receipts were noted in OMM's records but the funds were actually distributed to the chiefs of the Rural Development Sectors (SDRs) according to estimates of the grain to be purchased. The funds, along with grain sacks also provided by OPAM, were ultimately distributed down to the village level, to village chiefs and their councils. But the distribution was not done by OMM, it was done by local administrative committees, including the administrative chief at the cercle and arrondissement levels. Each village, and ultimately each producer had a quota of grain to be delivered at a collection point for transport, by OMM, to OPAM storage points. The funds and sacks were delivered in advance and distributed at the village or group of villages level. OMM had been given a responsibility without authority. Every year from 1979 through 1982 actual grain delivered by the farmers fell far short of the estimates used to distribute money and sacks. OMM had no way to recover from the farmers or the village chiefs but OPAM demanded the return of funds and sacks. OPAM credited OMM with earnings according to the barême and tonnage received. But it used this credit only as an offset to what OPAM claimed was a much larger OMM debt. The result on cash flow was clear. OMM paid out for direct costs, personnel, vehicle operating expenses, travel and supervision, but OMM received nothing in return. Even

if the costs supposed to be covered by the barème actually were covered, it is easy to figure the absolute minimum cash loss to OMM. It is the amount of earnings never paid by OPAM.

OMM GRAIN MARKETING & SUPPOSED GROSS EARNINGS
1979-1980-1981-1982

(MF)

Crop Years	Tons	Price Net Margin	Supposed Earnings
1978/79	7.555	7.690	58.097.950
1979/80	4.811	2.654	12.768.394
1980/81	3.556	5.744	20.425.664
1981/82	2.101	10.293	21.625.593
		TOTAL	112.917.601

3. Financial Conclusions

In the Project Paper for Phase II, there was a discussion of the ultimate financial future of OMM. It was hoped that OMM would be able to develop some revenue producing activities that would at some date permit a reduction in the need for external assistance. One such source of revenue was expected to be the fees for marketing services provided to OPAM. It was expected that these would certainly exceed depreciation costs for the vehicles used in marketing even when amortized over only three years. Neither the Project Agreement nor any Letter of Implementation tried to spell out how OMM's earnings might be offset against operating expenses reimbursed by USAID. Nevertheless some offset, at some time in the future,

probably through budget planning discussions, was clearly contemplated in 1979. Unfortunately, this concept was never tested, there were no earnings during any part of Phase II and the absolute minimum cash flow loss to OMM was 112,917.601 Malian francs.

The team wishes to emphasize that this discussion goes well beyond the questions posed in the Statement of Work. This additional discussion, here and in Annex A, is in direct response to wishes expressed by both USAID and the Ministry of Agriculture that the financial impact of the grain marketing program be thoroughly studied and presented.

F. The Research Program

1. OMM - ICRISAT - SAFGRAD History

Although Malian rural development organizations, such as OMM, concentrated on extension, production and integrated development, the project had a research element and some project funds for dollar procurement, technical assistance and local currency reimbursements were devoted to research.

The International Crop Research Institute for Semi-Arid Tropics, New Delhi, India (ICRISAT), was essentially responsible for running a research program at the Séno Research Center located at Koporo-Keniepé in the Mopti Region. This research concentrated on millet and sorghum production including varieties, methods of cultivation, use of inputs and use of animal traction. Dollar funding for ICRISAT was provided for in fiscal years 1977 and 1978 by Agreements entered into by REDSO, Abidjan using OMM Project 0202 funds. OMM, as an organization, was not involved in this funding which totalled $160,000. Beginning in FY 1979 ICRISAT activity in Mali was funded under a separate project.

There was a contribution from OMM operating funds to the work of ICRISAT. A well was dug there under the OMM contract with a justified cost of 3.712.500 MF. A generator, previously used at Sévaré, was transfered to the research station but it lacked parts and never functioned. The Director of the

station, Samba Traoré, was at first assigned to OMM's staff but later transferred to the Ministry of Agriculture's Research Department. This was an administrative move without financial impact. Traoré's salary was always paid on the national payroll; his primes and allowances from March 1979 until the end of 1982 were a charge to the OMM personnel budget and this contribution is contained in the overall personnel cost of the project. Other support consisted of the wages of several laborers assigned to the station, gasoline for the station vehicle (provided under ICRISAT funding) and the salary of a driver. None of these costs are separately identified or justified. They are already covered in other parts of this report.

The Semi-Arid Food Grain Research and Development Project (SAFGRAD) is, as its name indicates, more a project or program than an organization. SAFGRAD was created in 1976 by the Commission on Research Science and Technology (CSTR) of the Organization of African Unity (OAU). The program is internationally supported. In the Mopti Region, the project carried out field trials on phosphate fertilizer use for millet and sorghum.

Two researchers, one from March 1980 to March 1981 and the other from 1981 to March 1982, were funded under the project and assigned to work with OMM. They were funded under USAID Project Implementation Orders (PIO's) and Personal Service Contracts. The cost of these contracts are included as part of technical assistance costs in Summary Table 2. A jeep pick-up truck was provided with project funds, procured directly by USAID and not as a part of OMM's operating expenses budget.

Support from the OMM budget was limited apparently to gasoline and oil for the vehicle, the time of certain extension agents and some fertilizer and other inputs costing 342,000 MF for the field trials (see Summary Table 1). The system of field trials called for extension agents to work with selected farmers on selected sites under the guidance of the SAFGRAD technician assigned to OMM. In 1981-1982, there were 62 such sites scattered throughout the OMM region, but concentrated in the Koro and Bankass sectors. The crop research advisor of USAID's Agricultural Development Office has estimated that for about five months out of a year, an extension

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agent cooperating in this program might spend from 15 to 20 percent of his time on site visits and supervision. The costs of the Agent's time are already included elsewhere in this report, under overall personnel costs. The same is true of the "in-kind support" described above. Consequently, except for 342,000 MF, there were no separately identified or justifiable cash outlays by OMM in support of the research programs.

2. Conclusion

Although OMM made a contribution to the ICRISAT and SAFGRAD programs, this contribution was in-kind, separately identifiable only in part, and mostly included in other identified costs. Therefore, the only justified OMM budget costs for the research program totalled about 342,000 MF.

G. The Village Farmer Organization Program

Other than project personnel time and credit program goods to some individual farmers (all elsewhere reported), there were no project inputs, hence no project costs associated with this program.

H. Infrastructure Construction Program

1. Building Program

a. History

The building program for Opération Mils-Mopti began in the early part of 1974. The main objectives of the program were to: (1) provide offices for the headquarters and sectors; (2) provide housing for key headquarters staff and heads of the sectors; and (3) provide protected storage areas at major sectors and ZER's (Rural Expansion Zones). In most cases, sector offices and housing were provided by the government with remodeling and repairs completed under the building program.

The cost of major building maintenance projects are included in the building program.

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1) Housing

At the OMM headquarters four new houses were built in 1976-77. Additional work in painting and completing electrical installation was completed on one of the houses in January of 1978. Apparently all four of the houses were repainted in 1979 and a fence was built to separate the houses from each other and the office complex. In that same year, separate kitchens were constructed for each house. In 1981 a water tower was installed in the office complex and water distribution lines were installed to connect the houses. Sanitary facilities were also added to each house in the latter part of 1981.

A house was built in 1974 for the chief of the SDR in Koro. It is the same plan as the houses at OMM headquarters. The extra features, kitchen and fences, were built by the people of the town with funds not related to the project.

In the other sectors wor was done in repairing and/or enlarging existing housing for sector chiefs. The housing for the chief of the SDR in Mopti was enlarged in 1975 and repairs made in 1979. A banco kitchen and a toilet were built in 1977-78 for the chief of the SDR in Bandiagara. Repairs were made to the house of the chief of the SDR in Bankass during the latter part of 1980. Finally, maintenance and major repairs were made to the house of the chief of the SDR in Djenne in August of 1981.

2) Offices

The first office was built for the SDR in Bankass in 1974-75. The office complex for the headquarters of OMM was started in 1974 with the construction of a covered garage and a warehouse which was later to become the main office. The concrete block fence was built around the complex in 1976. A fuel storage tank and a two room annex were installed in 1978. In 1979 work apparently started on converting the warehouse into office space and a small building to house a generator was built. The guard house was built in 1980 and the R.A.C. (radio)

installed. 1980 also saw the installation of two additional fuel storage tanks (installed on the site of the Brigade Pistes but for the use of OMM), repairs and painting of the fence, construction of a covered entrance, and a new generator building. The water tower was built in 1981 along with the lines to connect it with the office. Finally in 1982 two walls were built under the original garage to provide a small storeroom for the mechanic.

A two room office built in banco was constructed in Koro in 1975. A new ceiling and roof were added to an existing structure to provide office space for the SDR in Douentza in 1978. Maintenance was completed on the SDR office in Mopti in 1981 as well as the SDR office in Djénné.

3) Warehouses

In 1974-75 warehouses were built in N'Gouma, Koro and Bankass.

A major contract to construct eleven warehouses was signed in 1974. Work continued through 1977 but the contracted work was never completed. Five of the warehouses were completed although at least one of these was considerably smaller than the plans called for. Reportedly, four of the warehouses were completed except for roof frames and materials. The eleventh warehouse, viewed by this writer, has fallen down but was apparently built to the unfinished walls state. Despite the poor workmanship and lack of completion, the contractor was paid in full. For the locations of the eleven warehouses see Table B-1.

A warehouse in banco was built for the SDR in Bandiagara in 1977-78.

4) Other Buildings

Repairs were made to the buildings at the Centre de Formation Professionnels at Boré in 1980. A community center in banco was built

in Dourou in 1981. A local contractor was hired to provide materials and skilled labor while the people of the village provided the unskilled labor for the community center.

In 1980, the engineering office of Génie Rural prepared plans and specifications for 49 buildings including various offices, warehouses, housing units, and one site utilities project. The request for offers was divided into 6 lots in 19 locations. Bids were opened in March of 1981. In April of 1981, USAID asked Génie Rural to annul the bidding as the necessary funds were not available at the time. A previous request from USAID to postpone the bidding procedure was not received in time. In July of 1982, after long negotiations, contracts were signed with Génie Rural to direct and oversee the work and with EGEBAT to build 10 warehouse-offices in the region. The construction contract was cancelled when the OMM project was cancelled and a settlement was reached between USAID and the contractor in March of 1984 (see Summary Table 2, footnote 2).

b. Description of Tables

Table B-1, presented under this program, attempts to list the construction projects of the Opération in the order in which they were started.The name of the contractor is listed where it is known. For five of the projects, no documentation was found so the name of the contractor is unknown.

Under Type of Agreement is a listing of the type of documentation found in the OMM files. Blanks occur where no documents were found or where the information was obtained by oral interview. Dates of signing of the various documents are included wherever possible.

The contracted price, additions, and reductions were obtained in a similar manner. Final price is a calculation of the three other columns. Additions and reductions were generally formalized in a letter

and signed by representatives of Génie Rural, OMM, the contractor and usually the governor of the region. The reduction on item 5, Table B-1, contract with Mory Younou was never observed nor was the cause of the reduction clear.

It should be noted that in almost all of the contracts there were penalty clauses for non-completion of the work within a given period of time. There is no evidence that any of these penalties were ever enforced.

The Contracted Work column is a summary of the title on the agreement document and the location of the work. The listing of a building type with a location indicates the construction of a new structure at the given location.

The Percentage Completed column is an estimate of the work completed based on physical observation or from interviews with OMM and contractor personnel. The next column indicates the projects actually visited by the team engineer.

Sizes of the projects were determined by actual measurements and/or from technical drawings wherever possible. Remodeling, repairs, and maintenance project sizes are not indicated. Without knowing the conditions of the structure before the work was started it is almost impossible to determine the extent of the completed work.

Starting and completion dates are a composite of information obtained from construction documents, contractors, field reports and payments made to contractors.

The letter in front of the justifiable costs indicates how the costs were determined. "C" means the final contract price is accepted as the justifiable cost. "E%" is the contracted price times an estimate of the percentage of work completed. "E" is an estimated cost based on an average cost for similar work of the same time period.

Under the Comments Column additional explanations are made. For remodeling, repairs, and maintenance projects, a brief description of the types of work involved is included where the information was available.

c. Methodolgy

For the majority of the construction costs we accepted the contracted price, after additions and reductions were included. These prices were compared with estimates made by Génie Rural and with other prices from similar projects.

Projects where no documentation was found were estimated by measuring the structures and applying unit prices used by Génie Rural estimates from the same time frame.

Repair and maintenance prices were accepted after comparing unit prices from construction projects.

d. Summary Results - Cost of Building Program

	Amount (MF)
A. Justifiable Costs	180,721,299 MF
B. Non-justifiable Costs	
1. Warehouse in N'Gouma	3,500,000
2. House and Warehouse in Koro	12,530,810
3. Office and Warehouse in Bankass Warehouse at Sokura	10,944,125
4. Office and garage in Sevare OMM	15,356,900
5. Enlargement of house in Mopti	3,644,905
6. Two rooms, banco construction, in Koro	534,500
7. 11 warehouses	8,525,000 *
Subtotal	55,036,240
Total Costs of Building Program	235,757,539

*Note: Difference between what was paid and the estimated justifiable costs.

TABLE B-1 CONSTRUCTION PROGRAM

No.	Entrepreneur	Type d'Accord	Prix Contractuels	Avenants	Abattement	Prix Définitif	Objet du Contrat	% Travail Accompli	Contrôle sur Place	Grandeur	Début	Fin	Coûts justifiable	Remarques
1	AMADOU BAIDI N'DIAYE	CONTRACT NO. 1	3,500,000 20-2-74	-0-	-0-	AUCUNE 27-09-74	MAGASINS DIALLASSAGOU	0		-	-	-	-0-	CONTRACT CANCELLED
							SEGUE	0		-		-	-0-	
2	COOPERATIVE OUVRIERE NORTH	UNKNOWN	3,500,000 74	-0	-0-	3,500,000	MAGASIN N'GOUMA	100%		101 m2	1974	1974	-0	COMPLETED BEFORE START OF PROJECT
3	DRAMANE SISSOKO	CONTRACT NO. 2	13,482,000 26-02-74	4,217,200 27-10-75	5,170,370 27-01-79	12,530,830	LOGEMENT FORD	100%	.	157 m2	24-02-74	-	0	COMPLETED BEFORE START OF PROJECT
							MAGASINS FORD	100%	.	160 M2			0	
							MAGASIN	0						
							FORD I	0						
							DINDOREDIOGOU	0						
4	MORY YOUNOU	CONTRACT NO. 3	8,750,000 05-03-74	2,194,125 27-10-75	-0-	10,944,125	BUREAU RAMASS	100%	.	105 m2	05-03-74	28-10-75	-0-	COMPLETED BEFORE START
							MAGASINS RAMASS	100%	.	160 m2			-0	OF PROJECT
							SOKURA	100%		110 m2			0	
5	MORY YOUNOU	CONTRACT NO. 6	27,500,000 05-03-74	11,000,000 05-08-76	28,500,000 27-03-77	38,500,000	MAGASINS PAI	100%		101 m2	05-03-74	25-10-76	[illegible]	[illegible]
							* DIALLASSAGOU	0		101 m2			[illegible]	[illegible]
							KAMI EDUZOU	67%	.	101 m2			EZ 2,745,000	NOT COMPLETED [illegible]
							KOUROGOU	67%		101 m2			[illegible]	[illegible]
							SEGUE	67%		101 m2			EZ 2,745,000	PAID BEFORE 1976.
							DIENEDEG	100%		101 m2			[illegible]	NOTE THAT THE MAGASIN OF
							DIAMBEDOU	67%		101 m2			EZ 2,745,000	DIENEDEG IS WORK TOGETHER
							DIOUGANI	100%		101 m2			[illegible]	[illegible]
							KEBERO NA	100%		101 m2			[illegible]	[illegible]
							BORE	70%	.	101 m2			EZ 1,950,000	KEBERO BENIENA CONTRIB
							DOUENTZA	100%	.	59 m2			EZ 2,045,000	OF DIALLASSAGOU.
							* KOROFO BENIENA	100%						
6	DJIGUI DIALLO	CONTRACT NO. 4	11,065,000 07-08-74	4,291,900 14-07-75	-0-	15,356,900	BUREAU SEYARE OUM	100%	.	350 m2	07-08-74	05-02-76	-0	THE REGIONAL [illegible]
							GARAGE SEYARE OUM	100%	.	85 m2			-0-	WERE COMPLETED BEFORE
														THE START OF THE PROJECT
														NOTE THAT THE BUREAU WAS
														PREVIOUSLY DESIGNED AS A
														MAGASIN.
7	BABA N'DIAYE	CONTRACT NO. 5	3,500,000 27-09-74	-0-	-0-	AUCUNE 27-09-74	MAGASINS DIALLASSAGOU	0		-	-	-	-0-	CONTRACT CANCELLED
							SEGUE	0				-	0	
8	DJIGUI DIALLO	DEVIS ESTIMATIF	3,644,905 21-12-74	-0- 0	0 -0-	3,644,905	AGRANDISSEMENT DUM LOGEMENT SUR NORTH	100%		-	21-12-74	02-04-75	-0-	COMPLETED BEFORE START OF PROJECT
9	DJIGUI DIALLO	DEVIS ESTIMATIF	534,500 28-03-75	-0	-0	534,500	CONSTRUCTION 2 PIECES EN BANCO - BORO	100%	.	-	28-03-75	15-05-75	-0-	COMPLETED BEFORE START OF PROJECT
10	DJIGUI DIALLO	CONTRACT NO. 7	7,275,000 31-03-76	-0-	0	7,275,000	CLOTURE A L EXTERIOR SEYARE OUM	100%	.	448m x 1.55m	05-04-76	25-10-76	[illegible] 7,275,000	

No.	Entrepreneur	Type d'Accord	Prix Contractuels	Avenants	Abattement	Prix Définitif	Objet du Contrat	% Travail Accompli	Controlé sur Place	Grandeur	Début	Fin	Coûts Imputable	Remarques
11	DJIGUI DIALLO	CONTRACT NO. 8	25,032,000 09-08-76	0-	3,105,449 27-03-77	23,918,891	LOGEMENT SEVAGE OMM LOGEMENT SEVAGE OMM LOGEMENT SEVAGE OMM	100% 100% 100%	. . .	157 m2 157 m2 157 m2	07-08-76	15-05-76	C 23,918,891	
12	SALIA MAIGA	CONTRACT NO. 9	8,344,000 09-08-76	0-	-0-	8,344,000	LOGEMENT SEVAGE OMM	100%	.	157 m2	15-10-76	02-01-77	C 8,344,000	[illegible]
13	SALIA MAIGA	DEVIS ESTIMATIF	2,675,655 20-01-78	-0-	-0-	2,675,655	REAMENAGEMENT D'UN LOGEMENT SEVAGE OMM	100%	.	-	20-01-78		C 2,675,655	[illegible]
14	DJIGUI DIALLO		3,075,180	-0-	-0	3,075,180	REPARATIONS DU MAGASIN DOUMBUZA	100%	.	-	01-06-78	02-09-78	C 3,075,180	[illegible]
15	UNKNOWN					UNKNOWN	RESERVOIR A EVACUATION SEVAGE [illegible]	100%	.	6000	1978	1978	E 1,500,000	NO RECORDS FOUND
16	UNKNOWN					UNKNOWN	CONSTRUCTION [illegible] SEVAGE [illegible]	100%	.	73 m2	1978	1978	E 2,[illegible]	NO RECORDS FOUND
17	UNKNOWN					UNKNOWN	MAGASIN BARDIAGESS CUSINE, WC BARDIAGESS	[illegible] [illegible]	. .	64 m2 36 m2	1977	1978	F 2,[illegible] E 1,845,[illegible]	[illegible] CONSTRUCTION, NO RECORDS FOUND
18	DJIGUI DIALLO	FACTURE	2,074,500 18-01-79	-0-	-0-	2,074,500	AMENAGEMENT DES BATIMENTS MOPTI	100%		-	1978	18-01-79	C 2,074,500	[illegible]
19	DJIGUI DIALLO					8,411,850	AMENAGEMENT LOGEMENT AGENT SDR MOPTI	100%		-	19-05-79	03-06-79	C 8,411,850	[illegible]
20	DJIGUI DIALLO	DEVIS ESTIMATIF	4,954,005 12-02-79	-0-	-0-	4,954,005	CAGE POUR GROUP ELECTRO BERCEAU POUR RESERVOIR SEVAGE OMM	100% 100%	. .	79 m2	12-02-79	1979	F 4,954,005	
21	DJIGUI DIALLO	FACTURE	37,500 27-04-79	0-	-0-	37,500	18DIS VOYAGE DE SABLE SEVAGE OMM	100%	.	18 m2	27-04-79	27-04-79	C 37,500	[illegible]
22	DJIGUI DIALLO		1,901,900 04-04-79	-0-	0-	1,901,900	HANGAR A L ENTRANCE DE BUREAU SEVAGE OMM	100%	.	-	-	04-04-79	C 1,901,900	[illegible]
23	DJIGUI DIALLO	FACTURE	315,700 05-06-79	-0	-0-	315,700	ENTRETIEN DE BADIGEON DE VILLA SUD SEVAGE OMM	100%	.	-	-	05-06-79	C 315,700	
24	DJIGUI DIALLO		651,810	-0-	-0	651,810	PEINTURE DES LOGEMENTS SEVAGE OMM	100%	.	-	-	25-07-79	C 651,810	[illegible]
25	DJIGUI DIALLO		10,183,335 06-08-79	0-	-0-	10,183,335	CLOTURE A L INTERIEUR SEVAGE OMM	100%	.	210m x 1.85	-	06-08-79	C 10,183,335	[illegible]

No.	Entrepreneur	Type d'Accord	Prix Contractuels	Avenants	Abattement	Prix Définitif	Object du Contrat	% Travail Accompli	Controlle sur Place	Grandeur	Début	Fin	Coûts Certifiés	Remarques
26	DJIGUI DIALLO	FACTURE	528,000 1979	-0-	0-	528,000	AMENAGEMENT D UN BUREAU SEVARE DMM	100%	-	-	-	1979	C 528,000	[illegible]
27	DJIGUI DIALLO		3,818,360 18-10-79	0-	-0-	3,818,000	QUATRE CUISINE AU LOGEMENTS SEVARE DMM	100%	-	4x 15.5m2	18-10-79	12-01-80	C 3,818,360	[illegible]
28	GENIE RURAL	CONTRACT	9,375,000 22-02-80	0-	-0	9,375,000	ETUDES	100%		-	22-02-80	01-03-81	C 9,375,000	[illegible]
29	DJIGUI DIALLO		807,250 31-06-80	0	0	807,250	LOGEMENT GARDIEN SEVARE DMM	100%	-	17.5m2		31-5-80	C 807,250	[illegible]
30	DJIGUI DIALLO		430,895 16-07-80	-0-	-0-	430,895	INSTALLATION R.A.C. SEVARE DMM	100%	-	-	-	16-07-80	C 430,895	[illegible]
31	DJIGUI DIALLO		325,250 21-07-80	-0	-0-	325,250	REFRATION LOGEME SEVARE DMM	100%	-	-		21-07-80	C 325,250	[illegible]
32	EGERAI		1,568,105 23-07-80	-0-	-0-	1,568,105	AMENAGEMENT LOGEMENT CHEF SDR BANDASS	100%		-	23-07-80	02-10-80	C 1,568,105	[illegible]
33	EGERAI	DEVIS ESTIMATIF	7,683,365 24-06-80	-0-	-0-	7,683,365	AMENAGEMENT CENTRE DE FORMATION BOKE	100%	-	-	22-10-80	25-11-81	C 7,683,365	[illegible]
34	EGERAI	CONTRACT	5,618,334 25-10-80	-0-	0-	5,618,334	POSE 2 CUVES A CARBURANT POUR DMM SEVARE R.F.A.	100%	. .	10,000 L 20,000 L	25-10-80	02-12-80	C 5,618,334	[illegible]
35	BOUBACAR BARA DJIRE	DEVIS ESTIMATIF	860,500 13-11-80	0-	-0-	860,500	HABIER LE BUREAU DU DIRECTOR SEVARE DMM	100%	-	-	-	13-11-80	C 860,500	
36	DJIGUI DIALLO		1,050,900 28-12-80	-0-	-0	1,050,900	ENTRETIEN CLOTURE ET PEINTURE SEVARE DMM	100%	-	-	14-02-80	28-12-80	C 1,050,900	[illegible]
37	DJIGUI DIALLO		1,708,800 26-12-80	-0-	-0-	1,708,800	REFOI GROUPE ELECTROGENE SEVARE DMM	100%	-	18.5m2	-	26-12-80	C 1,708,800	[illegible]
38	DJIGUI DIALLO		2,919,825 07-02-81	-0-	-0	2,919,825	ENTRETIEN BUREAU SDR MOPTI	100%		-	-	07-02-81	C 2,919,825	[illegible]
39	EGERAI	CONTRACT	4,499,200 30-01-81	0-	-0-	4,499,200	D'INSTALLATION D UN CHATEAU D EAU SEVARE DMM	100%	-	-	09-02-81	07-04-81	C 4,499,200	[illegible]
40	EGERAI	CONTRACT	5,873,100 28-12-80	0-	-0-	5,873,100	D'APPRECTION D EAU A PARTIR D UN CHATEAU DE LOGEMENTS SEVARE DMM	100%	-	557m	09-04-81	31-15-81	C 5,873,100	[illegible]

No.	Entrepreneur	Type d'Accord	Prix Contractuels	Avenants	Abattement	Prix Définitif	Objet du Contrat	% Travail Accompli	Contrôle sur Place	Grandeur	Début	Fin	Coûts Justifiables	Remarques
41	EGERAT		164,100 08-04-81	-0-	0-	164,100	D'ADDUCTION D EAU DU BUREAU SEVARE OMM	100%	-	-	08-04-81	[illegible]	C 164,100	INFORMATION DIRECT FROM CONTRACTOR
42	EGERAT	DEVIS ESTIMATIF	1,125,810 28-05-81	-0	-0-	1,125,810	ENTRETIEN DU LOGEMENT DU CHEF SDR DJENN	100%	-	-	10-08-81	14-11-81	C 1,125,810	INFORMATION DIRECT FROM CONTRACTOR PLASTERING WALLS, DOORS & WINDOWS, PAINTING
43	EGERAT	DEVIS ESTIMATIF	367,824 28-05-81	-0-	0-	367,824	ENTRETIEN DES BUREAUX DE SDR DJENNE	100%	-	-	10-08-81	14-11-81	C 367,824	INFORMATION DIRECT FROM CONTRACTOR SERVICES DE FENETRE, CONSTRUCTION DE FONT GRES, PAINTING
44	EGERAT	DEVIS ESTIMATIF	1,649,424 28-05-81	-0-	-0-	1,649,424	REFORMATION DU LOGEMENT CHEF SDR DJENNE	100%	-		10-08-81	14-11-81	C 1,649,424	INFORMATION DIRECT FROM CONTRACTOR, MAJOR REPAIRS TO 2 ROOMS KITCHEN AND BATHS WALLS DOORS, WINDOWS, FLOOR, PAINTING
45	HASSANE NAJUM	CONTRACT	3,805,515 04-06-81	-0-	-0-	3,805,515	CENTRE COMMUNAUTAIRE EN BANCO DOUROU	100%	-	164m2 81m2 terr.	04-06-81	28-12-81	C 3,805,515	[illegible]
46	EGERAT	CONTRACT	3,199,082 11-06-81	-0-	0-	3,199,082	LOGEM. POUR GARDE ELECTROGENE KOFORO FEN	100%	-	17m2	11-06-81	10-08-81	C 3,199,082	INFORMATION DIRECT FROM CONTRACTOR & OMM
47	EGERAT	DEVIS ESTIMATIF	[illegible] 10-08-81	-0-	-0-	[illegible]	CONSTRUCTION DE SANITAIRE AU LOGEMENTS SEVARE OMM	100%	-	-	[illegible]		C [illegible]	[illegible]
48	GENIE RURAL	CONTRACT NO. 0237	6,320,000 28-07-82	-0-	-0-	6,320,000	DIRECTOR ET SURVEILLANCE 10 MAGASINS OMM	100%		-	28-07-82	31-07-82	C 6,320,000	CONSTRUCTION TOTALE COMPLETED SO SITE SUPERVISION NOT REQUIRED.
49	UNKNOWN					UNKNOWN	ENCLOSURE UN PARTIE DE GARAGE SEVARE OMM	100%	-	-	1982	1982	C 200,000	13.5m2 WALL, 1 METER (1m+1.5m), 1 METER WINDOW (1m+1m)
50	EGERAT	CONTRACT NO. 0236	224,804,918 31-07-82	0-	-0-	AMMUNER 07-03-84	CONSTRUCTION 10 MAGASINS OMM	0		-	31-07-82	07-03-84	-0-	NO RECORDS FOUND A PAYEMENT OF 67,481,737 FR WAS PAID DIRECT BY OSRO
											10104		190,721,277	

2. Road Building Program

a. History

The original Project Paper called for the construction 460 kilometers of low cost feeder roads using force account methods of the Brigade des Pistes Agricoles (Agricultural Roads Brigade) under the direction of Service des Travaux Neufs (New Construction Service), an organization formed under the Direction Nationale des Travaux Publics (National Office of Public Works) to build new roads throughout Mali. After studies prepared by a transportation economist the total length of roads to be constructed was reduced to 307 kilometers while the class of roads was upgraded from C to B. When actual construction got into the sandy areas it became necessary to increase the road width and the thickness to insure stability. This upgraded the road to class A in terms of width and depth although the other standards for a class A road were not always met.

Recruiting and training of the workers lasted from October of 1976 until June of 1978. On-the-job-training was used with the workers serving as assistants to drivers, equipment operators and mechanics working for three other brigades of Travaux Neufs.

The construction of the base camp was started in April of 1977 and, for the most part, completed in February of 1978. The building program for the Brigade base camp called for the construction of a house for the director, a small office building, a warehouse, a covered mechanics' work area, and a barbed wire fence to enclose the compound. The camp was build using a force account system. Labor was provided under contract with a local businessman, Bouffine Traoré. Material purchasing and deliveries, scheduling, and supervision of the works was under the direction of the Chief Engineer.

The covered work area was not built and the fence was built of concrete block. The house was planned at 62 square meters but a total of 107m 2 was built in two separate structures. An uncovered public toilet, a guard house, a small structure in banco for the house were also built although these were not included in the original plans.

Two fuel storage tanks were later installed within the compound. As these tanks were installed for the emergency use of Opération Mils-Mopti only, their costs are not included here but are included in the building costs program of OMM.

The first road construction campaign began in June of 1978 and completed 45 kilometers of 5 meter width road over rocky terrain plus 6 kilometers of 6 meter width road in sandy soil by the end of the campaign in March 1979. From this point on the road remained 6 meters in width. A construction camp was installed at Wo for the first part of the campaign. The final two months of the campaign saw the installation of a second camp at Bankass. In place of the USAID supplied tents, which proved unsuitable for the climate, buildings were rented in the town to house supplies and personnel.

The campaign of 79-80 began in June of 1979 and ended on 31 March, 1980. This campaign saw the completion of an additional 24 kilometers of road and the rehabilitation (required after every rainy season) of 75 kilometers of the completed section.

From July of 1980 through March of 1981 the third campaign saw the completion of another 25,5 kilometers of road. A bridge was built during this campaign and drainage pipes and gabion netting was finally received so work was started on installing these materials. On the later part of this campaign the construction camp was moved to Koro.

The final campaign did not begin until January of 1982 because of funding problems. The funds finally ran out and the campaign ended at the end of February 1982. Another 3,8 kilometers of road were built and 35 kilometers of the completed road were repaired.

During the campaign the workers were provided meals and basic medical care. Between campaigns the day laborers were let go and permanent workers took paid vacations. Primes were not paid, however. The mechanics generally returned to work one month early to prepare the vehicles for the coming campaign. The Director and his assistants were entitled to one month vacation during this period although this was not always observed.

Construction of a reinforced concrete bridge at Nomono was contracted to and built by a local private contractor.

The total road work completed during the life of the project was 104,3 kilometers and the rehabilitation of various segments totaling 110,2 kilometers.

The program fell short of its planned objectives. There was a delay in start-up due to a lack of a decision on what to build. A proper socio-economic analysis was not completed and a final decision was not made until October 1977, ten months after the program was supposed to start. The original equipment ordered was not adequate, not appropriate for the conditions, and was late in arriving. Equipment maintenance was ineffective because of a lack of spare parts (unavailable, no storage facilities, and limited budget) and the lack of ability of local suppliers to provide servicing support. Cash flow problems between the Brigade, CMM, and USAID can account for at least two years of inactivity.

The late arrival of construction materials such as corrugated metal pipe and gabion netting further delayed implementation.

The Brigade was organized into seven units or teams. The Unité Service (Service Unit) was the administrative team and consisted of the Director, his Assistant, the accounting, secretarial, and warehouse personnel as well as the medical and kitchen staff. The Unité Mecanique (mechanics team) was responsible for the repair and maintenance of the equipment. The remaining five teams were production units. The teams were as follows:

- Unité Topo: The surveying crew.
- Unité de Débroussement/Terrassement: charged with clearing the roadway and extracting the material.
- Unité de Transport/Rechargement: responsible for transporting the material.
- Unité Arrosage/Compactage: charged with spreading the material, watering, compacting and finish-grading.
- Unité Ouvrage d'Art: responsible for the installation and construction of drainage devises and erosion control.

Detailed monthly reports were prepared by the Director of the Brigade. These reports indicated the amount of work accomplished, the utilization of equipment, personnel inputs, and materials used. These reports were sent to the Head Offices of Travaux Neufs in Bamako where they were checked, on-site inspections were made, and cost studies were made.

Summary quarterly reports were prepared and sent to OMM and USAID. These reports discussed the work accomplished and problems encountered.

A detailed report was published in September 1981 when the Chef de Brigade was replaced. This report summarized the status of the road program and included inventories of all equipment and materials.

b. Description of Tables

Table R.1 lists the costs and expenses incurred in the operation of the Brigade from its start in 1976 until the termination of the project in November of 1982. The table gives a yearly breakdown of the costs in five major categories: personnel, equipment, construction, adminstration, and OMM direct payments. Not included in Table R.1 are the initial purchases made by USAID and OMM for vehicles, tools, equipment, and office and household furnishings. Also not included are the yearly personnel costs paid by the Government of Mali and the control and inspection costs incurred by the administration at Travaux Neufs.

The individual categories listed in Table R.1 are described below:

SALAIRES PERMANENTS: This is the total net salaries paid to the personnel of the Brigade. It does not include the salaries of the employees paid under the Government of Mali's budget.

PRIMES (ADVANTAGE): This is the bonus paid to all permanent employees. Bonuses were paid only during periods of actual road construction.

I.N.P.S.: This is a social security tax paid to the Institut National de Prévoyance Sociale.

I.G.R.: Impôt Général sur le Revenu is the national income tax.

I.G.R. ADVANTAGES: This is the income tax paid on the bonus money received by the employees.

F.N.L.: Government law requires the payment of a tax to the Fond National de Logement (National Housing Fund).

SALAIRE MANOEUVRE, I.N.P.S. MANOEUVRES, I.G..R. MANOEUVRES: These are salaries, social security and income taxes paid for day laborers hired during the road construction periods.

CAPITAL DECES: These were death benefits paid for a driver killed in an automobile accident while on duty.

INDEMNITE DE DEPLACEMENT: Expenses for transportation, food, and lodging were paid for employees traveling on official business. A large number of trips were made to Bamako to purchase supplies, materials and spare parts. Because of a lack of an adequate communication system, additional trips to Bamako were required to discuss administrative and accounting problems. Travel expenses of Travaux Neufs staff visiting the Brigade on official business are also included in this category.

INDEMNITE DE LICENCIEMENT: This is the severance pay required, by law, to be paid to the employees terminated when the project was cancelled.

CANTINE/SOINS: During actual road construction all the workers were fed in a central dining area. This category indicates the costs of that service. The workers were not charged for this service. This should not be confused with PAM which was a system of providing basic food supplements to the workers' families. The costs of the PAM program were paid by the Government of Mali and the Brigade served only as the distribution agents.

Basic medical care was also provided free to the workers. Some of the medicines were provided by the Government under the I.N.P.S. system but additional supplies were required and their costs are included in this category.

FORMATION: This indicates the costs of the rental of equipment used in the training of the workers from October of 1976 to December of 1977. Salaries paid to the trainees are indicated in Salaires Permanents. Some "per diem" costs are indicated under Indeminité de Déplacement. No other training costs are reported.

MANOEUVRES DIVERS: This indicates the costs of overtime work paid to the day laborers.

PIECES DETACHEES: This indicates the amount of money spent, by year, on spare parts for the vehicles and equipment. These parts were generally used by the mechanics unit for maintenance and repair. No attempt has been made to place a value on any spare parts remaining in the warehouse.

ENTRETIEN MATERIELS: This shows the total costs, by year, of repairs and maintenance work completed by "outside" businesses.

This item includes repairs to the heavy equipment and vehicle repairs for which the Brigade did not have the tools or experience to do themselves. Also included are tire repairs.

CARBURANT/INGREDIENTS: This includes costs of gasoline, diesel fuel, oil, grease, hydraullic fix, brake fluid, etc.

CONSTRUCTION: Construction includes the building of the base camp, general building maintenance, setting-up of the field camps, and those elements of the road construction program involving structures (bridges, culverts, etc.)

MATERIEL DE CONSTRUCTION: The type of items costed here include cement, sand, gravel, reinforcing steel, lumber, electrical fittings, plumbing, etc. There remains a small stockpile of these materials for which no value has been determined.

TRAVAUX (MAIN-D'OEUVRE): This includes the costs of the contract labor used in building the base camp and other day laborers needed from time to time. Day laborers were hired for loading and unloading various materials and supplies and their costs are included elsewhere.

OUTILLAGE DE CHANTIER: The purchase price of small handtools used in the building and maintenance projects is included in this item. The value of the tools remaining has not been determined.

FOURNITURES DE BUREAU: This includes the cost of office supplies such as paper, pens, etc. It also includes the costs of printing the various quarterly and annual reports.

INVESTISSEMENTS (EQUIPMENT): Although OMM provided some office furnishing, it was necessary to make some additional purchases. Some typewriter and calculator costs are included here as well as some kitchen supplies for the canteen.

DIVERS: This category covers the costs of minor petty cash items such as telegrams which are required in running an operation of this size. A large item included in this category is the cost of hiring laborers for the loading and unloading of materials and supplies.

LOCATION BATIMENTS: When the road construction camp moved from Wo to Bankass and later to Koro, the USAID-supplied tents proved unsuitable for living in that climate so several small buildings were rented to house the workers and store supplies. These costs are indicated here.

VIGNETTES: The Brigades cars and trucks were registered annually. The costs are listed here rather than with the other equipment because they were paid directly by OMM and did not go through the accounting system of the Brigade.

ASSURANCE: Insurance of vehicles was also paid directly by OMM. The reported costs are listed here to indicate yearly operating costs but they have already been accounted for under the administrative support costs of OMM. The records indicate that only 2 trucks were insured in 1978, 2 cars and 9 trucks in 1980-81. No evidence was found that claims were filed on either of the two vehicles destroyed by accidents nor, in fact, that either one was insured.

DEPENSES PAR ANNEE: The final category shows the total costs of the road program by year.

Table R.1 also lists in the column marked, IMPAYEES, the outstanding debts by category.

Table R-2. PARCOURS ET CONSOMMATION DES MATERIELS lists the vehicles and equipment used by the Brigade. The total number of kilometers driven or hours used and the total amount of fuel used are also given for each vehicle. The fuel consumption rate was calculated to compare with reported consumption figures for similar vehicles. Detailed monthly usage and consumption figures are available from the Brigade in their reports entitled Tableau d'Utilisation du Materiel. Total fuel usage compares with the tables in the quarterly reports.

Table R-3. PERSONNEL EMPLOYMENT SUMMARY, is a summary table showing the number of employees in each grade and the total man-months of

employment. There is a separate breakdown showing those people on the national payroll although the costs of these employees are not included in this report.

Table R-4. FUNDS APPROVED OR ALLOCATED lists the reported payments and/or advances by OMM under the Brigade account.

c. Methodology

A review was made of all quarterly and annual reports to understand the history of the program. The report prepared to facilitate the change of Brigade directors in September, 1981, was also studied for detailed information.

The monthly tables prepared on vehicle and equipment usage were used to verify that fuel consumption and usage was reasonable.

Table R.1 was prepared using copies of the original invoices sent to OMM for justification of expenses. The copies are available for review at Travaux Neufs and the originals are at OMM in Sévaré. The listing of outstanding debts was compiled from documents on file at Travaux Neufs. Vehicle registration fees were calculated from the official schedule in Table VC-3.

d. Summary Conclusion

The total cost of the road building program was 544.645.953 MF plus direct USAID purchases of $1.602.170 for equipment.

The hidden costs of the program, not included in the figures above, include Government of Mali paid staff (approximately 228 man-months), administrative costs of OMM and USAID, and the costs incurred by STN for administration, supervision, and inspection of the works (World Bank allows a figure of 5-10% for these costs.)

Total local Currency Costs	5[illegible].654.935 MF
Costs Included in Table VC-4	29.174.741 MF
Net Costs	515.480.194 MF

Of the total costs, 448.490.197 MF are reported to have been paid and/or advanced to the Brigade by OMM, leaving a balance of 96.164.738 MF. Travaux Neufs claims that unpaid costs are 95.838.440 MF. The difference could only be resolved by a complete Audit and the team has no comment on this relatively minor difference.

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TABLE R-1

AGRICULTURAL ROAD BRIGADE - OMM
OPERATING COSTS AND EXPENSES
(in MF)

	1976-1977	1978	1979	1980	1981	1982	Total	Unpaid Liabilities
PERSONNEL								
Salaire Permanents	10,600.951	16,400.835	22.568.065	22,618.252	22,636.845	18,002.565	112,827.513	18,002.565
Primes (Avantages)	0	1,349.625	2,533.980	2,091.910	553.490	111.525	6,640.530	111.525
I.N.P.S.	0	3,142.767	3,948.877	4,686.612	4,009.632	3,472.965	19,260.853	8,266.979
I.G.R.	0	626.950	921.435	1,294.790	776.010	148.575	3,767.760	1,220.915
I.G.R. Avantages	0	188.665	386.780	414.425	97,215	0	1,087.085	177.695
F.N.L.	0	164.370	207.824	239.663	200.115	204.075	1,016.047	438.480
Salaire Manoeuvres	0	1,927.680	2,743.995	2,906.915	1,200.405	0	8,778.995	0
I.N.P.S. Manoeuvres	0	54.065	377.896	475.150	0	0	907.111	0
I.G.R. Manoeuvres	0	0	2.175	1.160	0	0	3.335	0
Capital Decés	0	0	0	0	596.810	0	596.810	0
Indemnité Déplacement	386.000	689.000	614.565	810.720	237.340	6.500	2,744.125	0
Indemnité De Licenciement	0	0	0	0	0	892.020	892.020	892.020
Cantine/Soins	0	3,711.655	6,045.320	8,098.330	1,046.910	2,859.900	21,762.115	0
Formation	19,555.855	0	0	0	0	0	19,555.855	19,555.855
Manoeuvres Divers	0	838.615	385.690	458.305	11.000	280.000	1,973.610	0
SOUS-TOTAL	30,542.806	29,094.227	40,736.602	44,096.232	31,365.772	25,978.125	201,813.764	48,555.944
MATERIEL								
Pièces Détachées	409.595	6,129.021	43,931.104	20,990.575	22,294.197	23,810.535	117,565.027	35,092.127
Entretien Materiel	130.150	482.080	10,522.789	5,810.130	90.500	3,451.800	20,487.449	3,132.369
Carburant/Ingredients	2,300.355	14,646.325	32,261.214	52,731.210	15,019.050	12,154.140	129,112.294	9,058.000
SOUS-TOTAL	2,840.100	21,257.426	86,715.107	79,531.915	37,403.747	39,416.475	167,164.770	47,282.495
CONSTRUCTION								
Matériel de Construction	15,545.545	801.290	1,545.700	2,887.165	1,143.355	0	21,923.055	0
Travaux (Manoeuvres)	6,413.990	67.250	53.750	0	0	0	6,534.990	0
Outillage de Chantier	452.705	338.440	593.232	12.900	0	3,050	1,400.327	0
Divers	0	0	0	0	0	0	0	0
SOUS-TOTAL	22,412.240	1,206.980	2,192.682	2,900.065	1,143.355	3,050	29,858.372	0
ADMINISTRATIVE								
Fournitures de Bureau	406.140	573.730	1,013.265	883.355	41.940	349.250	3,267.680	0
Investissements (Equipment)	0	689.310	1,686.500	25.000	0	0	2,400.810	0
Divers	643.615	1,548.544	611.738	145.191	224.878	24.582	3,198.548	0
Location Batiments	0	0	130.000	278.250	128.000	0	536.250	0
SOUS-TOTAL	1,049.755	2,811.584	3,441.503	1,331.796	394.818	373.832	9,403.288	0
OMM								
Vignettes	0	1,240,000	1,360.000	1,480.000	1,260.00	1,900.000	7,240.000	0
Assurances	0	5,591.200*	0	9,374.056*	14,206.485*	0	29,174.741*	0
SUB	0	6,834.200	1,360.000	10,854.056	15,466.485	1,900.000	36,414.741	0
TOT. PAR ANNEE ET GLOBAL	56,844.901	61,154.417	134,445.894	138,714.064	85,774.177	67,671.482	544,654.935	95,838.440

* Costs included elsewhere in this report.

TABLE R-2
AGRICULTURAL ROAD BRIGADE
EQUIPMENT USAGE AND FUEL CONSUMPTION

REGIST., MAKE & MODEL		USAGE * Km or Hrs.	CONSUMPTION* Litres	L/100 Km or L/Hr
0375 Peugeot 404 Banchee	E	123.990	20.103	16.2 L/100 Km
0552 Landrover	E	95.730	18.594	19.4 "
0576 Landrover Banchee	E	72.023	13.261	18.4 "
0604 I.H. Scout Pick up	E	34.865	7.231	20.7 "
1113 Jeep Pick up	E	11.943	1.700	14.2 "
Land 1	E	7.335	1.980	27.0 "
Divers et Imprevus	E	-	7.922	- "
		345.886 Km	70.791 L	
0534 Hino CB212	G	31.185	14.409	46.2 "
0535 Hino CB212	G	77.995	38.588	49.5 "
0536 Hino CB212	G	70.053	35.527	50.7 "
0537 Hino CB212	G	71.562	34.090	47.6 "
0567 Berliet L648R	G	44.166	17.026	38.6 "
0568 Berliet L648R	G	79.368	27.269	34.4 "
0818 Berliet GBH 260	G	39.205	22.138	56.5 "
0819 Berliet GBH 260	G	70.218	38.882	55.4
0271 I.H. F 1954	G	0	0	0
0272 I.H. F 1954	G	5.302	2.128	40.1 "
0538 Hino CB212 Fuel	G	34.061	17.588	51.6 "
0539 Hino CB212 Water	G	55.026	26.182	47.6 "
1083 I.H. F1954	G	485	170	35.1 "
0275 I.H. F1954	G	1.117	450	40.3 "
0276 I.H. F 1954	G	0	0	0
0562 Savien	G	18.950	5.300	28.0 "
1084 I.H. Lowboy	G	675	700	103.7 "
B1 Caterpillar Bulldozer D6	G	2.909 H	68.134	23.4 L/Hr.
B2 Caterpillar Bulldozer D6	G	112 H	3.708	33.1 L/Hr.
G1 Caterpillar Niveleuse	G	1.759 H	25.012	14.2 L/Hr.
G2 Caterpillar Niveleuse	G	2.647 H	43.457	16.4 L/Hr.
Char 1 Fiat-Allis Chargeuse	G	1.880 H	24.784	13.2 L/Hr.
Char 1 Fiat-Allis Chargeuse	G	1.158 H	17.052	14.7 L/Hr.
Com. 1 Gallion Compactor	G	0 H	0	0 L/Hr.
Onan Groupe Electrogène	G	2.039 H	7.502	3.7 L/H
Bernard Moto Pompe	G	114 H	228	2.0 L/H
Leroy Sommer Elect. Lavage		-	-	-
Mosa Elect. Soudure		-	-	-
Ingersol. Rand Compresseur	G	?	494	-
Richier Bétonnière	G	0	0	-
Divers et Imprévus	G	-	8.684	-
			479.502	

Notes:

*Records are not available for April 1981 to December 1981 and from March 1982 to the end of the Program. As these are periods where funding was not available it is assumed that useage was negligible.

1. Various Vehicles on Loan From OMM.

TABLE R-3
AGRICULTURAL ROAD BRIGADE
PERSONNEL EMPLOYMENT SUMMARY

BRIGADE PAYROLL

GRADE	1978		1979		1980		1981		1982		TOTAL MAN MONTHS
	Quant.	Man Months	Quant.	Man Months	Quant.	Man Months	Quant.	Man Months	Quant.	Man Months	
M3	1	12	1	12	2	24	2	24	2	24	96
M2	1	12	1	12	1	12	1	12	1	12	60
M1	4	48	4	48	3	36	3	36	3	36	204
IIC	4	48	4	48	5	60	4	48	4	48	252
7	4	48	4	48	6	72	5	60	4	48	276
6	27	324	27	324	24	288	25	300	25	300	1536
5	13	156	13	156	14	168	14	168	11	132	780
4	11	132	11	132	9	108	9	108	8	96	576
3	9	108	9	108	7	84	7	84	7	84	468
2	8	72	8	72	26	130	2	18	0	0	292
1	0	0	0	0	0	0	0	0	0	0	0
TOTAL	82	960	82	960	97	982	72	858	65	780	4,540

NATIONAL PAYROLL

H	1	12	1	12	1	12	1	12	1	12	60
D	2	24	2	24	2	24	2	24	1	12	108
C	1	12	1	12	1	12	1	12	1	12	60
TOTAL	4	48	4	48	4	48	4	48	3	36	228

I. Well Digging Program

1. History

Phase I of the Opération Mils-Mopti project called for the construction of 54 village wells for domestic and livestock uses. This activity was continued under Phase II.

Negotiations were entered into and a contract signed between OMM and Opération Puits. The contract called for the construction of two wells to a depth of 35 meters each in the Bankass sector and two wells to a depth of 50 meters each in the Koro sector. Each well was to have a short concrete lip around the top, a concrete slab, and two animal watering troughs. Although Opération Puits requested USAID financing of construction equipment and vehicles, this did not appear to have been approved and the equipment was not purchased. Work started in mid-December of 1977 and proceeded slowly. Two of the wells were completed in July of 1980 and the final two were not completed until September of 1980.

Realizing the need for a more productive program, the General Directorate of Hydraulics and Energy, in April of 1978, proposed a program of photogeological and geophysical surveys combined with exploratory small diameter drilling to determine if the quantity of water were sufficient for exploitation. The proposal was to complete 30 wells in 30 months with an average depth of 30 meters. This proposal was never approved and funded.

Instead of the Hydraulics Services proposal, a private contractor was hired to drill the wells. In December of 1979 a contract was signed between OMM and Mali Aqua-Viva for the drilling of ten wells and the installation of pumps. The contract's maximum cost was 65,750,000 MF. The detailed cost breakdown was as follows:

Completed wells	@	75,000 MF per meter
Dry wells	@	38,000 MF per meter
5 "Vergnet" pumps	@	400,000 MF each

The remaining five pumps, Robbins and Myer, were to be supplied by USAID and installed under this contract as part of the completed well price.

Work started in February of 1980 and by mid-September, 15 wells had been drilled. Only 5 of the wells produced water. Three wells were provided with the Robbins and Myers pumps. The well at the headquarters of CMM in Sévaré was provided with an electric pump and the well at P.A.R. Koporo-Pen was provided with an electric pump but is was never installed.

The final effort under the well digging program was the installation of a photovoltaic powered pump at an existing well in Bankass. The civil works were contracted in June of 1980 and the pump installed by the suppliers in October of 1980. Although plans and estimates had been prepared for the installation of a water tower and a distribution system, this work was not done.

2. Description of Tables

Table W-1 lists the wells dug under this program by sector. The date of termination, method of digging (hand or drilled), total depth, well capacity, rest water level, and type of pump installed are also listed. Under Observations is a brief listing of additional works built in connection with the wells.

Table W-2 indicates the related costs of each well and its various components.

Annex E includes more detailed information on each well.

3. Methodology

For the drilled wells the costs are clearly defined in the contract with Mali Aqua-Viva. These contracted figures were used in determining the total cost of each well. The Mali Aqua-Viva contract had a fixed total drilling depth of 845 meters. The actual total drilled depth was 1,055 meters. The extra 210 meters was not charged for, so the total amount paid to Mali Aqua-Viva was 43,339,500 MF.

Determining the costs of the hand-dug wells was complicated by the fact that the original agreement called for the completion of a total of 170 meters of well and only 130.4 meters were dug. We have used unit prices contained in the original estimate to calculate the total completed well costs (See the annex for details.) It should be noted that the amount of money actually paid by CMM was the original contracted amount.

4. Summary Results

A total of 19 wells were constructed under this program. Of these, 9 wells produced water. Three hand pumps and one electric pump were installed. A solar pump was installed in an existing well.

The total justifiable costs of the well digging program were 77,597,026 MF.

	Actual Amount Paid	Justifiable Costs
Hand-dug wells	35,045,740 MF	27,171,706 MF
Drilled wells	43,339,500 MF	47,394,500 MF
Solar pump installation	2,630,820 MF	2,630,820 MF
	81,016,060 MF	77,197,026 MF

J. Administrative Support

1. Cost Components

a. Vehicle Operation and Maintenance

The CMM Project extended over a large area where communication distances were long and roads fair to non-existent. One village, Dianangourou, requires two or more days to reach by 4-wheel drive vehicle, partly over a roadless track. The project area increased from 41,124 square kilometers in 1975 to 70,750 by 1980; the number of Development Sectors from three to seven; the Rural Development Zones from 20 to 45 by 1982; the Base Sectors from 75 to 252; and villages serviced, from 527 to 1550 (See Annex V-1). The range of distances between Sévaré and the seven

TABLE IV-1

WELL DIGGING PROGRAM

Number	Place	Date	Method	Total Depth	Discharge Rate	Static Level	Pump	Observations
	MOPTI							
1	Sevare (OMM)	16/2/80	drilled	51.60	3 m^3/h	16.80	electric	
	BANKASS							
2	Bai	14/3/80	drilled	102.00	0.2 m^3/h	32.49	none	
3	Bai	17/3/80	drilled	68.00	none	--	none	
4	Bankass*	--	--	--	--	--	solar	Fence, reservoir, animal water through
5	Diabel	8 July 80	hand dug	24.65	--	23.00	none	Top lip 0.55m, slab 2.55m, 2 animal water through
6	Kolokan-Peulh	8 Sept.80	hand dug	45.70	--	43.05	none	Top lip , slab 2.9m, 1 animal water through
7	Korassagou	20/3/80	drilled	86.00	4 m^3/h	52.07	R&M	
8	Souhe	24/3/80	drilled	67.00	8 m^3/h	30.33	R&M	
9	Segue	27/3/80	drilled	72.00	200 l/h			
10	Segue	30/3/80	drilled	45.00	none	--	none	
	KORO							
11	Karakinda	4 July 80	hand dug	51.10	--	46.80	none	Top lip 0.55m, slab 1.6m, 2 animal water through
12	Diankabou	4 Sept.80	hand dug	9.00	--	4.00	none	Top lip 0.40m, slab 2.3m, 2 animal water through
13	Dounoupa	26/2/80	drilled	84.00	none	--	none	
14	Kassanwa	8/3/80	drilled	90.00	none	--	none	
15	Kassanwa	10/3/80	drilled	65.50	none	--	none	
16	P.A.R. Koporo-Peul	23/2/80	drilled	49.50	12 m^3/h	36.93	electric	
17	Sobangouma	28/2/80	drilled	93.50	none	--	none	
18	Sobangouma	6/3/80	drilled	75.00	none	--	none	
	BANDIAGARA							
19	Dourou	21/2/80	drilled	56.50	none	--	none	
20	Dourou	2/4/80	drilled	50.00	3 m^3/h	7.45	R&M	

*Existing well, installation of solar pump.

TABLE W-2

WELL DIGGING COSTS

Number	Place	Total Depth m	Unit Price	Total Price MF	Pump Costs	Other Costs MF	Total Price (Not Including All-Purchased Pumps)
	MOPTI						
1	Sevare (OMM)	51.00	75.000	3.825.000	400.000	0	C 4.225.000
	BANKASS						
2	Bai	102.00	38.000	3.876.000	0	0	C 3.876.000
3	Bai	68.00	38.000	2.584.000	0	0	C 2.584.000
4	Bankass	--	0	0	193.475 FF*	2.630.820	C 2.630.820
5	Diabel	24.65	165.825	4.087.590	0	504.899	E 4.592.489**
6	Kolokan-Peulh	45.70	190.094	8.687.274	0	549.651	E 9.236.925**
7	Korassagou	86.00	75.000	6.450.000	$2981.45 US *	0	C 6.450.000
8	Souhe	67.00	75.000	5.025.000	$2981.45 US *	0	C 5.025.000
9	Segue	72.00	38.000	2.736.000	0	0	C 2.736.000
10	Segue	45.00	38.000	1.710.000	0	0	C 1.710.000
	KORO						
11	Karakinda	51.10	201.711	10.307.420	0	352.593	E 10.660.013**
12	Diankabou	9.00	254.167	2.287.501	0	394.778	E 2.682.279**
13	Dounoupa	84.00	38.000	3.192.000	0	0	C 3.192.000
14	Kassanwa	90.00	38.000	3.420.000	0	0	C 3.420.000
15	Kassanwa	65.50	38.000	2.489.000	0	0	C 2.489.000
*16	P.A.R. Koporo-Pen	49.50	75.000	3.712.500	0	0	C 3.712.500
17	Sobangouma	93.50	38.000	3.553.000	0	0	C 3.553.000
18	Sobangouma	75.00	38.000	2.850.000	0	0	C 2.850.000
	BANDIAGARA						
19	Dourou	56.50	38.000	2.147.000	0	0	C 2.147.000
20	Dourou	50.00	75.000	3.750.000	$2981.45 US *	0	C 3.750.000
						Total	77.197.026

*Direct costs paid by U.S.A.I.D.

**Operation Puit was paid a total of 35.045.740 MF, the contracted amount. The total estimate for work completed, based on the original estimate, is 27.171.706 MF.

Development Sectors was as little as 13 km and as great as 185 km. Distances between each Development Sector and its satellite Development Zones varied from a few kilometers to as many as 166 km. (see Annex D, V-2)* Finally, travel and transport between OMM and the Ministry of Agriculture and USAID in Bamako required, because of inadequate public transport, frequent trips by OMM vehicles. The round-trip distance between Sévaré and Bamako is about 1300 km.

In addition to operational travel, OMM was required to deliver agricultural equipment and supplies to Development Sectors and Zones. It was also regularly required to load surplus grain from collection points throughout the project area and deliver it to OPAM in Mopti.

To provide logistic services, two different means of transport were used. The motor pool operated passenger sedans, four-wheel drive vehicles (Land Rovers, International Scouts, etc.), medium and heavy trucks. The sedans were used chiefly between Mopti, Sévaré and Bamako, though some Development Sectors could be reached with them. Four-wheel drive vehicles were used in the Project area as far as the Development Zones and sometimes beyond to Base Sectors and even attainable villages. Each of the seven sector chiefs was assigned one such vehicle. In addition to supervision of his sector, he was required to make at least one monthly trip to Sévaré to attend a meeting of sector chiefs and for vehicle maintenance. Several such vehicles were also maintained at Sévaré headquarters for travel into the Project Area. The trucks operated wherever deliveries and grain collections were required, often over sandy and difficult terrain.

For personnel below division chiefs at Sévaré and sector chiefs in the Project Area, travel was chiefly by a small number of motorcycles and a large number of mobylettes. Ten Honda motorcyles were purchased by OMM in 1980 and distributed in the Project Area to deputy sector chiefs and

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* See Annex D for all annex tables referenced in this section.

trainers. All other travel was by mobylettes which the Opération purchased and sold for cash or, usually, on credit to most of the lower echelon personnel for travel between OMM and home and for extension, supervision and training activities in the field. Allotments of fuel were provided free but no maintenance was given by the Motor Pool.

i) Registration of vehicles: The Opération annually registered (Vignettes) all its cars and trucks. Initially, this was free but, to avoid abuse of privileges, regular registration fees were imposed in 1978.

ii) Insurance: In 1975 vehicle insurance became obligatory. The Opération initially insured both its motor fleet and its mobylettes. In 1978, mobylette insurance was dropped and motor insurance extended to full coverage (Assurance tout risque), at substantial expense. Insurance on motor vehicles of both OMM and Road Brigade was paid by OMM. No charge was made to the Brigade. The insurance carrier was "Compagnie Nationale d'Assurance et Réassurance" (C.N.A.R.). Accident insurance was recovered by OMM on three total wrecks and repairs to some damaged vehicles were reportedly arranged and paid for by C.N.A.R.

iii) Maintenance and Repairs: Maintenance of a large fleet operating in the Opération's terrain is, at best, difficult. The Opération was not equipped for this. Its maintenance facilities were woefully inadequate. Consequently, major electrical and mechanical maintenance, welding and body work were performed by commercial garages, where effective control of charges was not easy. In addition, the fleet composition changed drastically over the life of the Project. At the start, the fleet was composed of vehicles commonly used in Mali, i.e., Land Rovers, Peugeots, Renaults and Berliet trucks. Parts and maintenance for these were readily available. In 1978, USAID changed its procurement policy to American manufactured vehicles, mainly International Harvester (I.H.): Scout pick-ups, Scout station wagons, and very large I.H. trucks. A large

deep pick-up was also procured. These vehicles were poorly selected for Mali because of heavy fuel consumption, dearth of spare parts and unfamiliar maintenance requirements. USAID also procured two Hino KB 712 Diesel trucks and two Toyota Land Cruisers which were successful. This unfortunate procurement policy increased the Operation's fuel bill and created insurmountable maintenance problems. Some vehicles lasted only a few months and were cannibalized to keep others operating. Hence, average vehicle life declined. Throughout the Project, average vehicle life was 39 months. Prior to the Project, in the early years of the Opération, vehicle life averaged 53 months. By the middle of the Project, it had dropped to 32 months and was 31 months in the last years of the Project (see Annex D, V-3).

iv) Spare Parts and Tires: The policy of OMM was to maintain a large stock of locally (Mopti or Bamako) obtainable spares for Land Rovers, Peugeots, etc. Tires were also available for all vehicles. On the other hand, there was no stock of spares for American vehicles because these were not locally available and the import of these by USAID was very slow.

There is no rational explanation for this OMM policy, the net result of which is a large stock of unused spares currently on hand, for which the salvage value is unknown (see Annex D. V-4 - OMM Inventory, dated February 29, 1984). To determine whether such purchases by OMM were necessary, the procurement and motor pool chiefs at Opération Riz Mopti (ORM) were consulted. The financial controls at ORM do not permit large purchases. Stocks of some parts (those best purchased in Bamako) never exceed a three-month supply. Other parts are purchased locally as needed. ORM was unable to provide standards on parts usage for their vehicles, many of which are similar to those in the OMM fleet.

v) Fuel for vehicles, motorcycles and mobylettes: With the exception of some Diesel trucks and three I.H. Diesel pick-ups acquired in 1981,

OMM's fleet was gasoline powered. This increased fuel costs substantially as the price of Diesel fuel in Mali is about 30% lower than that of gasoline. Gasoline was the highest operating expense of the motor pool. Its allocation, distribution and control required complex procedures and OMM tried many ways in an effort to contain fuel costs. Gasoline was needed at OMM headquarters, at the Development Sectors, Zones and Base Sectors and on the road between Sévaré and Bamako. The following measures were instituted at various times during the life of the Project:

- Cash purchases were limited to emergencies. These were reimbursed at OMM from petty cash.

- Coupons (bons) for unspecified amounts, good for credit at the TOTAL stations. After the purchase, the amount was written on the coupon and stub or duplicate coupon. The original coupon remained with TOTAL and the stub or duplicate was returned to OMM for future verification of TOTAL invoices. Later, a limit was put on the amount of fuel which could be purchased with a coupon.

- Prepaid books of tickets (or perhaps purchased on credit) for stated amounts of fuel were issued to drivers.

- In the Project areas where no fuel pumps existed, fuel was purchased from local dealers and reported on Sector expense reports, but the price was considerably higher than at service stations where gasoline prices are uniform throughout Mali (Diesel fuel prices are augmented by the cost of transport).

- To overcome the higher local prices and potential abuses of all these procedures, fuel tanks were installed in Sévaré, and fuel from these was trucked in drums to distribution points in charge of Sector and Zone chiefs. Vehicles were expected to obtain fuel whenever possible from the central tanks at Sévaré.

- From September 1978 to early 1982, fuel use was carefully recorded for each motor vehicle by a zealous Transport Chief. Unfortunately, he left Sévaré when USAID Project support was canceled. He might have been a source of useful information. Each vehicle was equipped with a log book (carnet de bord) in which every trip and its fuel consumption were recorded. These were posted to monthly kilométrage and fuel consumption sheets (Relevé Justificatif Kilometrique des Consommations) by the Sector and Division Chiefs and turned over to the Transport Chief at the monthly meeting of the Sector Chiefs. From these, the Transport Chief prepared a Monthly Fuel Consumption Sheet (Situation Mensuelle de Consommation), calculated and added, from current prices, the fuel costs. Later, he posted this information to an Annual Fuel Consumption and Cost Statement (Situation Annuelle de Consommation) showing, for each vehicle, fuel consumption by months, total consumption and cost. The information was very complete. From an examination of several statements, the data appeared usually to be consistent. It is not known what use was made of these statements for controlling fuel expense.

- Several efforts were made to allocate monthly fuel quotas for each vehicle. This proved difficult because of the non-uniformity of terrain and distances. Allocations were also made for mobylettes; both in the field and at OMM Headquarters. At Headquarters, the number of recipients and the allocations oscillated up and down, probably in relation to appeals and counter control efforts. These allocations ceased in 1982.

  Fuel for Diesel vehicles was handled in the same way but was easier to control as the number of recipients was far less than for gasoline.

vi) Fuel for generators: Two Diesel generators were used at the Sevare Headquarters. These powered the office and OMM residences. The first, a small 25 kw Lister, operated from the time the office

compound was opened there, in January 1978, until late in 1980, when it broke down. The second was a larger Caterpillar 52 KW generator and operated from January 8, 1981, until sometime in 1982.

Diesel fuel was stored in a 1000 litre tank next to the machine and transferred manually to the generator's tank. Detailed consumption records were kept for some time by the Chief Mechanic (Chef d'Atelier). The machines functioned on a regular schedule, 16-1/2 and 17 hours/day, respectively.

vii) Lubricating oils: Lubricating oils for motor vehicles and generators were bought in two liter cans, stored for use and distributed as needed to the Sectors and Zones. Like spare parts, purchases were rather erratic in volume.

b. Office Supplies

The Opération had the usual requirement for office supplies, paper, pencils, ball-points, reproduction paper, account books, etc. All of these were a charge to the OMM operating budget, hence reimbursable by AID, and procured informally from normal local suppliers on an off-the-shelf basis. Suppliers were the commercial firms, mostly in Bamako, engaged in the distribution of such material. Prices were the normal market prices. No attempt has been made to break that category down into sub-components, i.e., paper use, for example. For this routine, supply operations expenditures are assumed to equal justifiable costs and vice versa. Cost figures have been derived from examining purchase orders, bank check stubs and cash vouchers indicating supplier, goods supplied and amount paid.

c. Other Administrative Costs

At this late date it is not possible to determine what were the precise requirements for other administrative support to the field and headquarters of OMM for the period 1976-1982. However, the kinds of

expenses asked for in the statement of work have been identified. In addition, certain other costs have been separately identified and included in overall totals. Identified maintenance costs are not of those costs included in the section covering construction costs which were, in any case more rehabilitation and repair than maintenance. Other maintenance costs cover equipment (other than vehicles) as well as structures. As previously noted, travel and per diem are elsewhere reported under personnel costs.

Actual charges were determined by a review of original accounting documents and records. These charges reflected certain historical events; for example, OMM moved into its new headquarters in 1979; this shows up in the accounts for installation expenses. The GRM changed its rental policy for official housing of middle grade officials in 1981 (the accounting records show this). In some cases the team felt that certain charges actually paid did not represent justifiable costs. This was true of public relations costs including fairs, expositions and signboards. These costs were reduced by nearly 24 million Malian francs. Back-up tables for the cost summarized in the Other Administration Costs Table are in the team's working papers. They were carefully reviewed to avoid double counting and were related directly to the Opération's numbered accounts.

2. Cost Estimates

a. Vehicles and Diesel-Electric Generator Operations

Table VC-1* (Operating Expenses of the Motor Pool, Motorcycles, Mobylettes and Diesel-Electric Generators, 1976-1982) summarizes the operating expenses, paid by OMM, for all Opération vehicles, including motorcycles and mobylettes, as well as the generation of electricity at Sévaré for offices and residences. Wherever possible, the expenses

* VC Tables 1-15 are presented at the end of this chapter.

were determined in two ways: (a) by an historical analysis or estimate of reasonable expenses, and (b) from accounting or other records, usually the general ledger or the chronological file of invoices. The results are shown in adjacent columns. In some instances, there was insufficient information to use the analytical method, in which case the accounting data were used in both columns so as to obtain comparable totals. These items are registration, fees, insurance, maintenance and repairs, spare parts and tires, gasoline, Diesel fuel and lubricating oils. The similarity of the two totals is not necessarily a verification of the accounting data since the individual cost elements in the analytically determined expenses sometimes differed from those from the accounting data for the same element.

i) Vehicle registration fees (Vignettes): Table VC-2 (Registration Fees of OMM Vehicles) shows the calculations of registration fees for the years 1978 to 1982. Prior to 1978, registration of OMM vehicles was free. The fee is based on official horsepower ratings of each vehicle, not to be confused with engineering or sales horsepower. The official horsepower ratings for all OMM vehicles and the registration fee scale are shown in Table VC-3 (Official Horsepower and Registration Fee Scale). The total shown in Table VC-2 is the justifiable cost. The actual cost may have been lower as OMM is believed to have declared a lower than official horsepower ratings to the Registry Office for some of its heavy trucks. The accounting record of registration fees was not obtained.

ii) Insurance: Insurance expense is shown in Table VC-4 (Vehicle Insurance). It was obtained from the general ledger and, according to the Chief of D.A.F. (Administration & Finance Division), compared with invoices from C.N.A.R. and insurance statements prepared from these. No effort was made to calculate insurance premiums analytically. It would have required considerable time at

the Opération and possibly also at the C.N.A.R. office in Mopti. Table VC-4 also shows the recovery from C.N.A.R. on vehicles which were totally damaged in accidents or by fire. This was also obtained from the general ledger. Minor accidental damage was stated to have been paid, in some cases, directly by CNAR to the repair shop. Although insurance covered at least some of the Road Brigade vehicles and at least one serious accident occurred, there is no record of any insurance recovery.

iii) Maintenance and Repairs: The annual and total expense is shown in Table VC-5 (Maintenance and Repairs of Vehicles), drawn from the general ledger. This, presumably, includes any outside repairs made to the generators. There was no way of developing a justifiable cost by analytical means.

iv) Vehicle Spare Parts and Tires: The cost of annual and total purchases of parts and tires is shown in Table VC-6 (Purchases of Spare Parts and Tires), drawn from the general ledger. To determine the net cost, the salvage value of a substantial remaining inventory (Annex D, V-4, Physical inventory dated 29 February 1984) should, if possible, be determined and deducted. Oil and fuel filters for the generators (estimated quantity for the Caterpillar are 48 and 20, respectively) and any necessary parts are, presumably, included.

v) Gasoline and Diesel fuel for vehicles, motorcycles, mobylettes and electric generators: This was the largest expense item in the vehicle and generator operation. It is shown by cost elements in Tables VC-7 & 8 (Cost of Fuel used by OMM - Gasoline - Diesel). Fortunately, records exist by means of which actual consumption could be determined for all the cars and trucks over a three-year period. These were then analytically projected for other years. Records of some mobylette allocations were available and reasonable estimates could be made for other mobylettes and for motorcycles.

The cost of fuel purchases was also extracted from the invoice file, to which was added the cost of cash purchases (a relatively small amount) to obtain the total recorded fuel cost. Finally, the amounts on fuel coupons (bons) stubs (or duplicates) were added and compared, year by year, with the invoice data. The figures of these comparisons were remarkably close (see Annex D, V-5).

The analytical study was made from the following documents (see Part E-1a (v) Fuel for vehicles....etc.):

- Monthly Kilometrage and Fuel Consumption Sheets (Relevé Justificatif Kilométrique de Consommation)
- Monthly Fuel Consumption Sheets (Situation Mensuelle de Consommation)
- Annual Fuel Consumption Sheets (Situation Annuelle de Consommation)
- Vehicle inventories made at various times.
- A vehicle historical log prepared post-facto by the current Transport Chief.

In addition, and especially during the initial stages, the memory of the Chief of Inventory Accounting was most helpful. Later, as the analysis progressed, memory figures were adjusted when actual data was found which sometimes differed from memory. The analysis, made by an ad hoc committee, proceeded in the manner shown below. The committee was chaired by the Chief of Procurement (Chef de L'Approvisionvement), assisted by a member of the study team.

First: A graphical-historical chart of every vehicle assigned in any way to the Opération (Chronologie Historique des Véhicules...) - (Working papers) was made. This was made on three multi-column accounting work sheets with the following vertical columns:

1. Numerical order of vehicles, by date of acquisition. These serve as reference numbers in subsequent tables. Vehicles acquired prior to 1976 were included only if they were operable from January 1976 on.

2. IT (Immatriculation Temporaire) registration number, if any.

3. Make and model and if gasoline or Diesel powered.

4. National or RM registration number. Most IT registrations were eventually changed to RM. (République du Mali)

5. Month and year of acquisition.

6-14. Operating years from 1976 to 1984.

15. Period of vehicle activity (1976-1982) in months.

16. Date and reason for immobilization of vehicle, its disposition or present location.

17. Allocation (i.e. Director, Division Chief or service, Sector Chief, etc.)

18. Principal use.

19. Original purchaser, i.e., GRM (some early vehicles); OMM; USAID.

Horizontal arrows were drawn for each vehicle in the appropriate columns (6 to 14) from the time of its availability to its immobilization (or, in a few cases of vehicles still operating, to the end of December 1984). From these arrows, the useful project vehicle life (between 1976 and 1982 only) was counted in months of availability for each of the 66 vehicles listed in column 1, and entered in column 15. This historical, graphical and statistical table provided, initially, a reasonably accurate history of every vehicle. As the analysis continued, vehicle life was adjusted from usage data derived from the other previously listed records. The historical-statistical table thus became an almost historically accurate reference document for each vehicle.

Second: Using the records already cited and other available information, and referring to the historical-statistical table, the committee developed a Cost and Operating Expense Table for each year in which complete data was available, namely 1979, 1980, 1981 (Annex D, V-6, Coûts et Dépenses de Fonctionnement des Véhicules). The partial data

for 1978 and 1982 was too scanty to be used. The first two columns of this table identified the vehicle by reference number (from the previous table), make, model and engine type (gasoline or Diesel*), and RM registration number (or, if none assigned, by IT number). In the other 11 columns were entered the months of operating availability in that year; the number of months actually used (grain trucks were not used throughout the year and some other vehicles were temporarily immobilized for repairs or other reasons); the acquisition source, year, and cost if purchased by OMM; insurance (as a total for all vehicles only); registration fee; kilometrage; litres of fuel used; cost of fuel. From this data, the average fuel consumption (litres per 100 Km) and the average price of fuel for each vehicle were calculated and entered in the next two columns. Comments were entered in the last column.

Third: The kilometrage, average fuel consumption and calculated fuel price were methodically examined and compared with consumption standards. A table of average fuel consumption standards had previously been prepared with information from OMM, Compagnie Malieme de Development Textila (CMDT) and ORM (Annex D, V-7). For I.H. vehicles, standards were available only from OMM. Averages from the three sources were very similar. Some annual kilometrages for headquarters sedans appeared excessive (up to and even over 60,000 Km.) and were questioned. The explanation given was frequent project business trips to Bamako. No adjustments to these figures were made. Most fuel consumption figures compared favorably with those in Annex D, V-7, although there were a few obvious errors (odometers often ceased to function and kilometres may have been estimated). A few consumption figures were excessive, notably for Peugeot sedans and some I.H. grain trucks. There was no explanation for the former other than that travel to Bamako was made at high speed. For the trucks, which often carried fuel drums to the field, difficulty of control was the reason given. The calculated unit price of fuel related well to a schedule of fuel prices, also previously prepared (Annex D, V-8) except for a few of the Diesel vehicles, where the

* Diesel engines were identified by a capital D in column 2.

gasoline price had obviously been mistakenly used by the Transport Chief in arriving at the fuel cost. In these few cases, cost and price were adjusted in the table.

Fourth: Similar cost and operating expense tables (Annex V-6) were prepared for the years 1976, 1977 and 1978, even though factual data on vehicle usage did not exist. Vehicle by vehicle extrapolations were made using three-year kilometrage and consumption averages from the years 1979-1981. If the same vehicle did not operate in those years, averages from similar vehicles were used. Thus, the same average (or estimate) may appear in succeeding years for the same vehicle or even for several vehicles of the same type. Fuel cost was calculated using average fuel prices (Annex D, V-8) for the months of vehicle activity.

Fifth: The columns in all six tables (1976-1981) were totalled. For 1979-1981 the average actual vehicle use in relation to its theoretical availability was consistently very nearly 80%. Therefore, the kilometrage, fuel consumption and cost for the extrapolated years 1976-1978 were adjusted to 80% of the estimated values (which had previously been calculated for the total period of each vehicle's availability).

Sixth: Vehicle use in 1982 fell dramatically. Therefore, extrapolation figures would not be valid. For this year, actual purchases of fuel were used in establishing the total fuel consumption and cost.

Seventh: Annual totals for vehicle availability, usage, kilometrage, fuel cost, average consumption and price were summarized in Table VC-9 (Distance and Fuel Consumption by OMM Motor Pool Vehicles-Cars and Trucks) and transferred to the two summary tables for gasoline and Diesel fuel, respectively: Fuel costs of OMM Gasoline and Fuel Costs of OMM Diesel Fund (Tables VC-7 and VC-8).

Eighth: Fuel cost for motorcycles and mobylettes were calculated in three categories and are shown in three columns and a total by year in

Table VC-10. (Fuel consumption by OMM motorcycles and mobylettes gasoline): In the rural area, the number of mobylettes was determined from the OMM personnel assigned to the sectors since it was OMM policy to sell a mobylette to every rural employee. These numbers are shown in column 2 of Table VC-10. Applying an estimate of 30 litres per mobylette per month (which allowed about 1200 Km. of use/month at an average of 40 Km/l) total mobylette consumption is shown in column four. An estimate of 40 litres/month was applied for the ten small motorcycles assigned to deputy sector chiefs and trainers. Headquarters consumption was obtained from actual records of allocations in Table VC-11 (Summary of Fuel Allocations to Headquarters Personnel of OMM - Gasoline for Camico Mobylettes, in Liters). Totals from the above (VC-10 and 11) were posted to the gasoline usage table (Table VC-7).

This estimating procedure for gasoline usage by individuals riding motorcyles or mobylettes in rural areas was necessary since no data on usage or allocations was available such as that found on gasoline allocations to headuarters personnel. Similarly, in order to determine the number of mobylettes in use in the field, information regarding payroll deductions for mobylette credit was rejected because it did not reflect cash sales, motorcyles in use but already paid for or overlaps in deductions when a few payments remained on the old machine.

Consequently, two basic assumptions were used: (a) that every employee in the field below Chief or Deputy Sector Chief owned and used officially a motorbike, this was OMM policy, and (b) that approved travel by mobylette or motorcycle would require an average of 30 liters and 40 liters per month, respectively.

These two assumptions can be questioned but they do reflect such realities as field transport needs and the differences in distances to be covered as between field operations and local transport at the headquarters site.

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Ninth: Calculation of fuel used by the Diesel-Electric generators is shown in Table VC-12 (Diesel Fuel Consumption by Electric Generators). Consumption and hourly operating records over a one-month period (May 1980 for the Lister and May 1981 for the Caterpillar) were obtained from the Chief Mechanic (Annex D, V-9). From these, hourly consumption figures were calculated for each machine. The Lister operated 16-1/2 hours per day and an estimated 6 days per week, from early January 1978 to about October 1980, using 4.31 litres per hour. From this, consumption for each year was calculated.

The Caterpillar is equipped with a usage counter in hours of use. The total shown was 9628 hours. It operated 17 hours per day, 7 days per week. The average hourly consumption was 10.81 litres per hour. Put into service on January 8, 1981, the machine operated an estimated 357 days in 1981 and 202 days (or more days at less hours) in 1982. These two figures total the hours recorded on the machine counter.

The totals in Table VC-12 were posted to Table VC-8 (Cost of Fuel Used by OMM - Gasoline).

Tenth: The quantity of fuels purchased was obtained from OMM files of invoices, usage coupons and records of direct purchases. Yearly totals were multiplied by the average price for each fuel during each year - Table VC-13 (Purchases of Gasoline and Mix) and Table VC-14 (Purchases of Diesel Fuel.)

These quantities and values were posted to the columns on the right of Tables VC-7 and 8.

Eleventh: Totals in Tables VC-7 and VC-8 were posted to the general table of vehicle and generators expense - Table VC-1 (Operating Expenses of the Motor Pool, Motorcycles "Mobylettes" and Diesel-Electric Generators, 1976 - 1982)

Lubricating Oils: Annual consumptions from 1978 to 1982 obtained from OMM records were multiplied by the annual average price of oil in two litre cans. OMM states that most oil was purchased in this way. The results are shown in Table VC-15 (Purchases of Lubricating Oils). Prices were obtained from the files of ORM - Approvisionment. Not included, is lubricating or axle grease. This information was not obtained. The total from this table was posted to Table VC-1.

The total cost for operating motor vehicles and for operating the electricity generating plants, including maintenance and repairs, was 1,004,585,000 Malian francs.

b. Office Supplies

The total expenditure, i.e., cost for office supplies during the period 1976-1982, is established at 104,000,000 Malian francs.

c. Other Administrative Costs

The following is a tabulation of identified other administrative costs. The list generally follows the accounting classifications of OMM but is also responsive to the statement of work. General management and publicity costs have been reduced to eliminate certain costs that the team felt were not justified.

OTHER ADMINISTRATIVE COSTS

Post, telephone, telegraph	2,465,660
Utilities (water, electricity)	7,798,900
Rents	18,349,535
Maintenance & Repair-Buildings	10,074,076
Maintenance & Repair-Equipment	28,330,712
Misc. Maintenance Costs	13,505,410
Studies and Reports	23,265,880
General [illegible] & Publicity	84,909,991
Other [illegible] Services	14,691,350
Installation Costs	41,052,355
Total Other Administrative Costs	244,443,869 Malian francs

K. Equipment Procurement

1. Procurement Needs

The Opération required a wide variety of equipment and materials to carry out its broad responsibilities. During the nearly seven-year life of the Project, commodities worth in the vicinity of three million dollars were procured both by USAID and by OMM itself. The principal categories of commodities procured were: motor vehicles, tools, tires and parts; electric generators; office and household furniture and equipment; blacksmith tools and material; photographic and communication equipment; rural and agricultural equipment and supplies; water pumps; road construction major and minor equipment; construction materials; supporting equipment.

As a matter of general policy, USAID usually procures offshore commodities requiring foreign exchange and the project procures locally available commodities. In fact, this principle was not observed and there were quite a few instances of similar categories of equipment being purchased by both organizations. Since USAID did not, until nearly the end of of the Project, monitor the content of OMM reimbursement requests, the acquisition of commodities which might better have been procured by USAID was not detected until quite late.

2. Division of Procurement Responsibilities

a. USAID - Most equipment, including motor vehicles, road construction equipment and materials, pumps, electric generators, grain mills, air-conditioners, office machines, etc., was procured and paid for by USAID. Both offshore and local purchases were made. Total USAID commodity expenditures, from the accounts, were $2,721,000 ($2,241,000 in Phase I and $480,000 in Phase II). An item-by-item analysis of all USAID procurment expenditures under the Project results in a total costs of just under $2,635,000 ($1.033 million for the Opération and $1.602 million for the Road Brigade). The latter amount is very close to that

obtained from Road Brigade Documents. When Project procurement by USAID was started in 1976, there was only a skeleton mission with a CDO in charge. Consequently, some of the files are incomplete, particularly in transport and handling charges. This would seem to explain the relatively small difference of $86,000 between total accounting expenditures and the total from the procurement documents. USAID equipment procurment is shown in Tables P-4 and P-5 (Analysis of USAID Procurement for OMM -- excludes Road Brigade and Ditto -- Road Brigade only).

For OMM use, USAID procured 32 vehicles under the Project from 1976 to 1981. These were: five Land Rovers, four Peugeots, one Renault (the last five probably Sdans), ten I.H. Scouts and pick-ups, seven I.H. grain trucks, two Hino ten ton trucks, two Toyota Land Cruisers and one Jeep pick-up J20. Another 21 vehicles were procured for the Road Brigade. This is more fully discussed in the section on road construction.

b. OMM - Some major items of equipment were procured by OMM -- principally vehicles. The project inherited a number of vehicles from PL-480 support activities prior to 1976. From 1976 to 1980, OMM purchased 12 motor vehicles, of which 10 were passenger types and two 4-wheel drive types. The latter were for sector chiefs while the other 10 were for OMM Headquarters staff or the Agricultural Department in Bamako. The vehicles purchased were: 2 Land Rovers, 6 Peugeots and 4 Renaults, for a total cost of 41,700,006 M.F. Two of the passenger vehicles were bought to replace 2 vehicles destroyed by accidents. One of replacement vehicles was subsequently destroyed by fire. Insurance recovery of 12,625,000 MF on the 3 destroyed vehicles partly offsets the total cost of vehicle purchases, the net cost of which was 29,080,000 MF. No other insurance was collected, though damaged vehicles were, reportedly, repaired and paid directly by C.M.A.R.

Further offsetting this cost is the salvage value obtained from the sale of superannuated vehicles. The Opération records show that about 19 vehicles were thus disposed of but the amount recovered was not obtained. A memorandum in USAID/ADO files lists individually exactly 19

vehicles thus disposed of, 16 on February 4, 1981, one in August 1981 and two in October 1980 (Table P-3: Superannuated Vehicles Sold). The sale proceeds were 5,870,000 MF, for an average of 308,970 MF/veh. The Audit Report lists ten vehicles sold on February 4, 1981, for 2,507,000 MF, an average of 250,700 MF/veh., relatively close to the 308,970 MF/veh. obtained above. The Audit Report excludes vehicles acquired by OMM prior to 1976. The team believes that previously required vehicles became part of the project and hence that salvage recovery from them is a legitimate revenue to the project. Therefore, 5,870,000 MF has been deducted from the cost of vehicles acquired by OMM (Table P. 1-Equipment Procured-Purchases of Vehicles by OMM).

c. During the seven-year life of the Project, it acquired vehicles from three sources:

1) In use prior to 1976 or purchased with non-project funds prior to 1976 but delivered during the project life.

2) Purchased by USAID

3) Purchased by OMM.

32 vehicles were purchased by USAID and 12 by OMM or a total of 44. Another 20 vehicles were inherited by the Project in 1976. This accounts for 64 of the 66 vehicles for which OMM has records.

d. Office furniture and household furniture, and some office machines were purchased directly by OMM from local sources. Considerable amounts of furniture were ordered from small local factories. Costs were established by accepting supplier's offers where they appeared reasonable or competitive. Consequently, for this area of procurement, expenditure equals justifiable cost and vice versa. However, some household and office furniture was reported in the headquarters warehouse at the end of 1982 and some attempt to cost out this inventory should be made and 1976-1982 expenditures adjusted accordingly to establish a net cost figure. Any effect on the overall administrative or operating cost total would be negligible.

3. Cost Tables

Table P-1 (Equipment Procurement - Purchase of vehicles by OMM) provides a list of the motor vehicles, with prices, purchased each year by OMM since 1976. Prior purchases to 1976 are shown only for memorandum purposes. Also shown is the insurance recovery onvehicles destroyed and the salvage proceeeds on the sale of 19 no longer usable vehicles from Table P-3. Deducting the last two items from the cost of the vehicles purchased results in a net vehicle purchase cost of 23.211 million Malian francs.

Table P-2 (List of Vehicles Purchased by OMM and/or Destroyed from 1976 to 1982) provides more complete information about each vehicle and the accidents which destroyed 3 vehicles. One USAID-purchased vehicle is included because insurance was collected on it by OMM after its destruction.

Table P-3 (Superannuated Vehicles Sold by OMM) lists the OMM vehicles sold for salvage and the amount obtained from the sales. It also identifies the vehicles by registration number, purchase date and purchase price.

Tables P-4 and P-5 (Analysis of USAID Procurement) list all USAID Project procurement for OMM and for the Road Brigade, respectively. Equipment is grouped by major categories. Since USAID/MGT procurement files are not altogether complete, some costs had to be estimated. This applies mainly to some transport and handling charges. While there is no certainty that all items procured are included, the small discrepancy between the totals in the tables and the accounting total suggests that very little, if anything, is missing.

The following shows the justified costs, based on actual expenditures, of office and household furnishing and equipment procured by OMM. The expenditures are taken from checking account records, cash journals and purchase orders.

	Amount (MF)
Household furnishings and equipment	37,868.000
Office furnishings and equipment	49,435.000
Total	87,303.000

TABLE P-1

EQUIPMENT PROCUREMENT
PURCHASES OF VEHICLES BY OMM [1]
1976-1982

Number	Type & Make	Year Purchased	Invoiced Price (in thousands of MF)
3	1 Peugeot, 2 Land Rovers	1974	Not pertinent
2	Land Rovers	1976	7,022
1	Renault R-4	1976	1,748
2	Peugeots: Bachee and Break	1976	5,206
5			13,976
1	Renault R-4	1977	1,918
2	Peugeots: Berline and Break	1977	7,511
3			9,429
2	Renaults R-12	1979	5,990
1	Peugeot: Berline	1979	6,781
3			12,771
1	Peugeot: Berline	1980	5,530
12		Total ('76-'82)	41,706

Cash Recoveries:

[1] Insurance recovery on three Peugeots.[2]	12,625	
[2] Salvage proceeds recovered on sale of old vehicles.[3]	5,870	18,495
Net capital investment		23,211

Notes:

[1] Excludes vehicles procured by USAID or other external sources.

[2] Of which, two destroyed by accidents and one by fire.

[3] Nineteen vehicles, see Table P-3.

TABLE P-2

LIST OF VEHICLES PURCHASED BY ONM AND/OR DESTROYED FROM 1976 to 1982

Item	Ref. No.	Vehicle	Registration Number	Purchase Date	Price	Assigned To	Cause of Loss	Date	Amount of Insurance Recovery
1.	22	Land Rover 109	0469	ONM 13-4-76	3,514	Mopti Sector	--	--	--
2.	23	Peugeot Break 304	0476	ONM 13-5-76	2,532	Chief of DAF	--	--	--
3.	24	Renault R-4	0466	ONM 16-6-76	1,748	Procurement Division	--	--	--
4.	21	Land Rover 109	0479	ONM 19-7-76	3,508	Bandiagara Sector	--	--	--
5.	25	Peugeot Bachée 404	0464	ONM 20-9-76	2,674	Dep. Director	--	--	--
6.	33	Renault R-4	0472	ONM 7-2-77	1,918	Chf. Training Div.	--	--	--
7.	28	Peugeot Berline 504	0350	ONM 11-2-77	3,835	Dep. Chf. ONA in Bamako			
8.	29	Peugeot Break 504	7630	ONM 12-2-77	3,626	Director	--	--	--
9.	51	Peugeot Break 504	0727	AID 2-79	--	Chf. of DAF	Accident	July 1979	3,008
10.	57	Renault R-12	0750	ONM August 1979	2,995	E.E.S. Div.	--	--	--
11.	58	Renault R-12	0751	ONM August 1979	2,995	Extension	--	--	--
12.	59	Peugeot Berline 504	0899	ONM August 1979	6,781	Director	Accident	Sept. 1980	6,239
13.	64	Peugeot Berline 504	1020	ONM October'80	5,530	Director	Fire	Oct. 1982	3,378
					41,706				12,625
					- 12,625				
				Net Cost	29,081				

Notes: See Annex V-6

ONA = Department of Agriculture
DAF = Administration and Finance Division
EES = Analysis, Evaluation and Statistics Division

TABLE P-3

SUPERANNUATED VEHICLES SOLD BY OMM
(In Thousands of M.F.)

Acquisition Date	RM Lic. No.	Date Sold	Sale Price	Vehicle Type	Acquired Cost
1975	5RMD0475	Feb. 4, 1981	510	Land Rover	3,914
1976	5RMD0469	Feb. 4, 1981	110	Land Rover	3,514
1976	5RMD0471	Feb. 4, 1981	350	Land Rover	3,500
1974	5RMD0470	Feb. 4, 1981	10*	Land Rover	3,500
1972	RMC 7149	Feb. 4, 1981	20*	Land Rover	N.A.
1975	5RMD9478	Feb. 4, 1981	350	Land Rover	3,914
1975	5RMD0465	Feb. 4, 1981	250	Land Rover	3,125
1975	5RMD0480	Feb. 4, 1981	300	Land Rover	3,914
1976	5RMD0481	Feb. 4, 1981	150*	Land Rover	3,850
1977	2RMD7630	Feb. 4, 1981	300	Peugeot 504	3,626
1976	5RMD0476	Feb. 4, 1981	275	Peugeot 304	3,532
1976	5RMD0464	Feb. 4, 1981	250	Peugeot 404	2,674
1977	5RMD0472	Feb. 4, 1981	120	Renault 4	1,918
1975	5RMD0473	Feb. 4, 1981	650	Berliet Truck	9,154
1975	5RMD0474	Feb. 4, 1981	900	Berliet Truck	9,154
1976	5RMDC479	Feb. 4, 1981	300	Land Rover	3,508
1978	5RMD0375	Aug. 24, 1981	75*	Peugeot 404	2,697
N.A.	5RMD0350	Oct. 1980	800	N.A.	N.A.
N.A.	5RMD0466	Oct. 1980	150	N.A.	N.A.
19	--	--	5,870		
		Average:	308,947MF/Veh.		

Note: *Wrecked Vehicles

Source: USAID/ADO Pr. ct Files: 1982 Inventory Work Sheets

TABLE [illegible]-4

ANALYSIS OF USAID PROCUREMENT FOR OMM

(Excludes Road Brigade)
(in $ U.S.)

Category and Description	Qty.	Date of Delivery	Total Cost Includ. Transp.	Sub Tot. By Groups	PIO/C No.	P.O. No.
I. MOTOR POOL - VEHICLES						
Land Rover	1	1977	$ 9,400	-	$ 60,417	By Letter
Land Rover S.W.	2	1978	23,000(E)[1]	-	70,449	--
Land Rover Pick Up	2	N.A.	11,300	43,700	70,462	--
Peugeot 504 S.W.	1	1977	7,700	-	60,417	By Letter
Peugeot 504 S.W.	2	N.A.	16,800	-	70,462	--
Peugeot 504 Familiale	1	N.A.	8,430	32,930	70,462	--
Renault R4	1	1977	3,800	3,800	60,417	By Letter
I.H. Scout Pick Up	3	Fall '77(E)	17,937(E)	-	60,419	4,135
I.H. Scout Pick Up 4x4, 110 WB	4	N.A.	116,062	-	80,416	4,885
I.H. Scout Pick Up Terra, 118 WB	3	N.A.		133,999	80,416	4,885
I.H. Grain Truck & Spares	7	N.A.	155,035(E)	-	60,419	4,135
Hino 10 - Ton Truck & Spares	2	1978	61,590	216,625	70,450	-
Toyota Land Cruiser S.W.	1	March '79	15,340	-	90,402	-
Toyota Land Cruiser S.W.	1	Oct. '80	12,400	27,740	90,460	-
Jeep Pick Up J20	1	Aug. '81	12,400	13,400	00,061	-
TOTAL I	32	-	472,194	472,194	-	-
II. M. POOL: TOOLS & TIRES						
Workshop Hand Tools	3 lots	1981	23,[illegible]08	-	00,005	5905, 6097-8
Tires & Inner Tubes [2]	77	N.A.	44,999	68,107	-	78-096
III. M. POOL: ELECTRIC POWER						
Lister 25 KW Gen. & Parts	1	Nov. '78	11,300	-	60,438	-
Caterpillar 52 KW Generator	1	Sep. '80	25,500	-	00,005	00018
Honda Generator E1500	1	June '80	1,580	38,380	-	80118
TOTAL I - III	-	-	578,681	578,681	-	-

Notes: 1. Paid with CFA check. $23,000 was earmarked
Actual expenditure not determined
S.W.: Short Wheel Base
WB: Wheel Base
2. Special Tires for I.H. Trucks. Arrived at Bamako Airport after Project funding was cancelled. Reportedly subsequently disappeared prior to alternative disposal.

Source: USAID/MGT/Procurement Section

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TABLE P-4

USAID PROCUREMENT FOR OMM (Cont.)
(Excludes Road Brigade)
(in $ U.S.)

Category and Description	Qty.	Date of Delivery	Total Cost Includ. Transp.	Sub. Tot. By Groups	PIO/C No.	P.O. No.
IV. OFFICE AND HOUSEHOLD FURNITURE & EQUIPMENT						
Household Furniture	5 sets	May '78	10,000	-	60,417	-
Office Furniture	5 sets	Apr. '78	9,825	-	60,417	-
Home/Office Furniture	1 Lot	-	11,808	31,633	-	78-098
Office:						
Chairs(100), Tables (50)	200	Dec. '79			60,437	4,573
50 Storage Cabinets		"	45,143	-	"	"
File Cabinets	10	"		-	"	"
Olivetti Calculators	3	"	957(E)	-	"	4,712
Desk Calculators	3	N. A.	972(E)	-	60,419	4,145
Olivetti Typewriters	6	June '82	3,881	-	60,437	6,555
Typewriters Linea 98/15,18	4	Oct. '77	1,835	-	70,434	-
Safe, Steel	1	Feb. '78	600	53,388	60,419	4,144
Air Conditioners	5	"	2,349	-	"	"
Refriger. and Stove	1 each	June '80	2,215	-	-	80,111
Light Insect Traps	Lot	N.A.	482	-	-	79,115
Traps	6	Aug. '81	2,712	7,758	-	81,108
TOTAL IV	-	-	92,779	92,779	-	-
V. BLACKSMITHS						
Workshop Tools	Lot	Feb. '78	11,845	-	60,418	4,034
Iron & Steel Shapes	Lot	"	32,173	44,018	"	4,134
Blacksmith Tools	Lot	Oct. '79			70,463	4,978
Buffalo Forge	40	"	59,920	-	"	5,101
Steel Bars	Lot	"		59,920	"	4,839
TOTAL V	-	-	103,938	103,938	-	-

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TABLE P-4

USAID PROCUREMENT FOR OMM (Cont.)
(Excludes Road Brigade)
(in $ U.S.)

Category and Description	Qty.	Date of Delivery	Total Cost Includ. Transp	Sub Tot. By Groups	PIO/C No.	P.O. No.
VI. PHOTOGRAPHY & COMMUNICATION EQUIPMENT & SUPPLIES						
Cannon Camera Case (only)	1 [1]	N.A.	24	-	-	79-118
Cannon Camera	1	July'80	247	-	-	80-081
Instruc. Film: "Nankovola"	2	Nov.'80	587	-	-	79-131
Photo Equipment	Lot	N.A.	450	1,308	-	79-117
R. to R. Tape Recorder	1	1980	798	-	-	80-021
Southcom. Radio	2	1980	8,429	-	-	80-040
Southcom. Radio	5 [2]	Nov.'80	23,071	-	-	79-146
Radio Spare Kits	2	N.A.	9,690	41,988	-	81-131
TOTAL VI	-	-	43,296	43,296	-	-
VII. RURAL & AGRIC. EQUIP.						
Grain Grinding Mills	5	May 80	14,100	-	-	80-141
" " " & Motors	7	Dec. 81	17,500	31,600	00,057	-
Threshing Mach.	1	Mar. 81	8,955	-	-	80-186
Portable Beam Scale	50	N.A.	11,683	20,638	60,419	4-057
Soil Test Equipment	Lot	1978	167	-	-	78-082
Drip Irrigation Kit	5	N.A.	275	442	-	78-083
TOTAL VII	-	-	52,680	52,680	-	-
VIII. PUMPS						
Submersible Water Pump	1	1978	620	-	60,420	4-107
Noyne Hand Pump	5	1980	14,907	-	-	80-002
Guinard Pump & Parts	1	1980/N.A.	144,165	-	-	79-147& 82-00
Solar Power Unit	2	N.A.	1,629	161,321	-	82-139
TOTAL VIII	-	-	161,321	161,321	-	-
GRAND TOTAL	-	-	1,032,695	1,032,695	-	-

Source: USAID/MGT, February 1985
Notes: 1. Camera and case were ordered but only the case was received and paid for. The camera was reordered. 2. 6 radios were purchased at a total cost of $26,571 of which 1 was for the B.P. at a cost of $4,476.50.

TABLE P-5

ANALYSIS OF USAID PROCUREMENT FOR OMM
(Road Brigade Only)
(in $ U.S.)

Category and Description	Qty.	Date of Delivery	Total Cost Includ. Transp.	Sub Tot. By Groups	PIO/C No.	P.O. No.
I. MOTOR VEHICLES						
CARS AND TRUCKS:						
Land Rover w. Tool Unit 5RMD 0552	1	N.A.	17,780	-	60434	-
Land Rover 109 Ch 93466580	1	May '77	11,000	-	70417	-
Peugeot Pick Up 404 5RMD 0575	1	Dec. '77	5,400	-	70417	-
Jeep Pick Up J20 Ch. 073634	1	Aug. '81	14,960	-	00061	-
I.H. Scout 5RMD 0604	1	Fall '77	3,979(E)	55,119	60419	4135
TOTAL CARS	5	-	55,119	55,119		
Saviem Truck w. Lube Unit 5RMD 0562	1	N.A.	21,750	-	60434	-
Berliet Truck NNH 6151 and 6353	2	Sep. '79	162,000	-	90402	-
Berliet Truck 5RMD 0567 and 0568	2	1978	66,000	-	60421	-
Hino Tank Truck (Fuel) 5RMD 0538	1	Nov. '77	36,000	-	70419	-
Hino Tank Truck (Water) 5RMD 0539	1	Nov. '77	34,000	-	70419	-
Tank Truck (I.H.)	1	Jan. '81?	45,608	-	80416	-
Hino Dump Truck 5RMD 00534-7	4	Nov. '77	124,000	-	70420	-
I.H. Dump Truck	2	Fall '81	113,875	-	00009	-
I.H. Dump Truck	2	Fall '81	120,371	723,604	00009	-
TOTAL TRUCKS	16		723,604	723,604		
TOTAL I MOTOR VEH.	21	-	778,723	778,723	-	-

Source: USAID/MGT
Procurement Section

TABLE P-5

ANALYSIS OF USAID PROCUREMENT FOR OMM (Cont.)

(Road Brigade Only)

(in $ U.S.)

Category and Description	Qty.	Date of Delivery	Total Cost Includ. Transp.	Sub Tot. By Groups	PIO/C No.	P.O. No.
II. ROAD CONTRUCTION EQUIP.						
Caterpillar P6 Tractor 04 x 1524	1	Feb.'78	181,334	-	60420	4104
Cat. 120 Motor grades 37 x 3193-4	2	Feb'78		-	60420	"
Caterpillar Rob Filter 570182	1	N.A.	7,026	-	"	"
Spare Parts for above	Lot	N.A.	20,000	-	"	"
Wheel Loaders & Spares Fiat-Allis 200 8297299	2	Dec.'77	94,864	-	70415	-
Concrete Mixer (Richie) Type 942-C	1	Dec.'78	6,400	-	70455	-
Compressor 71CM Type DRF-175 Ingersoll-rand	1	Dec.'78	15,392	-	"	-
Cat. D6D Bulldozer 03 x 00981	1	Aug.'81	018,776	-	00009	-
Salion Compactor & Parts	1	Jan'81 [2]	29,769 [1]	-	80-416	5325
I.H. Low Bed Trailer KW 109	1	Jan'81	118,017	681,578	"	4885
TOTAL II	11	-	681,578	681,578	-	-
III. MINOR EQUIPMENT						
Jacks and Lifting Units	3	1978	1,600	-	-	78-024
Tools (AFCO)	Lot	June'80	1,850	-	-	80-166
Misc. Items	Lot	Dec.'78	2,728	-	-	78-025
Survey Equip.	Lot	Feb.'79	3,384	9,762	70458	-
TOTAL III	-	-	9,762	9,762	-	-
IV. CONSTRUCTION MATERIALS						
Culvert Pipes	Lot	Jan.'80	55,810	-	-	79-123,124
Gabbion Netting	Lot	Sep.'80	46,201	102,011	-	79-126
TOTAL IV	-	-	102,011	102,011	-	-

TABLE P-5

ANALYSIS OF USAID PROCUREMENT FOR DMM (Cont.)
(Road Brigade Only)
(In $ U.S.)

Category and Description	Qty.	Date of Delivery	Total Cost Includ. Transp.	Sub Tot. By Groups	PIO/C No.	P.O. No.
V. SUPPORTING EQUIPMENT						
Drain Generator & Parts	1	Feb.'78	3,413	-	60420	4056
Additional Parts	2 lots	May & Sep. '80	1,657	-	-	80-072+116
Bernard Motor Pump	1	May'78	2,100	-	-	78-063
Mobile Southcom Radio	1	Oct.'80	3,500	-	-	79-146
Field Tents:						
10-8 Man	10	Sep.'78	17,534	-	60436	-
6-4 Man	6	Sep.'78		-	-	
10 Man	6	Mar'80	1,892	30,096	-	81-027
4 Man	4	Mar'81				
TOTAL V			30,096	30,096		
TOTAL ROAD BRIGADE			1,602,170	1,602,170		

Notes: 1. Includes cost of spares: Estimated cost $950

2. Received by Travau Neufs in Bamako but not delivered to the Road Brigade.

TABLE VC-1

OPERATING EXPENSES OF THE MOTOR POOL, MOTOR CYCLES, MOBYLETTES AND DIESEL-ELECTRIC GENERATORS 1976-1982

Number of Vehicles (cars and trucks)

January 1976	Acquired 1976-1982	Total	December 1982	November 1984
17	49	66	10	4

Average vehicle life: 39 months

(In thousands of M.F.)

Operating Expenses	Historical or Estimated		Recorded
1. Registration fees	11,630		N.A.[3]
2. Vehicle insurance	140,736	←	140,736
3. Maintenance and repairs	248,610	←	248,610
4. Spare parts, and tires	132,613 (1)	←	132,613
5. Gasoline for Vehicles, Motorcycles, and Mobylettes	336,429		337,397
6. Diesel fuel for trucks, pick-ups, and generators	80,299		80,703
7. Lubricating oils[2]	54,267	←	54,267
	1,004,584		994,326
		+ Registration fees	11,630
			1,005,956

Notes:

[1] Less, salvage value of remaining inventory.

[2] Lubricating grease is not included.

[3] Accounting total not obtained.

TABLE VC-2
REGISTRATION FEES OF OMM VEHICLES
(In Thousands of MF)

		Year					
		1978		1979		1980	
H.P. Ceiling	Registration Fee	Number of Vehicles	Registration Expense	Number of Vehicles	Registration Expense	Number of Vehicles	Registration Expense
7	10	1	10	1	10	1	10
9	20	1	20	1	20	1	20
12	50	17	850	22	1,100	21	1,050
15	80	3	240	5	400	8	640
20	120	11	1,320	10	1,200	7	840
Total	--	33	2,440	39	2,730	38	2,560

		1981		1982		1978 - 1982
H.P. Ceiling	Registration Fee	Number of Vehicles	Registration Expense	Number of Vehicles	Registration Expense	Total
7	10	--	0	--	0	30
9	20	--	0	--	0	60
12	50	12	600	10	500	4,100
15	80	11	880	9	720	2,880
20	120	6	720	4	480	4,560
Total	--	29	2,200	23	1,700	11,630

Note: 1. Payment of registration fees was required from 1978.

TABLE VC-3

OFFICIAL HORSEPOWER AND REGISTRATION FEE SCALE

Vehicle and Model	Official Horse Power	Registration Fee Scale
Renault R-4	7 CV	10,000 MF
Peugeot Bachée 404	9 CV	20,000 MF
Peugeot Familliale 404	12 CV	50,000 MF
Peugeot Break 504	12 CV	50,000 MF
Peugeot Berline 504	12 CV	50,000 MF
Peugeot Familliale 504	12 CV	50,000 MF
Peugeot Break 304	12 CV	50,000 MF
Renault R-12	12 CV	50,000 MF
Toyota Corolla Break	12 CV	50,000 MF
Land Rover - All models	12 CV	50,000 MF
Toyota Land Cruiser	15 CV	80,000 MF
Jeep Pick-up	15 CV	80,000 MF
I.H. Scout Station Wagon	15 CV	80,000 MF
I.H. Scout Pick-up	15 CV	80,000 MF
I.H. Grain Truck	20 CV	120,000 MF
Berliet - Truck	20 CV	120,000 MF
Hino - Truck K3212	20 CV	120,000 MF

Source: OMM/Inventory Accounting Sec.

Reference: Director's Memo dated March 26, 1979.

TABLE VC-4

VEHICLE INSURANCE[1]

(In Thousands of MF)

Years	Premiums Paid			Insurance[2] Recovery
	Mobylettes	Other Vehicles	Total	
1976	59	1,811	1,870	
1977	52	5,286	5,338	
1978	--	45,252	45,252	
1979	--	36,939	36,939	3,008 (#51: 5RMD-0727)
1980	--	43,116	43,116	6,239 (#59: 5RMD-0899)
1981	--	7,101	7,101	
1982	--	1,120	1,120	3,378 (#64: 5RMD-1020)
	111	140,625	140,736	12,625

Source: OMM/DAF - Figures from the General Ledger, compared with statements and invoices from C.N.A.R.

Notes: [1]Note that OMM was insured solely by C.N.A.R. from 1976 to 1982. (Compagnie Nationale d'Assurance et Réassurance)

[2]Three Peugeots: One Break 504 and two Berlines 504.

TABLE VC-5

MAINTENANCE AND REPAIRS OF VEHICLES
(IN THOUSANDS OF MF)

Year	Amounts from the General Ledger[1]
1977	25,740
1978	49,544
1979	90,281
1980	39,079
1981	37,023
1982	6,943
	248,610

Source: [1]Account Number 6315.

TABLE VC-6

PURCHASES OF SPARE PARTS AND TIRES
(In Thousands of MF)

Year	Amounts from the General Ledger[1]
1978	620
1979	80,521
1980	37,223
1981	11,115
1982	3,134
Total[2]	132,613

Notes: [1]Account number 6011.

[2]Deduct salvage value of remaining inventory to obtain the net cost.

TABLE VC-7

FUEL COSTS OF OMM GASOLINE
(In Liters and MF)

Year	Cars & Trucks Kilometers	Cars & Trucks Liters	Mobylettes & Motorcycles Liters	Total Liters	Average Price MF/L	Value MF(000)	Purchases[1] Liters	Value MF(000)	Comments
1976	348,551	66,228	50,100	116,328	x 165	19,194	--	--	See Note 2.
1977	409,051	75,769	56,100	131,869	x 176	23,209	--	--	
1978	481,949	126,579	61,380	187,959	x 180	33,833	110,275	19,849	
1979	841,832	181,424	98,284	279,708	x 207	57,900	350,299	72,512	
1980	749,670	156,233	101,440	257,673	x 327	84,259	323,812	105,886	
1981	450,324	106,828	109,780	216,608	x 443	95,957	264,274	117,073	
1982	N.A.	--	--	--	520	22,077[3]	42,456	22,077	See Note 3.
	3,281,377	713,061	477,084	1,190,145	282.8	336,429	1,091,116	337,397	

Note: [1] Includes cash and invoiced purchases, as well as 5,242 Liters of Mobylette fuel-oil mixture in 1978.

[2] Accounting entries were initiated during 1978. The accounting value appears, therefore, to be lower than actual usage.

[3] There is no way to extrapolate fuel consumption in 1982. Therefore, the actual cost of fuel purchased was used.

TABLE VC-8

FUEL COSTS OF OMM
DIESEL FUEL
(In liters and MF)

Year	Cars & Trucks		Electric Genetaros Liters		Total	Average Price	Value	Purchases[1]	Value	Comments
	Kilometers	Liters	Lister[4]	Caterpillar[3]	Liters	MF/L	MF(000)	Liters	MF(000)	
1976	73,184E	39,008	0	0	39,008	x 118	4,603	--	--	See Note 2
1977	67,084E	35,720	0	0	35,720	x 127	4,536	--	--	
1978	80,627E	40,115	22,249	0	62,364	x 130	8,107	36,817	4,786	
1979	60,343	29,230	22,249	0	51,479	x 154	7,928	68,603	10,565	
1980	74,307	34,358	18,541	0	52,899	x 234	12,378	76,554	17,914	
1981	69,853	31,261	0	65,606	96,867	x 316	30,610	125,261	39,582	
1982	--	--	0	38,408	38,408	x 316	12,137	24,860	7,856	
Total	425,398	209,692	63,039	104,014	376,745	213.1	80,299	332,095 [5]	80,703	

Notes: [1] Includes cash and invoiced purchases.

[2] Accounting entries were initiated during 1978. The accounting value appears, therefore, to be lower than actual usage.

[3] Consumption calculated in accordance with hourly usage recorder, on the caterpillar, which reads 9,628 hours of operation.

[4] Operating hours may have been greater in 1981 and fewer in 1982 but the total is unchanged.

[5] In addition, 5,933 liters of kerosine were purchased for unstated purposes. Not included here.

TABLE VC-9

DISTANCE AND FUEL CONSUMPTION BY OMM MOTOR POOL VEHICULES
CARS AND TRUCKS
(In Thousands of FM)

Year and Type of Engine	Number Available	Usage in Vehicle-Months: Available	Usage in Vehicle-Months: Actual	Total Distance KM	Fuel Consumption	Value of Fuel	Average Consumption L/100 KM	Average Unit Price MF/L	Actual Unit Price MF/L	Comments
1976										
Gasoline	20	172	Unknown	435,689	82,786	13,658	19.0	165	--	
Diesel	4	48		91,480	48,760	5,752	53.3	118	--	
Total	24	220		527,169	131,546	19,410	24.9	--	--	
	Estimated at 80% of availability	137.6	137.6	348,551	66,228	10,926	19.0	165	165	See Note 2.
		38.4	38.4	73,184	39,008	4,602	53.3	118	118	
			176.0	421,735	105,236	15,528	24.9	--	--	
1977										
Gasoline	21-1	219	Unknown	511,314	94,711	16,596	18.5	175.2	--	
Diesel	4	44		83,855	44,650	5,670	53.2	126.9	--	
Total	25-1	263		595,169	139,361	22,266	23.4	--	--	
	Estimated at 80% of availability		175.2	409,051	75,769	13,277	18.5	175.2	176	See Notes 1 & 2
			35.2	67,084	35,720	4,536	53.2	126.9	127	
			210.4	476,135	111,489	17,813	23.4	--	--	
1978										
Gasoline	29	259	Unknown	602,436	158,224	28,469	26.3	179.9	--	
Diesel	4	44		100,784	50,144	6,519	49.7	138.0	--	
Total	33	303		703,220	208,368	34,988	29.6	--	--	
	Estimated at 80% of availability		207.2	481,949	126,579	22,775	26.3	179.9	180	See Note 2.
			35.2	80,627	40,115	5,215	49.7	130.0	130	
			242.4	562,576	166,694	27,990	29.6	--	--	
1979										
Gasoline	37-1	340	266	841,832	181,424	37,141	21.6	204.7	207	
Diesel	3	36	23	60,343	29,230	4,455	48.4	152.4	154	
Total	40-1	376	289	902,175	210,654	41,596	23.2	--	--	
			= 77%							
1980										
Gasoline	35-1	308	242	749,670	156,233	50,783	20.8	325	327	
Diesel	3	28	24	74,307	34,358	8,067	46.2	234.2	234	
Total	38-1	336	266	823,977	190,591	58,850	23.1	--	--	
			= 79%							

TABLE VC-9
(CONTINUED)

Year and Type of Engine	Number Available	Usage in Vehicle-Months		Total Distance KM	Fuel Consumption	Value of Fuel	Average Consumption L/100 KM	Average Unit Price MF/L	Actual Unit Price MF/L	Comments
		Available	Actual							
1981										
Gasoline	24-2	216	180	450,324	106,828	47,343	23.7	448.8	443	
Diesel	5	59	41	69,853	31,261	10,677	44.7	322.3	316	
Total	29-2	275	221	520,177	138,089	58,020	26.5	--	--	
			= 80%							
1982										
Gasoline	18	172	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	520	
Diesel	4	40							316	
Total	22	212							--	
Totals										
Gasoline		1,686	--	3,281,377	713,061	182,845	21.7	256.4	--	
Diesel		299		425,398	209,692	36,952	49.3	176.2	--	
Total		1,985	--	3,706,775	922,753	219,797	24.9	--	--	
Grand Total 1979-1981										
Gas	--	864	688							
Diesel	--	123	88							
		987	776							
			= 78.6%							

Notes: [1] A new vehicle was paid for in 1977--but there is no record of usage in 1977. Date of delivery is unknown.

[2] Actual usage from 1979 to 1981 is an almost constant 80% of availability. This percentage was therefore applied to 1976-1978 availabilities in estimating usages.

TABLE VC-10

FUEL CONSUMPTION BY OMM MOTORCYCLES AND MOBYLETTES
GASOLINE
[1]Annual Allocation - in Liters

Year	Integrated Rural Area				Headqrts.	
	Number of Mobylettes	Estimated[1] Consumption L/Mob	Total Liters	Consumption of Ten Motorcycles	Consumption[3] by Mobylettes	Total Annual Consumption Liters
1976	135	30 x 12 = 360	48,600	--	1,500 E	50,100
1977	150	360	54,000	--	2,100 E	56,100
1978	220	360	57,200	--	4,180	61,380
1979	260	360	93,600	--	4,684	98,284
1980	270-10	360	93,600	4,800[2]	3,040	101,440
1981	290-10	360	100,800	4,800[2]	4,180	109,780
1982	--	--	--	--	--	--
	--	--	447,800	9,600	19,684	477,084

Notes: [1] Mobylettes use a gasoline-oil mixture. The oil cost is included in the cost of lubricating oils.

[2] Ten 125CC motorcycles. Monthly allocatic, 40 L. x 12 months = 4,800 L/yr.

[3]Estimates for 1976 and 1977 - No records of actual allocations.

TABLE VC-11

SUMMARY OF FUEL ALLOCATIONS TO HEADQUARTERS PERSONNEL OF OMM

GASOLINE FOR CAMICO "MOBYLETTES" IN LITERS

Month	1978		1979		1980		1981		1982[4]	
	No.	L	No.	L[3]	No.	L	No.	L	No.	L
January	15	240	28	486	9	208	14	300		--
February	15	240	26	446	9	208	14	300		--
March	18	288	26	446	9	208	14	280		--
April	19	308	21	408	9	208	13	260		--
May	24	390	23	438	9	208	13	260		--
June	24	390	26	486	9	208	15	310		--
July	24	396	26	512	10	202	16	350		--
August	21	342	24	472	11	242	16	350		--
September	22	356	11	264	11	362[2]	17	390		--
October	22	356	11	272	14	242	18	440		--
November	29	498[1]	11	272	16	402	19	460		--
December	21	376	9	182	14	342	20	480		--
Total	254	4,180	242	4,684	130	3,040	189	4,180		-0-
Average/Price MF/L		180		207		327		443		520
Value - MF	752,400		969,588		994,080		1,851,740			

Notes: [1] Includes 4 supplementary allocations.

[2] Includes 3 special allocations for trainers.

[3] Estimated allocations for January to April 1979. No records of actual allocations.

[4] Allocations were cancelled in 1982.

TABLE VC-12

DIESEL FUEL CONSUMPTION BY ELECTRIC GENERATORS[1]

LISTER GENERATOR: 1978 to 1980

Consumption: 1,380 liters in 20 days, of which:
18 days x 16.5 hours/day = 297 operating hours
2 days x 11.5 hours/day = 23 operating hours
Total 320 operating hours

Therefore, hourly consumption = 1,380 ÷ L 320 hours = 4.31 L/hr.

Estimated Annual Consumptions

1978 365 days x 6/7 days/week x 16.5 hrs/day = 5,162 hrs x 4.31 L/hr = 22,249 L
1979 365 days x 6/7 days/week x 16.5 hrs/day = 5,162 hrs x 4.31 L/hr = 22,249 L
1980 Ditto, less 2 months of breakdown =22,249 x 10/12 = 18,541 L
Total 63,039 L

CATERPILLAR GENERATOR 52 KW: 1981 and 1982 (in part)

Consumption: 4,020 liters in 22 days, of which:
21 days x 17 hours/day = 357 operating hours
1 day x 15 hours/day = 15 operating hours
Total 372 operating hours

Therefore, hourly consumption = 4,020 L ÷ 372 hours = 10.81 L/hr.

Operating time: 9,628 (hourly counter) ÷ 17 = 566 hours

1981 365 - 8 = 357 operating hours
1982 566 - 357 = 209 operating hours
Total 566 operating hours

Estimated Annual Consumptions

1981 357 days x 17 hours/day x 10.81 L/hr = 65,606 L
1982 209 days x 17 hours/day x 10.81 L/hr = 38,408 L
Total 104.014 L

Total Consumption Both Generators 167,053 L.

Note: [1] See Annex V-9

TABLE VC-13

PURCHASES OF GASOLINE AND MIX

Year		Cash and Invoiced Purchases - Liters		Price MF/L		Value Thousands of MF
1978	Invoiced Gas	105,033				
	Mix	5,242				
	Total	110,275	x	180	=	19,849
1979	Cash Gas	1,690				
	Invoiced Gas	348,609				
	Total	350,299	x	207	=	72,512
1980	Invoiced Gas	323,812	x	327	=	105,886
1981	Cash Gas	3,770				
	Invoiced Gas	260,504				
	Total	264,274	x	443	=	117,073
1982	Invoiced Gas	42,456	x	520	=	22,077
	Total Purchases	1,048,660	x	321.7	=	337,397

TABLE VC-14

PURCHASES OF DIESEL FUEL

Year		Liters		Price/L MF/L		Value Thousands of ML
1978	Invoiced	36,817	x	130	=	4,786
1979	Invoiced	68,603	x	154	=	10,565
1980	Invoiced	76,554	x	234	=	17,914
1981	Cash	2,823				
	Invoiced	122,438				
		125,261	x	316	=	39,582
1982	Invoiced	24,860	x	316		7,856
	Total Purchases	332,095	x	243.0	=	80,703

TABLE VC-15

PURCHASES OF LUBRICATING OILS
MOTOR OIL

Year	Quantity Liters	Price Per Liter in MF	Value (Thousands of ML)
1976	--	--	--
1977	--	1,025	--
1978	11,540	1,197	13,813
1979	4,001	1,430	5,721
1980	15,204	1,820	27,671
1981	3,002	1,845	5,539
1982	690	2,208	1,523
	34,437	1,576 (Ave.)	54,267

Notes: [1] In 2 liter cans -- in which most oil was purchased.
Prices provided by ORM - Purchasing Division, December 1984.

ANNEXES

Annex A: Statement of Work, with Brief Responses

Annex B: List of Persons Contacted

Annex C: List of Documents Consulted

Annex D: Supplementary Tables on Vehicle Maintenance and Operations

Annex E: Supplementary Tables on Well Data

ANNEX A:

STATEMENT OF WORK, WITH BRIEF RESPONSES

ANNEX A
SUMMARY RESPONSES TO STATEMENT OF WORK

The statement of work contained in the contract between the Agency for International Development and Development Associates, Inc., was the basic guide for the team's work. The statement is already in a questionnaire form which made this summary response relatively easy to organize. There is one implied question, however, which is the first one answered below.

1. Over the period 1976 to 1982 what were the justified costs to Opération Mils Mopti for the project and how do they relate to the amounts contributed by AID to the revolving fund out of which those costs were paid?

   The team has established justified operating and capital costs eligible for reimbursement by AID of 2,814 million Malian francs. To this should be added the costs of the credit program of 438 million francs for a total of 3,244 million Malian francs. The AID audit report dated May 3, 1983, found that AID had disbursed MF 2,585 million to OMM in local currency reimbursements.

2. What was provided under the various credit programs?

   As detailed in the credit tables of the report, agricultural equipment and agricultural chemicals were provided in very substantial quantities. Blacksmiths' tools, oxen and grain mills were provided in very limited quantities. Hundreds of market gardening handtools were procured but very few were sold. OMM employees purchased nearly one thousand motorbikes over the life of the project.

3. What were the legitimate supplier prices for the items supplied?

   There were no alternate suppliers of agricultural machinery and chemicals which were provided by government subsidized monopolies. In other cases we have found an alternate price or have used prices paid. Credit tables show prices applied in calculating total funds expended, including rollovers. The total cost to OMM was just over 438 million Malian francs.

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4. What would have been acceptable transport and distribution costs for items supplied under the credit programs?

Except for some motorbikes, these were not costs separately charged to or paid by OMM and hence not a required element of information for arriving at justifiable cost of the program. We deducted the excess costs in arriving at the overall cost of the motorbike program. The team did not otherwise determine these costs.

5. How many people were employed by OMM in all categories over the life of the project?

At the beginning of Phase I of the project in 1976 OMM had a total of 146 employees of whom 130 were technicians in the field and the balance at headquarters, then in Mopti. In 1979, when Phase II began, 248 technicians were reported employed, of whom 21 were at the Sévaré headquarters supported by an unspecified number of clerks, chauffeurs, etc. By the end of November 1982 OMM had 477 employees in all categories. Of these, 384 were in the field, 74 were at Sévaré and 19 were assigned to the regional office of the Ministry of Agriculture in Mopti. Of the 477 employees, 354 were agricultural technicians.

6. What were the personnel costs of OMM?

The salary costs of national and regional payroll personnel were not charged to OMM but considered a GRM contribution to the project. The costs paid by OMM in the form of salaries, bonuses, payroll taxes and other costs totaled over 576 million Malian francs from 1976 through 1982.

7. What was the relationship between headquarters' personnel costs and field personnel costs?

Not having access to national and regional payrolls, the team could not calculate this ratio. In 1982, just over half of OMM's personnel were on OMM's own payroll and 21 percent of these were at the Sévaré headquarters. The share of personnel costs, including overhead assigned to the headquarters personnel, would probably be proportional to their numbers, i.e., about twenty-one percent. No such proportionality would exist for those on regional or national payrolls. Pay grades, salaries, allowances and perquisites were much higher for the persons assigned to Sévaré headquarters in this pay category.

8. What was the content of the in-house training program?

Agricultural production, extension, machinery and credit. Training was both theoretical and practical. Later, some general education was added in French, mathematics and report writing.

9. What were the justifiable costs of the in-house training program?

Just over 20 million Malian francs in identified, justified costs at the Boré training center. These are shown in the report under construction costs and personnel costs. Other training costs, not separately identified but reported under other cost categories, included students' salaries, trainers' salaries and overhead, travel costs, etc.

10. What training was received by blacksmiths and what were the legitimate costs?

Blacksmiths were trained in the use of more modern tools and materials and how to repair farm machinery. There were no separately identified costs to OMM for this program.

11. How much grain was purchased each year by OMM for OPAM and what were the legitimate costs of this operation?

OMM purchased for and delivered to OPAM the following amounts of grain in each of the years indicated. The figures do not include grain purchased by OPAM directly from cooperatives in the Mopti region.

1976 -- 9,649 mt	1979 -- 7,555 mt	1982 -- 2,101 mt
1977 -- 9,688 mt	1980 -- 4,811 mt	
1978 -- 8,071 mt	1981 -- 3,556 mt	

The team could not determine what the cost of this operation was to OMM or what it should have been. It was determined that OMM suffered a cash loss of at least 113 million Malian francs over the period of 1979 to 1982.

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12. How many wells were dug or drilled; how many produced water?

    Of 19 wells dug or drilled, nine produced water.

13. What was the justifiable cost of the well program?

    Just over 77 million francs.

14. How much support did OMM provide to the research programs of ICRISAT and SAFGRAD and what were the legitimate costs thereof?

    OMM provided some support in kind to these programs including some personnel time and motor fuel. These costs are reported under operating and personnel costs and not separately identified. Identified costs for some fertilizer inputs to field trials amounted to 342,000 Malian francs.

15. What were the inputs to the village associations and farmer organizations program and what did they cost?

    There were no inputs and no costs incurred.

16. How many buildings were built, where and what kind?

    Please refer to the appropriate tables in this report.

17. What were the justifiable costs of the building program?

    Just under 181 million Malian francs.

18. How many kilometers of road were built and/or improved?

    Constructed 104.3 kilometers, repaired or maintained 110.2 kilometers.

19. What were the justifiable costs of the road program?

The estimated legitimate costs exceed 544 million Malian francs; of this, 29 million also appears under general vehicule operating costs. Net road building costs were 515 million Malian francs.

20. What were the project needs for administrative support?

The usual needs for transport, supplies, communications, maintenance, etc. The transport requirement was by far the largest cost item.

21. What are the justifiable costs for meeting those needs?

Slightly over 1,353 million Malian francs.

22. What equipment was purchased for the project by OMM, by USAID, and at what costs?

OMM purchased vehicles, office and household furniture and equipment at a total identified and justified cost of 110,514,000 MF. Commodity procurement by USAID totalled 2,721 thousand dollars.

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ANNEX B:

LIST OF PERSONS CONTACTED

ANNEX B

PERSONS CONTACTED

Ministry of Agriculture, Bamako

Madame Sy	Conseiller auprès du Ministre

Directorate of Regional Agricultural Development

Saga Ouadraogo	Coordinateur de la Zone Diffuse

Opération Mils Mopti

Tenenkou Diabaté	Directeur par Interim
Tiernula Bouaré	Chef de la Production et de la Section Vulgarisation
Makono Tangara	Chef de la Formation
Siné Konaté	Chef, Etudes, Evaluation et Planification et de la Section Planification
Oumar Dia	Chef, Administration et Finance
Dramané Dembelé	Chef du Personnel
Souleymane Diakité	Chef, Contabilité Générale
Sékou Samaké	Chef du Budget
Boubacar Ibrahim N'Diaye	Chef, Comptabilité Matière
Billi Kourama	Chef, Comptabilité Solde
Dramané Cissé	Chef du Crédit Agricole
Zakaria Konaté	Chef de l'Approvisionement et de la Section Achats
Mahamane Guitèye	Chef, Gestion des Stocks
Abdoullaye Ouane	Chef, Atélier et Transports
Mamadou Diarra	Chef du Garage
Mamadou Bagayok	Chef de la Commercialisation
ElHaj Cissé	Chef, Brigade Pistes
Yacouba Tamboura	Chef S.D.R. à Koro, Secretaire Général Section UNJM Koro, Député
Abdoulaye H. Maiga	Chef S.D.R. Douentza
Filatié Sanogo	Chef S.D.R. Bandiagara
Moctar Ba	Chef S.D.R. Bankass

Opération Riz Mopti

Birama Togola	Directeur Général
Bada Haidara	Chef Approvisionement
Saydou Jiallo	Chef de l'Atélier

American Embassy - Mopti

Robert J. Ryan, Jr.	Ambassador

USAID, Bamako

David Wilson	Director
James M. Anderson	Deputy Director
Oumar Dia	Agricultural Development
S.K. Reddy	Agricultural Development
Martine Keita	Agricultural Development
Abdoul Diallo	Agricultural Development
Maimouna Diénépo	Agricultural Development
James Jackson	Livestock
Zack Hahn	Design and Evaluation
Roger Simmons	Program
Richard Day	Program
Sam Uyo	Program
Edward P. Rhatigan	Management
Robert Morin	Management
Mahamane Tandina	Management/Procurement
Susan Buchanan	Engineering
Hamacire Daou	Engineering
Romwall Keith	Financial Analysis
George Jenkins	Controller
Carl Lewis	Certifying Officer
Salif Camara	Controller's Office
Mojeré Diallo	Controller's Office, Accounts

Construction, Wells and Roads

Bacary Doumbia	Directeur Travaux Neufs
Siraba Traoré	Directeur Adj. Travaux Neufs
Thiecoura Berthe	Chef Brigade Piste Agricole (O.H.V.)
Demba N'Diaye	Comptable Brigade Pistes
Issia Koné	Directeur de la Subdivision Travaux Publics
Djibril Cissé	Surveillance Génie Rural à Sévaré
Salia Maiga	Directeur E.G.E.B.A.T.
Anoté Sagara	Representant du Tacheron Djiqui Diallo
Madany Guindo	Directeur "Opération Puits"
Cheick Omar Cissé	Directeur de L'Urbanisme

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ANNEX C:

LIST OF DOCUMENTS CONSULTED

ANNEX C:

LIST OF DOCUMENTS CONSULTED

As far as possible, the team reconstructed the cost history of OMM by consulting, for both phases of the project, USAID, OMM and Road Brigade original accounting and other source records, documents and reports. These included, but were not limited to, the following:

1. Project papers, project grant agreements and amendments and project implementation letters.

2. Project evaluation report (1982) and audit reports: 1983 and 1979 (internal).

3. Project implementation orders for commodities, technical assistance and participant training.

4. USAID project financial reports, accounting records (including reimbursement requests) purchase orders, invoices, vouchers, etc.

5. USAID project activity reports and all project files (at ADO and Program divisions).

6. OMM annual agricultural campaign reports (1977-1982) and monthly activity reports of each division and sector.

7. OMM monthly payrolls, 1976 - 1982.

8. OMM accounting documents, including purchase orders, invoices, receiving reports, checkstubs, credit sales and reimbursement records, inventories, etc.

9. OMM motor pool and generator usage and fuel consumption records and fuel allocation directives, etc.

10. Well drilling and digging contracts acceptance reports, etc.

11. Building construction contracts, invoices, acceptance reports, etc.

12. Road building monthly and quarterly reports, management transfer report (September 1981), invoices and accounting records and supporting documents and monthly equipment utilization reports.

ANNEX D:

SUPPLEMENTARY TABLES ON VEHICLE MAINTENANCE AND OPERATIONS

ANNEXE V-1

SITUATION EVOLUTIVE DE LA ZONE ENCADREE

Designation/Campagne	1973/74	1974/75	1975/76	1976/77	1977/78	1978/79	1979/80	1980/81	1981/82	1982/83
S.D.R. [1]	2	3	3	4	5	5	7	7	7	7
Z.E.R. [2]	14	20	20	28	34	38	42	44	45	45
Secteurs de base	35	65	75	126	146	157	209	249	252	252
Villages encadrés	243	452	527	1.053	1.111	1.130	1.240	1.420	1.550	1.550
Population totale	139.873	231.085	240.471	498.130	678.928	708.103	785.994	786.415	806.075	826.227
Population active agricole	95.110	154.826	156.307	301.078	407.034	425.675	471.596	533.053	540.070	545.309
Exploitations pilotes	225	580	710	1.140	1.220	1.520	1.765	2.490	2.520	2.520
Villages pilotes	-	-	-	-	-	-	-	12	12	12
Zones d'alphabétisation	-	-	-	-	-	-	5	7	7	7
Centres d'alphabétisation	-	-	-	-	-	-	32	64	64	64
Animateurs	-	-	-	-	-	-	51	114	132	132
Auditeurs	-	-	-	-	-	-	1.456	2.535	2.535	2.535
Superficie Encadrée	17.812 Km.C.	41.124 Km.C.	-	55.027 Km.C.	62.277 Km.C.	-	70.750 Km.C.	70.750 Km.C.	70.750 Km.C.	70.750 Km.C.

Notes: 1. S.D.R. = Secteur de développement rural
2. Z.E.R. = Zone d'expansion rurale
Les villages pilotes ont été créés an cours de la campagne 1980/1981.
L' alphabétisation fonctionnelle a démarré en 1979/80.

Source: Division Etudes - Evaluation - Planification, á l'O.M.M., Novembre 1984

ANNEXE V-2

PARCOURS A VOYAGER DANS LA ZONE
ENCADREE DE L'OMM - EN KILOMETRES

S.D.R. ET[1] DISTANCE DE SEVARE	Z.E.R.[2] ou Z.E.A.	DIST: S.D.R.-Z.E.R.
Bankass 130	Centrale	0
	Kani-Bonzon	18
	Ségué	50
	Baye	75
	Koulogon	50
	Diallasagou	65
	Sokoura	85
	Ouenhoro	105
Koro 175	Centrale	0
	Dioungani	52
	Dianangourou	120
	Madougou	45
	Diankabou	65
	Koporo-Na	32
	Toreli	25
	Dangatené	20
Douentza 185	Centrale	0
	Dallah	37
	Boré	65
	N'Gouma	120
	Boni	100
	Mondoro	160

S.D.R. ET DISTANCE DE SEVARE	Z.E.R. ou Z.E.A.	DIST: S.D.R. - Z.E.R.
Mopti 13	Centrale	0
	Soufouroulaye	12
	Fatoma	9
	Konna	75
	Sendegué	100
	Korientzé	150
DJénné 130	Centrale	0
	Mougna	55
	Taga	25
	Konio	30
	Sofara	80
Tennenkou 130	Centrale	0
	Dioura	90
Bandiagara 75	Centrale	0
	Dourou	25
	Sangha	45
	Kendio	45
	Kani-Gogouma	25
	Wo[3]	150
	Goundaka	60
	Ningary	50

Source: OMM - Div. Production

Notes: 1. S.D.R. = Secteur de Développement Rurale
2. Z.E.R. ou Z.E.A. = Zone d'Expansion Rurale ou Agricole
3. Ancienne route de 45Km. n'est plus practicable en 1984

ANNEXE V-3

VIE MOYENNE DES VÉHICULES DE L'OMM

1972 - 1982

NO. DE REFERENCE DU VEHIC.	DISPONIBILITE MOIS	NO. DE REFERENCE DU VEHIC.	DISPONIBILITE MOIS	NO. DE REFERENCE DU VEHIC.	DISPONIBILITE MOIS
1	80	23	58	45	14
2	68	24	9	46	13
3	70	25	51	47	25
4	40	26	46	48	56
5	Ignoré	27	45	49	49
6	41	28	--	50	Marche encore
7	Ignoré	29	49	51	6
8	Ignoré	30	Marche encore	52	45
9	38	31	Marche encore	53	54
10	57	32	--	54	52
11	34	33	45	55	Marche encore
12	44	34	21	56	52
13	55	35	26	57	32
14	47	36	20	58	41
15	66	37	14	59	11
16	31	38	6	60	28
17	58	39	45	61	16
18	62	40	47	62	28
19	67	41	23	63	11
20	61	42	8	64	24
21	48	43	34	65	49
22	49	44	26	66	21
22-3=19	1016	22-4=18	536	22-2=20	627
VIE MOYENNE 53.5 MOIS		VIE MOYENNE 32.1 MOIS		VIE MOYENNE 31.3 MOIS	

VIE MOYENNE GLOBALE

$\frac{2216}{57}$ = 38.9 MOIS

ANNEXE V-4

INVENTAIRE PHYSIQUE DES STOCKS EN MAGASIN EFFECTUE PAR LA MISSION CONJOINTE USAID ET INSPECTION DES O.D.I.

PIECES DETACHEES LAND ROVER

D E S I G N A T I O N	QUANTITE	PRIX UNITAIRE
Alternateur GEU 205	4	177 625
Amortisseur arrière B 2541	3	79 380
Amortisseur avant 2538	1[illegible]	45 85[illegible]
Amortisseur de Direction H527380	8	48 075
Bague bielle EPS 96166	10	2 095
Barre d'accouple long 10 10 [illegible] (RTC)	14	36 920
Butée d'embrayage GRB 223	3[illegible]	29 310
Cable compteur 623055	34	16 79[illegible]
Cabouchon feu arrière 3746109	1	4 953
Cerveau de frein 6404494-11	5	118 015
Collecteur admission 596000	8	156 090
Collecteur échappement 598473	10	50 250
Commande phare 119 SAE	14	51 165
Coussinet bielle 0,20 : VP9110 1020	17	5[illegible] 165
Coussinet bielle 0,10 [illegible] VR 9110 1010	16	64 680
Coussinet pallier 0,20 RTC 178920	15	46 335
Coussinet pallier 0,10 RTC 172910	7	19 760
Croissillon de cardan G4711; GUI 117	4	202 655
Démarreur complet 256683	25	12 770
Garniture avant GG 721	17	66 610
Garniture arrière GG 971	24	29 925
Phare complet 545	23	45 635
Piston cote réparation 040 597501	5	91 710
Pochette de joint complet 608 124	2	52 515
Pompe à eau complet GW 0312	4	66 540
Pompe à essence 549761	18	247 130
Pompe à huile 513640	6	25 535
Rotule barre accouplement gauche 320-902	29	25 535
Soupape admission 857 573	20	7 200
Soupape échappement 557967	6paires	22 765
Rotule barre accouplement 608464	1	25 535
Jeu de cylindres		

INVENTAIRE D'INSPECTION : PIECES DETACHEES

IH DU 8 AU 9/12/1983

DESIGNATION	QUANTITE	PRIX UNITAIRE
Alternateur	2	103 640
Amortisseur 476 202 C91	10	19 102
Appareil clignotant 1997 985	2	12 848
Appareil de contacteur 241 120 R91	1	8 211
Arbre avant 459 390 C1	1	32 824
Arbre arrière 434 640 C1	3	104 429
Arbre de transmission 11 838	1	143 795
Arrête 660 433 R1	1	17 125
Arrête huile 323 562 C91	1	
Arrête Huile 162 119 991	1	
Arrête Huile 1-352 39	2	
Arrête Huile 382 868 C91	1	
Arrête Huile 396 148 C91	1	18 455
Arrête Huile 458 111 C1	1	
Arrête Huile 448 644 C91	6	17 125
Axe de ressort (chapt)	1	2 802
Arrête Huile 458 11 C1	2	
Bague 269 806	11	339
Bague 2697 83 C1	21	230
Bague 269 806 C1	7	
Bague 291 152 C1	7	339
Bague de Bielle 59 580 R1	1	230
Balais Essuie glace 347 C91	27	
Bille 452 248 C1	30	
Bille 452 280 C1	84	
Bille 595 74 R1	110	
Bille 91094 R1	74	
Bocal 394 120 C94	2	
Boulon 158 392 R1	8	150
Boulon 18 0080	7	98
Boulon 277 232 R1	18	219
Boulon 442 051 C1	4	
Boulon 448 782 C1	2	219
Braket support 274 271 R2	7	
Bras essuie glace 414 739 C1	8	
Bras de rotule	14	
Butée d'embrayage 398 383 C11	6	25 440
Cable accélérateur 414 282 C2	2	2 760
Cable support 395 979 C1	4	12 966
Cabouchon	2	3 147
Cabouchon 384 110 C2	2	
Cartouche à huile 625 626 C1	6	
Case cônique 416 748 CU	1	118 945
Casier de roulement 47620	1	
Casier de roulement 550929	2	
Casier de roulement 95 792 R91	2	
Cervos de freins 455039 C91	2	1 009
Contracteur	2	827
Contracteur clignotant 394 132 R94	2	2 484
Coupelle de frein 460 904 C91	4	
Courroies 3454 78 C91	8	8 295
Courroies 3554 78 C92	4	

13

[illegible] 36 97 I5 [illegible]	6	
Courroies 373 457 C9I	7	6 205
Couvercle 49I 09I C9I	4	
Couvercle de distributeur 453 59I CI	2	
Couvercle de réservoire 89I 550 C9I	I	
Croisillon de cardan I2I 684 R92	5	I8 272
Cylimbloc	5	28 980
Cylimbloc Ronsort	6	I8 053
Delco complet 446 918 C92	5	I8I 240
Demarreur II08 48I (II0 749I)	2	I58 625
Disque d'embrayage 3728 67 C92	6	I52 975
Disque d'embrayage 37 28 67 C92	2	305 950
Ecrou I20 6I4	25	
Ecrou I27 97I RI	I	I09
Ecrou I9I 5I72	5	I09
Ecrou 255 I9 RI	50	I09
Element de Filtre 376 422 CI	I7	80I
Ecrou 3959 I6 CI	2	I09
Enjolivers feu aile	I4	2 856
Feu aile clignotant	3	I 663
Feu avant 443 002 C9I	I	
Filtre à air	24	II 389
Filtre à essence 24I 69[illegible]	6	3 II3
Filtre à Gasoil 478 043 C9I	I0	8 520
Garniture de frein 79 792	7	
Induit de demarreur II0848-I-9B0I	I	
Injecteur IBMDB I035C	4	
Instructeur	4	
Injecteur 486813 C9I	7	
Insulateur 286 325 CI	I2	2 788
Jeux de charbon	27	288
Joint I0 I54 35 R2	2	350
Joint 333 73I C2	4	I64
Joint 3337 C2	I2	I64
Joint 346 728 CI	I0	I64
Joint 347 953	4	I64
Joint 455 248 C9I	2	2 80I
Joint 455 775 C9I	2	
Joint 487051 CI	7	I64
Joint SPI 42I 732 C2	6	
Joint de roue I-38844	2	I75
Kit 423-586-C9I	I	550
Lampe	I0	
Maître cylindre de frein	5	67 760
Motors essuie glace 437-I37-C9I	4	
Nécessaire d'allumage I928095	2	624
Nécessaire de frein	7	67 760
Nécessaire de fusé 493094-C92	5	
Nécessaire de fusée 705 94 R9I	2	I8 0I8
Nécessaire Maître cylindre	4	67 760
Patte Moteur	7	6 4I2
Phare 6670025	4	
Phare complet 874474 R9I	5	
Pignon 46073I CI	4	
Pignon 86 R2	4	I6 395
Plaquette de frein 455778 C9I	I2	48 874
Pochette de joint 36I577 C94	I	40 985
Pochette de joint 478 994 C9	4	
Pochette de joint (partie haute du moteur)	7	26 935
Pompe 404 6I8 CI	5	35 277
Radiateur 39I 450 C2	2	462 245
Radiateur 47I 5II CI	3	462 245

Rotateur 891 4[illegible] C2	2	462 245
Regulateur 364 364 C2	3	I6 998
Relay 485 588 C2	8	I7 I60
Relay 877 303 RI	7	I7 I66
Ressort 346 I30 CI	4	I64
Ressort du Deloo I95 8679	2	
Ressort de Rappel 4I4 292 CI	2	I 827
Retroviseur 447 I40 C94	I	
Rondelle 5-I6 R	200	208
Rondelle I27 890 RI (wacher)	2	208
Rondelle I94 I978	I0	208
Rondelle 232 00I R9I	I	208
Rondelle 239 I84 R2	2	
Rondelle 25708 RI	25	
Rondelle 277 282 RI	I5	
Rondelle 4I8 397 C9I	I	I59
Rondelle 423 604 CI	I0	208
Rondelle 877 283 RI	I5	I59
Rotor de deloo	4	I 663
Roulement GC IIC	I	
Roulement IIC 225	I	
Roulement ST 264	I	6 429
Roulement ST 39I	2	6 429
—"— ST 528	3	6 429
—"— ST 527	3	6 429
—"— ST 679	3	6 429
—"— ST 967	6	6 429
—"— ST 679	I	6 429
—"— ST 969 (casier)	5	
—"— ST 2I6I	4	6 429
—"— ST 2022	5	6 429
—"— ST 2I62	4	6 429
—"— 527	I	6 429
—"— I05 496 H	6	6 429
—"— I2824IR9I	4	6 429
—"— I28242 RI	3	6 429
—"— I4I 067 H	2	6 429
—"— I56 5903	I	6 429
—"— 25584	3	6 429
—"— 25877	I	6 429
—"— 333 729 C2	40	6 429
—"— 344 539 CI	4	6 429
—"— 38I 926 C9I	4	6 429
—"— 387 408 C93	3	6 429
—"— 399 933 C9I	2	6 429
—"— 399 934 C9I	4	6 429
—"— 455 783 C9I	2	6 429
—"— 47I5345	6	6 429
—"— 474 657 C9I	2	6 429
—"— 480 520 C9I	I	6 429
—"— 5500 930	4	6 429
—"— 560 93I	I	6 429
—"— 550 932 RI	3	6 429
—"— 650 7I H	4	6 429
—"— de butée	3	
Sansor assemblage	2	68 83I
Segment	2	2 802
Shaft 452 058 CI	6	II2 39I
Shroud 4I5 824	I	
	I	

Support [illegible] 395 914 C2	2	I2 96[illegible]
Tambour [illegible] 369 269 C2	4	
Thermostat 687 OI8 C2	I4	
Tige essuie Glace 482 590 CI	7	
Tirette de Capot 48I 349 CI	I	I I78
Ventilateur 494 649 CI	2	288
Machine Porti RE (468 84I et 842 CI)	4	
Insuleur 388 I92 C9I	2	2 782
Joint I952 427	2	I64
Ecrou 94I 2230	5	I09
Ecrou 446 06I	25	I09
Relay 24I I20 R9I	2	I7 I66
Clip 300 883 CI	I0	24
Clip 4I6 982 CI	2	569
Joints 36I 763 CI	I0	I64
Support 877 302 RI	I0	24I
Joints 206 59I RI	I0	I64
Ecrou 255 22 RI	I03	I09
Ressort de cale	20	339
Ecrou 255 26 RI	49	I09
Flange 457 954 CI	2	3 479
Valve 680 452 L92	I4	3 457
Insulator 286 324 L92	I4	4 277
Carburateur 467 026 C9I	3	4I4 025
Braket 459 45I CI	2	9 246
Seal 736 B	2	
Truck lamp 44 II2	I	
Insulateur 286 32I CI	2	2 788
Pochette joint 446 522 C9I	3	I4 2I5
Pochette de joint 446 452 CI	2	I4 2I5
Ressort delco 493 070 CI	3	I 663
Filtre 226 4394I	I0	4 830
Rotor delco 268 574 C9I	2	I 663
Nécessaire maître cylindre I66 739 R9I	40	4 590
Arrête huile 380 CI9 C9I	34	I7 I25
Arrête huile 490 576 C92	35	
Nécessaire 455 54I C9I	7	624
Couvercle delco 493 084 CI	I	
Jeu de segment 446 8I9 C92	53	9 980
Vis platiné	4	2 757
Cylimbloc 465 952 C	8	28 980
Cylimbloc 39I 25I	I2	28 980
Joint Carburateur	7	2 I52
Element de filtre 369 500	II	4 480
Manoètre essence 379 608 C9I	5	I6 830
Kit 455 23I C9I	2	89 626
Valve 450 420 C9I	I	3 457
Patte Moteur grand format	7	6 4I2
Ressort de rappel	2	I 827
Pompe à eau 446 608 C92	2	87 976
Croisillon Cardan 9I3 882 R9I	2	I8 272
Nécessaire allumage 478 823 C9I	I	942
Ring 33I 953 CI	2	3 662
Plateau embraye 394 292 C9I	5	227 800
Delco Swithe II4 I45 8	I	I8I 240
Rivés	400	
Ventilateur 225 42I RI	I	288
Braket 404 3I2 CI	I	3 425
Tuyau d'echappement	2	I9 9I5
Tube Colle	I	5 I79
Bras	2	
Joint arrête huile	I	

Boule.....	5	
Douille femelle.....	I	
Pin (charbon).....	IO	405
Nécessaire pour demarreur.....	I	
Casier de roulement IO7 580 RI.....	5	6 429
Roulement 2I076.....	2	6 429
Roulement 028I2.....	I	6 429
Casier roulement 47I 53I I.....	I	
Roulement ST 468.....	I	6 429
Casier roulement I65 964 RI.....	I	
Roulement IO5 503 H.....	6	6 429
Optique phare 596 254 8.....	IO	
Roulement ST 20I8 A.....	6	6 429
Roulement ST 25C.....	I	6 429
Enjoliveur portière 489 476 CI.....	2	
Nécessaire deco 80I5.....	2	
Joint plastic.....	I	
Rivet.....	66	
Roulement 550 927.....	I	6 429
Rondelle 239I 83.....	2	I59
Couvercle de distributeur.....	7	6 965
Roulement 550 890.....	I	6 429
Arrête huile 3800 I9 C9I.....	6	I7 I25
Came 395 954 C3.....	2	
Cage support 9I4 847 847 RI.....	4	I3 355
Huile écrou 997I 36 RI.....	8	
Pompe à eau 446 608 C92.....	I	87 976
Huile écrou 997 I36.....	4	
Courroie 354 I9 CI.....	I	
Thermostat 82°C 77I2.....	2	
Baldor I5I R2.....	I	
Jeange.....	I	5 890
Ref 402 522 C2.....	I	
Baldor 5 42 A82.....	5	
Tuyau Caoutchouc.....	2	
Jeux 4975 23 C9I.....	2	
Joint 37I4 98 C9I.....	I	
Tuyau flexible 528 033 CI B4 Q.....	3	
Bougie à diesel NGK Y IO3.....	8	
Jeux de joint.....	I	
Tuyau (petit).....	2	
Kulo C P.....	I	
Divers.....	I	
Filtre à huile 625 626 CI.....	I	5 606

INVENTAIRE PARTIEL DES STOCKS EN MAGASIN EFFEC
PAR LA MISSION CONJOINTE USAID ET INSPECTION I
O.D.R PEUGEOT 504 (PD 504).-

DESIGNATION	QUANTITE	PRIX INITAIRE
Balaie essuie glace 643070	4	4500
Bras essuie glace 642864	8	4500
Cartouchefiltre à huile LS 152 A	2	2750
Para-brise	1	
Patte moteur 18740-3	7	
Phare complet côte gauche 620-456	1	39790
Pochette de joints 0198-88	3	dont 2 incompl.
Pompe à essence 145022	3	12525
Support à poussée 1843-49	5	41390
Pompe à huile 1000-130	1	31310
Tendeur de chîne 084-906	2	5690
Vis platinée 711-33	2	

PIECES DETACHEES TOYOTA LAND CRUISER (PDTLC).-

DESIGNATION	QUANTITE	PRIX UNITAIRE
Croisillon 04371-3020	2	36 514
Filtre à huile 15600-410100	6	4.600
Nécessaire maître cylindre 04993600	1	39.955
Nécessaire cylindre frein 6020	3	16.476
Pochette joint 0411	1	46.212
Roulements 90-36849-084	3	6429
Roulement moyen 90368	2	8.369
Roulement moyen 90368-29068	2	8.369
Roulement moyen 97610-30303	1	8.369
Soupape admission 13715	6	20.465
Soupape échappement	6	5.212
Roulement moyen 90368-17017	2	

PIECES DETACHEES R12 (PDR12).-

DESIGNATION	QUANTITE	PRIX UNITAIRE
Butée d'embrayage 6.S 2080	1	9690
Cabouchon feu arrière 7701778	3	40990
Collecteur tuyau échappement ER55044	2	
Disque d'embrayage 7700589025	1	26890
Phare complet 7701015077	2	39545
Plaqutte frein arrière 7701201212	3	11 985
Silencieux arrière R314974	3	[illegible]
Socle arrière 7701020655	6	
Support de phare 7709005559	4	
Tuyau intermédiaire ER 4994	3	
Plateau d'embrayage 7700553394	1	26 375
Socle arrière 7701002065 6	4	
Cabouchon 77010775	4	40 990

INVENTAIRE PHYSIQUE DES STOCKS EN MAGASIN EFFECTUE PAR LA MISSION CONJOINTE US-AID ET INSPECTION DES O.D.R.

Pièces détachées Camion Hino

DESIGNATION	Quantité	Prix Unitaire	Prix Total	ETAT
Cartouche gas-oil Sop II7.....	4			

Pièces détachées Camion Berliet

Butée d'embrayage 236 I8030.....	I			
Jeu de Garniture arrière 3700058.....	2			
Jeu de Garniture avant 3700069.....	2			
Pochette de joints (partie haute du moteur 32 35 04.....	I			
Soupape admission 323894.....	8			
Soupape echappement 322827.....	8			

ANNEXE V-5

COMPTABILISATION DES ACHATS DE CARBURANTS - AVEC BONS, FACTURES ET ACHATS DIRECTS
LITRES

ANNEE		ESSENCE	GAS-OIL	PETROLE L.	OBSERVATIONS
78	Bon	105.840	45.972	325	MELANGE
	Facture	105.033	36.817	270	5,242
79	Bon	346.112	69.305	1.991	
	Achat Direct	1.689		49	
	Facture	348.608	68.603	2.095	
80	Bon	336.789	77.096	1.830	
	Achat Direct			15	
	Facture	323.812	76.554	1.845	
81	Bon	243.756	109.216	1.519	
	Achat Direct	3.769	2.823	70	
	Facture	260.503	122.438	1.589	
82	Bon	42.456	24.860	-	
	Achat Direct				
	Facture	42.456	24.860	-	
TOTAUX BONS		1,074,955	326.449	5.665	
DIRECTS ET FACTURES		1,085,874[1]	332.095	5.933	5,242[1]

Note: Le total d'essence plus mélange se chiffre à 1,091,116 litres.

Source: OMM/DAF

ANNEXE V-6

COUT ET DEPENSES DE FONCTIONNEMENT DES VEHICULES

ANNEE 1976 - EN MILLIERS DE FM

NO. DE REF. / MARQUE ET MODELE	NOMBRE ET IMMAT. RM	DISPON. MOIS	ORIGINE OU COUT D'ACHAT	ASSU-RANCE	VIGNETTE	PARCOURS KM.	CARBUR. LITRES	VALEUR CARB.	CONSOM. L/100 KM	VALEUR UNITAIRE FM/L	OBS.
1. Land Rover 88	7149	12)	'72 Don	-	50	15,852	3,392	560	21.4	165	
2. Land Rover 88	7150	12)	du	-	50	20,000	4,280	706	21.4	165	
3. Land Rover 109	7151	12)	Gouvr. Mopti	-	50	20,000	4,280	706	21.4	165	
4. Peugeot Fam. 404	IT2823	8	OMM'73	-	20	43,712	6,338	1,046	14.5	165	Estim. Autre P. Famil.
6. Land Rover 88	8308	9	OMM'73	-	50	21,735	4,651	767	21.4	165	Estim. Autre Land R.
9. Camion Berliet D	IT3167	12	OMM'74	-	120	22,870	12,190	1,438	53.3	118	Estim. Autre Cam. B.
10. Land Rover 88	0470	12	OMM'74	-	50	9,912	2,280	376	23.0	165	
11. Camion Berliet D	IT3386	12	OMM'74	-	120	22,870	12,190	1,438	53.3	118	Estim. Autre Cam. B.
12. Peugeot Brk. 504	0467	12	OMM'74	-	50	48,587	7,385	1,218	15.2	165	Estim. Autre P. Brk.
13. Land Rover 109	0468	12	OMM'74	-	50	20,000	4,000	660	20.0	165	Estim. Arbitraire
14. Camion Berliet D	0473	12	OMM'74	-	120	22,870	12,190	1,438	53.3	118	Estim. Arbitraire
15. Camion Berliet D	0474	12 - 10	OMM'74	-	120	22,870	12,190	1,438	53.3	118	Estim. 10 Mois
16. Peug. Bach. 404	IT3320	12	OMM'74	-	20	42,213	6,205	1,024	14,7	165	Estim. Autre P. Bachées
17. Land Rover Car 109	0475	12	OMM'75	-	50	32,122	7,259	1,198	22.6	165	
18. Land Rov. 109	0480	12	OMM'75	-	50	13,260	3,129	516	23.6	165	
19. Land Rov. 109	0478	12	OMM'75	-	50	20,112	5,651	932	28.1	165	
ESSENCE	15	168	-	-	1,020	307,505	58,849	9,709	19.1	165	
DIESEL	4					91,480	48,760	5,752	53.3	117.9	

ANNEXE V-6

COUT ET DEPENSES DE FONCTIONNEMENT DES VEHICULES

ANNEE 1976 - EN MILLIERS DE FM

NO. DE REF. / MARQUE ET MODELE	NOMBRE ET IMMAT. RM	DISPON. MOIS	ORIGINE OU COUT D'ACHAT	ASSU-RANCE	VIGNETTE	PARCOURS KM.	CARBUR. LITRES	VALEUR CARB.	CONSOM. L/100 KM	VALEUR UNITAIRE FM/L	OBS.
20. Land Rover 88	0465	12	OMM'75	-	50	23,467	5,397	890	23.0	165	
21. Land Rov. 109	0479	5	OMM'76 3,508	-	50	9,126	1,825	301	20.0	165	
22. Land Rov. 109	0469	8	OMM'76 3,514	-	50	21,016	3,993	659	19.0	165	
23. Peug. Brk. 304	0476	8	OMM'76 2,532	-	50	25,284	3,843	634	15.2	165	
24. Renault 4	0466	7	OMM'76 1,748	-	10	15,834	1,314	217	8.3	165	Estim. Autre R-4
25. Peu. Bach. 404	0464	4	OMM'76 2,674	-	20	14,071	3,236	534	23.0	165	
26. Land Rov. Car 109	0481	4	DON'76	-	50	6,225	1,276	210	20.5	165	
27. Land Rov.Bach. 109	0471	4	Amb.USA AID'76	-	50	13,161	3,053	504	23.2	165	
TOT	8	52	13,976	-	330	128,184	23,937	3,949	18.7	165	
TOT GEN.	24	220	13,976	1,870[1]	1,350[2]	527,169	131,546	19,410	24.9	-	
DONT:											
VEHICULES A ESSENCE	20	172	-	-	-	435,689	82,786	13,658	19.0	165	
VEHICULES DIESEL	4	48				91,480	48,760	5,752	53.3	118	
à 80%d'utilisation		137.6	-			348,551	66,228	10,926	19.0	165	
		38.4				73,184	39,008	4,602	53.3	118	
						421,735	105,236	15,528	24.9	-	

Note: [1] Y Compris 59 mille FM Pour Assurance de Mobylettes
[2] Paiement des Vignettes ne fut pas éxigé en 1976

ANNEXE V-6

COUT ET DEPENSES DE FONCTIONNEMENT DES VEHICULES

ANNEE 1977- EN MILLIERS DE FM

NO. DE REF. / MARQUE ET MODELE	NOMBRE ET IMMAT. RM	DISPON. MOIS	ORIGINE OU COUT D'ACHAT	ASSU-RANCE	VIGNETTE	PARCOURS KM.	CARBUR. LITRES	VALEUR CARB.	CONSOM. L/100 KM	VALEUR UNITAIRE FM/L	OBS.
1. Land Rover 88	7149	12)	Don'72	-	50	15,852	3,392	597	21.4	176	
2. Land Rover 88	7150	12)	Gouver	-	50	20,000	4,280	753	21.4	176	Estim.
3. Land Rover 109	7150	12)	Mopti	-	50	20,000	4,280	753	21.4	176	Estim.
9. Camion Berliet D	IT3167	12	OMM'74	-	120	22,870	12,190	1,548	53.3	127	Estim.Autres Cam.Ber.
10. Land Rover 88	0470	12	OMM'74	-	50	9,912	2,280	401	23.0	176	
11. Camion Berliet D	IT3386	8	OMM'74	-	120	15,246	8,080	1,026	53.3	127	Estim.Autres Cam. Ber.
12. Peu.Brk. 504	0467	11	OMM'74	-	50	48,587	7,385	1,230	15.2	176	Estim.Autres P. Brk.
13. Land Rover 109	0468	12	OMM'74	-	50	20,000	4,000	704	20.0	176	Estim.
14. Camion Berliet D	0473	12	OMM'74	-	120	22,870	12,190	1,548	53.3	127	Estim.Autres Cam. B.
15. Camion Berliet D	IT0474	12	OMM'74	-	120	22,870	12,190	1,548	53.3	127	Estim.Autres Cam. B.
16. Peu. Bach. 404	IT3320	3	OMM'74	-	20	10,553	1,551	273	14.7	176	Estim.Autres Bachées
17. Land Rover Car 109	0475	12	OMM'75	-	50	32,122	7,259	1,277	22.6	176	
18. Land Rover 109	0480	12	OMM'75	-	50	13,260	3,129	551	23.6	176	
19. Land Rover 109	0478	12	OMM'75	-	50	20,112	5,651	995	28.1	176	
20. Land Rover 88	0465	12	OMM'75	-	50	23,467	5,397	950	23.0	176	
21. Land Rover 109	0479	12	OMM'76	-	50	36,259	7,252	1,276	20.0	176	
22. Land Rover 109	0469	12	OMM'76	-	50	31,524	5,989	1,054	19.0	176	
TOT ESSENCE	17	190	--	Suite	1100	301,648	61,843	10,814	20.5	174.9	
TOT DIESEL						83,855	44,650	5,670	53.2	126.9	

ANNEXE V-6

COUT ET DEPENSES DE FONCTIONNEMENT DES VEHICULES

ANNEE 1977- EN MILLIERS DE FM

NO. DE REF. / MARQUE ET MODELE	NOMBRE ET IMMAT. RM	DISPON. MOIS	ORIGINE OU COUT D'ACHAT	ASSU-RANCE	VIGNETTE	PARCOURS KM.	CARBUR. LITRES	VALEUR CARB.	CONSOM. L/100 KM	VALEUR UNITAIRE FM/L	OBS.
23. Peu. Brk. 304	0476	12	OMM'76	-	50	37,926	5,765	1,014	15.2	176	
24. Renault 4	0466	3	OMM'76	-	10	6,786	563	99	8.3	176	Estim. Autre R-4
25. Peu. Bach. 404	0464	12	OMM'76	-	20	42,213	6,205	1,092	14.7	176	
26. Land Rover Car 109	0481	12	Don'76 Amb.USA	-	50	7,470	1,531	269	20.5	176	
27. Land Rover Car 109	0471	12	AID'76	-	50	39,492	9,162	1,612	23.2	176	
28. Peugeot Berl. 504	0350	0	OMM'77 3,885	-	50	-	-	-	-	-	
29. Peugeot Brk. 504	7630	11	OMM'77 3,626	-	50	48,587	7,385	1,299	15.2	176	Estim Autres P. Break
33. Renault 4	0472	11	OMM'77 1,918	-	10	27,192	2,257	397	8.3	176	
TOTAL	8-1	73	9,429	-	290	209,666	32,868	5,782	15.7	175.9	
						-	-	-	-	-	
TOT. GEN.	25-1	263	9,429	5,338[1]	1,390[2]	595,169	139,361	22,266	23.4	-	
Dont,											
Véhicules à Essence	21-4	219	-	-	-	511,314	94,711	16,596	18.5	175.2	
Véhicules Diésel	4	44				83,855	44,650	5,670	53.2	126.2	
		175.2	-	-		409,051	75,769	13,277	18.5	175.2	
à 80% utilisation		35.2				67,084	35,720	4,536	53.2	126.9	
						476,135	111,489	17,813	23.4	-	

Notes: [1]Y Compris 52 mille FM pour Assurance de Mobylettes
[2]Le pouement des Vignettes ne fut pas exigé en 1977

ANNEXE V-6

COUT ET DEPENSES DE FONCTIONNEMENT DES VEHICULES

ANNEE 1978 - EN MILLIERS DE FM

NO. DE REF. / MARQUE ET MODELE	NOMBRE ET IMMAT. RM	DISPON. MOIS	ORIGINE OU COUT D'ACHAT	ASSU-RANCE	VIGNETTE	PARCOURS KM.	CARBUR. LITRES	VALEUR CARB.	CONSOM. L/100 KM	VALEUR UNITAIRE FM/L	OBS.
1. Land Rover - 88	7149	12	Don'72	-	50	15,852	3,392	611	21.4	180	
2. Land Rover - 88	7150	3	Gouver.	-	50	5,000	1,070	193	21.4	180	Estim.
3. Land Rover - 109	7151	5	Mopti	-	50	8,333	1,783	321	21.4	180	
10. Land Rover - 88	0470	12	OMM'74	-	50	9,912	2,280	410	23.0	180	
13. Land Rover - 109	0468	10	OMM'74	-	50	16,000	3,200	576	20.0	180	Estim.
14. Camion Berliet-D	0473	8	OMM'74	-	120	15,246	8,080	1,050	53.3	130	
15. Camion Berliet-D	0474	12	OMM'74	-	120	22,870	12,190	1,585	53.3	130	
17. Land Rover 109	0475	12	OMM'75	-	50	32,122	7,259	1,306	22.6	180	
18. Land Rover 109	0480	12	OMM'75	-	50	13,260	3,129	563	23.6	180	
19. Land Rover 109	0478	12	OMM'75	-	50	20,112	5,651	1,071	28.1	180	
20. Land Rover 88	0465	12	OMM'75	-	50	23,467	5,397	971	23.0	180	
21. Land Rover 109	0479	12	OMM'76	-	50	36,259	7,252	1,305	20.0	180	
22. Land Rover 109	0469	12	OMM'76	-	50	31,524	5,989	1,078	19.0	180	
23. Peugeot Break 304	0476	12	OMM'76	-	50	37,926	5,765	1,038	15.2	180	
25. Peugeot Bachee 404	0464	12	OMM'76	-	20	42,213	6,205	1,116	14.7	180	
26. Land Rover 109	0481	12	Amb.USA76	-	50	30,223	7,405	1,345	24.5	180	
TOT ESSENCE	16	170	-	-	910	322,203	65,777	11,904	20.4	180.9	
TOT DIESEL						38,116	20,270	2,635	53.2	130	

ANNEXE V-6

COUT ET DEPENSES DE FONCTIONNEMENT DES VEHICULES

ANNEE 1978 - EN MILLIERS DE FM

NO. DE REF. / MARQUE ET MODELE	NOMBRE ET IMMAT. RM	DISPON. MOIS	ORIGINE OU COUT D'ACHAT	ASSU-RANCE	VIGNETTE	PARCOURS KM. 1	CARBUR. LITRES 1	VALEUR CARB.	CONSOM. L/100 KM	VALEUR UNITAIRE FM/L	OBS.
27. Land Rov. Bach109	0471	12	OMM'76	-	50	39,492	9,162	1,649	23.2	180	
29. Peugeot Brk. 504	7630	12	OMM'77	-	50	37,926	5,765	876	15.2	180	Estim.Autres P. Break
30. Hino Camion KB212D	0573	12	AID'78	-	120	33,048	16,160	2,101	48.9	130	Diésel
31. Hino Camion KB212D	0574	12	AID'78	-	120	29,620	13,714	1,783	46.3	130	Diésel
33. Renault R4	0472	12	OMM'77	-	10	29,864	2,479	446	8.3	180	
34. IH Scout Pick-up	0605	8	AID'78	-	80	24,176	6,696	1,205	27.7	180	Estim. Autres Scout Pick up
35. IH Scout Pick-up	0606	8	AID'78	-	80	24,176	6,696	1,205	27.7	180	
36. IH Scout Pick-up	0607	8	AID'78	-	80	24,176	6,696	1,205	27.7	180	
37. IH Camion à grain	0651	5	AID'78	-	120	8,280	6,607	1,189	79.8	180	Moyenne Pour 5 mois du parcours années 79 - 81
38. IH Camion à grain	0652	5	AID'78	-	120	8,280	6,607	1,189	79.8	180	
39. IH Camion à grain	0653	5	AID'78	-	120	8,280	6,607	1,189	79.8	180	
40. IH Camion à grain	0654	5	AID'78	-	120	8,280	6,607	1,189	79.8	180	
41. IH Camion à grain	0655	5	AID'78	-	120	8,280	6,607	1,189	79.8	180	
42. IH Camion à grain	0656	5	AID'78	-	120	8,280	6,607	1,189	79.8	180	
43. IH Camion à grain	0657	5	AID'78	-	120	8,280	6,607	1,189	79.8	180	
TOT ESSENCE	15	119	----		1,430	237,776	83,743	14,999	35.2	179.1	
TOT DIESEL						62,668	29,874	3,884	47,6	130	

ANNEXE V-6

COUT ET DEPENSES DE FONCTIONNEMENT DES VEHICULES

ANNEE 1978 - EN MILLIERS DE FM

NO. DE REF. / MARQUE ET MODELE	NOMBRE ET IMMAT. RM	DISPON. MOIS	ORIGINE OU COUT D'ACHAT	ASSU-RANCE	VIGNETTE	1 PARCOURS KM.	1 CARBUR. LITRES	VALEUR CARB.	CONSOM. L/100 KM	VALEUR UNITAIRE FM/L	OBS.
48. Land Rover Car109	0660	8	AID'78	-	50	21,774	4,463	803	20.5	180.0	
49. Land Rover Car109	0661	6	AID'78	-	50	20,689	4,241	763	20.5	180.0	
TOT	2	14	-	-	100	42,463	8,704	1,566	20.5	180.0	
TOT GEN.	33	303	-	45,252	2,440	703,220	208,368	34,988	29.6	167.9	Moyenne
dont,											
VEHICULES A ESSENCE	29	259	-	-	-	602,436	158,224	28,469	26.3	179.9	
VEHICULES DIESEL	4	44				100,784	50,144	6,519	49.7	130	
à 80% d'utilisation		207.2	-	-		481,949	126,579	22,775	26.3	179.9	
		35.2				80.627	40.115	5,215	49.7	130.0	
		242.4				562,576	166,694	27,990	29.6	-	

Notes: 1. Le kilometrage et la consommation de carburants coiffe uniquement deuz mois pour les voitures et trois mois pour les camions - donc ne peuvent pas etre utilisés.

ANNEXE V-6

COUTS ET DEPENSES DE FONCTIONNEMENT DES VEHICULES

ANNEE 1979 - EN MILLERS DE FM

NO. DE REF. / MARQUE ET MODELE	NOMBRE ET IMMAT. RM	UTILISATION MOIS Disp.	UTILISATION MOIS Réelle	ORIGINE OU COUT D'ACHAT	ASSURANCE	VIGNETTE	PARCOURS KM.	CARBUR. LITRES	VALEUR CARB.	CONSOM. L/100 KM.	VALEUR UNITAIRE FM/L	OBS.
1. Land Rov. 88	7149	3	3	GRM'72	-	50	3,960	848	170	21.4	200.5	
10. Land Rov. 88	0470	4	4	OMM'74	-	50	3,307	761	152	23.0	199.7	
15. Camion Berl.									605		143.3	Ajusté
- D.	0474	12	3	OMM'74	-	120	8,797	4,228	846	48.1	200.1	Diésel 1
17. Land Rov. 109	0475	12	12	OMM'75	-	50	35,270	7,885	1,636	22.6	207.5	
18. Land Rov. 109	0480	12	8	OMM'75	-	50	9,897	2,339	468	23.6	200.1	
19. Land Rov. 109	0478	12	11	OMM'75	-	50	18,338	5,170	785	28.2	151.8	A Koro
20. Land Rov. 88	0465	12	9	OMM'75	-	50	18,122	4,168	861	23.0	206.5	
21. Land Rov. 109	0479	12	9	OMM'76	-	50	20,019	6,085	1,247	30.4	204.9	A Bandiagara
22. Land Rov. 109	0469	12	9	OMM'76	-	50	23,207	4,494	899	19.4	200.0	
23. Peugeot Brk. 304	0476	12	5	OMM'76	-	50	14,340	2,230	465	15.6	208.5	
25. Peugeot Bach 404	0464	12	12	OMM'76	-	20	35,113	5,562	1,146	15.8	206.0	
26. Land Rov. Car 109	0481	12	3	Amb'76	-	50	4,540	1,705	341	37.6	200.0	
27. Land Rov. Bach. 109	0471	12	12	AID'76	-	50	38,842	8,972	1,884	23.1	210.0	
29. Peugeot Brk. 504	7630	12	12	OMM'77	-	50	48,851	7,869	1,608	16.1	204.3	
30. Cam. Hino									2,311		154	Ajusté
KB212 D.	0573	12	10	AID'78	-	120	31,108	15,006	3,177	48.2	211.7	Diésel 1
TOT ESSENCE	15	149	109	-	-	860	313,711	77,322	15,685	-	-	
TOT DIESEL		24	13									

ANNEXE V-6

COUTS ET DEPENSES DE FONCTIONNEMENT DES VEHICULES

ANNEE 1979 - EN MILLERS DE FM

NO. DE REF.	MARQUE ET MODELE	NOMBRE ET IMMAT. RM	UTILISATION MOIS Disp.	UTILISATION MOIS Réelle	ORIGINE OU COUT D'ACHAT	ASSUR-RANCE	VIGNETTE	PARCOURS KM.	CARBUR. LITRES	VALEUR CARB.	CONSOM. L/100 KM.	VALEUR UNITAIRE FM/L	OBS.
31.	Cam. Hino KB 212 - D.	0574	12	10	AID'78	-	120	20,438	9,996	1,539 2,058	48.9	154 208.9	Ajusté Diésel
33.	Renault R4	0472	12	12	OMM'77	-	10	36,245	2,991	616	8.3	205,9	
34.	IH Scout Pick-up	0605	5	3	AID'78	-	80	916	790	158	86.2	200.0	Formation } Parcours douteux
35.	IH Scout Pick-up	0606	12	6	AID'78	-	80	29,294	4,948	1,073	16.8	216.9	
36.	IH Scout Pick-up	0607	12	9	AID'78	-	80	22,049	5,525	1,161	25.1	210.1	
37.	IH Cam. à Grain	0651	4	6	AID'78	-	120	8,400	[illegible]	941	56.0	200.0	
38.	IH Cam. à Grain	0652	1	1	AID'78	-	120	[illegible]	[illegible]	327	115.4	200.0	
39.	IH Cam. à Grain	0653	12	6	AID'78	-	120	[illegible]	[illegible]	1,990	111.9	203.1	
40.	IH Cam. à Grain	0654	12	2	AID'78	-	120	5,402	3,960	855	73.3	215.9	
41.	IH Cam. à Grain	0655	12	6	AID'78	-	120	16,311	9,935	2,066	60.9	208.0	
42.	IH Cam. à Grain	0656	3	1	AID'78	-	120	1,672	355	71	21.3	200.0	
43.	IH Cam. à Grain	0657	12	6	AID'78	-	120	11,450	8,045	1,708	70.3	212.3	
	TOTAL	12	109	68	-	-	1,210	162,351	62,682	13,024	-	-	

Source:
1. Chronologie Historique des Véhicules: Préparé en Nov. 1984
2. OMM/DAP/Sect Transport - Situations Mensuelles des Kilométrages - 1979 - 1982
3. OMM/DAP/Sect Transport - Situation Annuelle des Consomations 1979 - 1982

ANNEXE V-6

COUTS ET DEPENSES DE FONCTIONNEMENT DES VEHICULES

ANNEE 1979 - EN MILLERS DE FM

NO. DE REF.	MARQUE ET MODELE	NOMBRE ET IMMAT. RM	UTILISATION MOIS Disp.	UTILISATION MOIS Réelle	ORIGINE OU COUT D'ACHAT	ASSUR-RANCE	VIGNETTE	PARCOURS KM.	CARBUR. LITRES	VALEUR CARB.	CONSOM. L/100 KM.	VALEUR UNITAIRE FM/L	OBS.
48.	Land Rov. Car 109	0660	12	12	AID'78	-	50	38,527	7,904	1,644	20.5	208.0	
49.	Land Rov. Car 109	0661	12	12	AID'78	-	50	47,601	9,763	2,027	20.5	207.6	
50.	Peugeot Brk. 504	0726	11	9	AID'79	-	50	49.117	6,610	1,322	13.5	200.0	
51.	Peugeot Brk. 504	0727	6	6	AID'79	-	50	33,083	4,403	881	13.3	200.1	
52.	Peugeot Fam. 504	0728	11	11	AID'79	-	50	57,423	7,730	1,586	13.5	205.2	
53.	Land Rov. Bach. 109	0768	10	7	AID'79	-	50	19,428	4,362	897	22.5	205.6	
54.	Land Rov. Bach. 109	0769	10	7	AID'79	-	50	20,994	4,159	863	19.8	207.5	
55.	Toyota Land Cruiser	0745	10	10	AID'79	-	80	36,681	7,717	1,600	21.0	207.3	
56.	Toyota Land Cruiser	0746	10	10	AID'79	-	80	51,912	8,930	1,817	17.2	203.5	
57.	Renault 12	0750	5	9	OMM'79 2,995	-	50	35,103	5,198	1,061	14.8	204.1	
58.	Renault 12	0751	5	5	OMM'79 2,995	-	50	34,116	3.574	740	10.5	207.1	
59.	Peugeot Ber. 504	0899	0	0	OMM'79 6,781	-	-	-	-	-	-	-	
60.	Toyota Cor. Brk.	8561	2	1	AID'79	-	50	2,128	300	75	14.1	250.0	
	TOTAL	13	104	99	12,771	-	660	426,113	70,650	14,513	-	-	197.5
	TOT GEN	40 - 1	376	289	12,771	36,938	2,730	902,175	210,654	43,222	23.3	205.2	
	dont,			77%						4,455		152.4	Ajusté
	VEHICULES DIESEL	3	36	23	-	-	-	-60,343	29,230	6,081	48.4	208.0	Voir Ver
	VEHICUELS ESSENCE	37 - 1	340	266	-	-	-	841,832	181,424	37,141	21.6	204.7	15 et 31
										41,596			

Notes: Apparément trompé en utilisant le prix unitaire de l'essence. Donc, chiffre ajusté au prix du Diésel

ANNEXE V-6

COUTS ET DEPENSES DE FONCTIONNEMENT DES VEHICULES

ANNEE 1980 - EN MILLERS DE FM

NO. DE REF.	MARQUE ET MODELE	NOMBRE ET IMMAT. RM	UTILISATION MOIS Disp.	UTILISATION MOIS Réelle	ORIGINE OU COUT D'ACHAT	ASSUR-RANCE	VIGNETTE	PARCOURS KM.	CARBUR. LITRES	VALEUR CARB.	CONSOM. L/100 KM.	VALEUR UNITAIRE FM/L	OBS.
15.	Cam.Berliet D	0474	4	4	OMM'74	-	120	7,215	4,230	981	58.6	231.9	Diesel
17.	Land Rov. Car 109	0475	3	3	OMM'75	-	50	4,882	2,180	763	44.7	350.0	
18.	Land Rov. 109	0480	7	4	OMM'75	-	50	3,363	1,315	436	39.1	331.6	
19.	Land Rov. Car 109	0478	12	12	OMM'75	-	50	20,210	5,675	1,849	28.1	325.8	
20.	Land Rov. 88	0465	3	1	OMM'75	-	50	1,434	330	104	23.0	315.2	
21.	Land Rov. 109	0479	4	3	OMM'76	-	50	16,240	1,555	497	9.6	319.6	
22.	Land Rov. 109	0469	5	4	OMM'76	-	50	10,940	1,845	581	16.9	314.9	
23.	Peugeot Brk. 304	0476	12	8	OMM'76	-	50	21,566	3,862	1,255	17.9	325.0	
25.	Peugeot Bach. 404	0464	12	12	OMM'76	-	20	49,314	6,700	2,199	13.6	328.2	
26.	Land Rov Car 109	0481	7	6	USA'76	-	50	22,667	5,555	1,770	24.5	318.6	
27.	Land Rov. Bach. 109	0471	6	6	Don Amb. AID'76	-	50	20,407	4,740	1,445	23.2	304.8	
29.	Peugeot Brk. 504	7630	12	12	OMM'77	-	50	34,803	6,053	1,989	17.4	328.6	
30.	Cam.Hino KB 212 D	0573	12	10	AID'78	-	120	30,946	13,790	3,261	44.6	236.5	Diésel
31.	Cam.Hino KB 212 D	0574	12	10	AID'78	-	120	36,146	16,338	3,825	42.4	234.1	Diésel
33.	Renault 4 (DIESEL) (ESSENCE)	0472	10	8	OMM'78	-	10	13,529 (74,307) (219,355)	1,954	629	14.4	321.9	
	TOTAL	15	121	103	-	-	890	293,662	76,122	21,584	-	-	

ANNEXE V-6

COUTS ET DEPENSES DE FONCTIONNEMENT DES VEHICULES

ANNEE 1980 - EN MILLERS DE FM

NO. DE REF.	MARQUE ET MODELE	NOMBRE ET IMMAT. RM	UTILISATION MOIS Disp.	UTILISATION MOIS Réelle	ORIGINE OU COUT D'ACHAT	ASSUR-RANCE	VIGNETTE	PARCOURS KM.	CARBUR. LITRES	VALEUR CARB.	CONSOM. L/100 KM.	VALEUR UNITAIRE FM/L	OBS.
35.	IH Scout Pick-up	0606	6	6	AID'78	-	80	12,136	3,683	1,095	30.3	297.3	
36.	IH Cam. à grain	0653	12	4	AID'78	-	120	4,249	1,740	609	40.9	350.0	
40.	IH Cam. à grain	0654	3	7	AID'78	-	120	9,694	6,600	2,171	68.1	328.9	
41.	IH Cam. à grain	0655	6	3	AID'78	-	120	3,771	2,920	920	77.4	315.1	
43.	IH Cam. à grain	0657	12	6	AID'78	-	120	11,350	8,700	2,609	76.6	299.9	
44.	IH Scout Sta. Wag.	0981	8	6	AID'80	-	80	17,466	4,102	1,436	23.6	350.1	
45.	IH Scout Sta. Wag.	0982	8	6	AID'80	-	80	20,435	4,800	1,680	23.5	350.0	
46.	IH Scout Sta. Wag.	0983	8	5	AID'80	-	80	10,718	2,857	1,000	26.7	350.0	
47.	IH Scout Sta. Wag.	0984	8	4	AID'80	-	80	8,822	2,348	822	26.6	350.0	
48.	Land Rov. Car 109	0660	12	10	AID'78	-	50	21,352	5,330	1,692	25.0	317.4	
49.	Land Rov. Car 109	0661	12	9	AID'78	-	50	24,808	7,053	2,357	28.4	334.2	
50.	Peugeot Brk. 504	0726	12	11	AID'79	-	50	53,515	8,770	2,877	16.4	328.0	
52.	Peugeot Fam. 504	0728	12	12	AID'79	-	50	68,659	10,737	3,495	15.6	325.5	
53.	Land Rov. Bach 109	0768	12	9	AID'79	-	50	29,025	7,003	2,248	24.1	321.0	
54.	Land Rov. Bach. 109	0769	12	10	AID'79	-	50	26,795	5,966	1,947	22.3	326.3	
55.	Toyota Land Cruiser	0745	12	10	AID'79	-	80	25,968	7,807	2,505	30.1	320.9	
	TOTAL	16	155	118	-	-	1,260	348,763	90,416	29,463	-	-	

ANNEXE V-6

COUTS ET DEPENSES DE FONCTIONNEMENT DES VEHICULES

ANNEE 1980 - EM MILLIERS DE FM

NO. DE REF.	MARQUE ET MODELE	NOMBRE ET IMMAT. RM	UTILISATION MOIS Disp.	UTILISATION MOIS Réelle	ORIGINE OU COUT D'ACHAT	ASSUR-RANCE	VIGNETTE	PARCOURS KM.	CARBUR. LITRES	VALEUR CARB.	CONSOM. L/100 KM.	VALEUR UNITAIRE FM/L	OBS.
56.	Toyota Land Cruiser	0746	12	5	AID'79	-	80	17,817	3,062	910	17.2	297.2	
57.	Renault 12	0750	12	11	OMM'79	-	50	38,409	6,498	2,135	16.9	328.6	
58.	Renault 12	0751	12	10	OMM'79	-	50	33,536	4,237	1,405	12.7	328.1	
59.	Peugeot Ber. 504	0899	8	6	OMM'79	-	50	36,952	4,065	1,304	11.0	320.8	
60.	Toyota Cor. Break	8561	12	9	AID'79	-	50	37,409	3,830	1,235	10.2	332.4	
64.	Peugeot Ber. 504 1	1020	4	4	OMM'80	-	50	17,429	2,325	814	13.3	350.1	
65.	Toyota Land Cruiser	1518	0	0	5,530 AID'80	-	80	-	-	-	-	-	Voir Note 1
	TOTAL	7-1	60	45	5,530	-	410	181,552	24,053	7,803	-	-	
	TOT GEN dont,	38-1	336	266 79%	5,530	43,116	2,560	823,977	190,591	58,850	23.1	308.8	
	VEHICULES DIESEL	3	28	24	-	-	-	74,307	34,358	8,067	46.2	234.2	
	VEHICULES ESSEN.	35-1	308	242	-	-	-	749,670	156,233	50,783	20.8	325.0	

Notes: 1. Carburant au Compte de la Recherche jusqu'à 1982 - (Selon-OMM Comot. Matière)

ANNEXE V-6

COUTS ET DEPENSES DE FONCTIONNEMENT DES VEHICULES

ANNEE 1981 - EM MILLERS DE FM

NO. DE REF.	MARQUE ET MODELE	NOMBRE ET IMMAT. RM	UTILISATION MOIS Disp.	UTILISATION MOIS Réelle	ORIGINE OU COUT D'ACHAT	ASSUR-RANCE	VIGNETTE	PARCOURS KM.	CARBUR. LITRES	VALEUR CARB.	CONSOM. L/100 KM.	VALEUR UNITAIRE EM/L	OBS.
23.	Peugeot Brk. 304	0476	1	1	OMM'76	-	50	8,341	1,001	350	12.0	350.0	
29.	Peugeot Brk. 504	0730	2	1	AID'77	-	50	2,666	320	112	16.7(E)	350.0	
30.	Hino Camion KB 212 D.	0573	12	11	AID'78	-	120	23,320	12,578	4,088	53.9	325.0	Diesel
31.	Hino Cam KB 212 D.	0574	12	11	AID'78	-	120	19,955 E	9,499	3,087	47.6(E)	325.0	Diesel
37.	IH Cam. à grain	0651	5	5	AID'78	-	120	5,582	5,470	2,462	98.0	450.0	
39.	IH Cam. à grain	0653	12	6	AID'78	-	120	12,533	10,006	4,503	79.8	450.0	
40.	IH Cam. à grain	0654	12	6	AID'78	-	120	9,902	5,851	2,633	59.1	450.0	
43.	IH Cam. à grain	0657	5	4	AID'78	-	120	3,803	3,473	1,563	91.3	450.0	
	TOTAL	9	61	45	-	-	820	86,102	48,198	18,799	-	-	

ANNEXE V-6

COUTS ET DEPENSES DE FONCTIONNEMENT DES VEHICULES

ANNEE 1981 - EN MILLERS DE FM

NO. DE REF.	MARQUE ET MODELE	NOMBRE ET IMMAT. RM	UTILISATION MOIS Disp.	UTILISATION MOIS Reelle	ORIGINE OU COUT D'ACHAT	ASSUR-RANCE	VIGNETTE	PARCOURS KM.	CARBUR. LITRES	VALEUR CARB.	CONSOM. L/100 KM.	VALEUR UNITAIRE FM/L	OBS.
44.	IH Scout Sta. Wagon	0981	12	12	AID'80	-	80	30,306	9,159	4,122	30.2	450.0	
45.	IH Scout Sta. Wagon	0982	6	6	AID'80	-	80	11,096	4,364	1,964	39.3	450.0	
46.	IH Scout Sta. Wagon	0983	5	4	AID'80	-	80	9,340	2,335	1,051	25.0	450.0	
47.	IH Scout Sta. Wagon	0984	12	12	AID'80	-	50	18,473	6,125	2,756	33.2	450.0	
48.	Land Rov. Car 109	0660	12	11	AID'78	-	50	13,864	4,437	1,997	32.0	450.0	
49.	Lan Rov. Car 109	0661	12	8	AID'78	-	50	5,960	2,000	900	33.6	450.0	
50.	Peugeot Brk. 504	0726	12	12	AID'79	-	50	55,676	8,370	3,767	15.0	450.0	
52.	Peugeot Fam 504	0728	12	10	AID'79	-	50	54,247	7,792	3,506	14.4	450.0	
53.	Land Rov. Bach. 109	0768	12	11	AID'79	-	50	24,408	5,650	2,542	23.1	449.1	
54.	Land Rov. Bach. 109	0769	12	9	AID'79	-	50	24,300	3,540	1,593	14.6	450.0	
55.	Toyota Land Cruiser	0745	12	10	AID'79	-	80	24,866	6,656	2,995	26.7	450.0	
56.	Toyota Land Cruiser	0746	12	10	AID'79	-	80	12,091	3,695	1,663	30.6	450.0	
57.	Renault 12	0750	12	11	OMM'79	-	50	37,848	5,508	2,479	14.5	450.0	
58.	Reanult 12	0751	12	10	OMM'79	-	50	18,416	2,676	1,204	14.5	450.0	
60.	Toyota Cor. Brk.	8561	12	9	AID'79	-	50	17,581	2,810	1,265	16.0	450.0	
61.	IH Scout Pick-up D	1081	12	4	AID'81	-	80	15,106	2,359	745 1,062	15.6	316.3 450.0	Ajusté Diésel 1
	TOTAL	16	179	149	-	-	1,010	373,578	77,476	34,866	-	-	

ANNEXE V-6

COUTS ET DEPENSES DE FONCTIONNEMENT DES VEHICULES

ANNEE 1981 - EN MILLERS DE FM

NO. DE REF.	MARQUE ET MODELE	NOMBRE ET IMMAT. RM	UTILISATION MOIS Disp.	UTILISATION MOIS Réelle	ORIGINE OU COUT D'ACHAT	ASSUR-RANCE	VIGNETTE	PARCOURS KM.	CARBUR. LITRES	VALEUR CARB.	CONSOM. L/100 KM.	VALEUR UNITAIRE FM/L	OBS.
62.	IH Scout Pick up D	1082	12	9	AID'81	-	80	15,240 E	3,783	1,196 1,703	25.0 E	316 450	Ajusté Diésel 1
63.	IH Scout Pick up D	1085	11	6	AID'81	-	80	11,338	3,040	961 1,368	26.8	316 450	Ajusté Diésel 1
64.	Peugeot Ber. 504	1020	12	12	OMM'80	-	50	34,019	5,588	2,515	16.4	450	
65.	Toyota Land Cruiser	1518	-	-	AID'80	-	80	-	-	-	-	-	2
66.	Jeep Pick up	1114	-	-	AID'81	-	80	-	-	-	-	-	3
TOTAL		5-2	35	27	-	-	370	60,497	12,415	5,586	-	-	
TOTAL GEN.		29-2	275	221	-	7,100	2,200	520,177	138,089	59,251	26.5	429.1	Voir 1
dont,				80%						58,020		420.2	Ajusté
VEHICULES DIESEL		5	59	41	-	-	-	69,853	31,261	11,308 10,077	44.7	361.2 322.3	Voir 1 Ajusté
VEHICULES ESSENCE		24-2	216	180	-	-	-	450,324	106,828	47,943	23.7	448.8	

Notes: 1979 - 1981 Dies 88/123 71.5%
Ess 688/864 79.6%

1 Apparément s'est trompé en utilisant le prix unitaire de l'essence. Les valeurs ajustés sont indiqués áu dé sus.

2 Au compte de la Recherche jusqu'au début 1982

3 Au compte de Tony Johnson - SAFGRAD Jusqu'au début 1982

ANNEXE V-6

COUT ET DEPENSES DE FONCTIONNEMENT DES VEHICULES

ANNEE 1982-EN MILLIERS DE FM

NO. DE REF. / MARQUE ET MODELE	NOMBRE ET IMMAT. RM	DISPON. MOIS	ORIGINE OU COUT D'ACHAT	ASSU-RANCE	VIGNETTE	PARCOURS KM.	CARBUR. LITRES	VALEUR CARB.	CONSOM. L/100 KM	VALEUR UNITAIRE FM/L	OBS.
30. Hino Cam. KB212 D	0573	12	AID'78	-	120						Diésel
31. Hino Cam. KB212 D	0574	12	AID'78	-	120						Diésel
34. IH Scout Pick-up	0605	12	AID'78	-	80						
39. IH Cam. à Grain	0653	4	AID'78	-	120						
40. IH Cam. à Grain	0654	6	AID'78	-	120						
44. IH Scout Sta. Wag	0984	6	AID'80	-	80						
47. IH Scout Sta. Wag	0984	5	AID'80	-	80						
48. Land Rover Car 109	0660	12	AID'78	-	50						
49. Land Rover Car 504	0661	7	AID'78	-	50						
50. Peu. Brk. 504	0726	12	AID'79	-	50						
52. Peu. Famil. 504	0728	10	AID'79	-	50						
53. Land Rover Bach. 109	0768	12	AID'79	-	50						
54. Land Rov.Bach.109	0769	12	AID'79	-	50						
55. Toyota Land Cruiser	0745	12	AID'79	-	80						
56. Toyota Land Cruiser	0746	12	AID'79	-	80						
57. Renault 12	0750	3	OMM'79	-	50						
58. Renault 12	0751	12	OMM'79	-	50						
60. Toyota Corolla Brk.	8561	2	AID'79	-	50						
TOT.	18	163	-	-	1,330						

ANNEXE V-6

COUT ET DEPENSES DE FONCTIONNEMENT DES VEHICULES

ANNEE 1982 - EN MILLIERS DE FM

NO. DE REF. / MARQUE ET MODELE	NOMBRE ET IMMAT. RM	DISPON. MOIS	ORIGINE OU COUT D'ACHAT	ASSU-RANCE	VIGNETTE	PARCOURS KM.	CARBUR. LITRES	VALEUR CARB.	CONSOM. L/100 KM	VALEUR UNITAIRE FM/L	OBS.
61. I.H. Scout Pick-upD	1081	4	AID'80	-	80						Diésel
62. I.H. Scout Pick-upD	1082	12	AID'80	-	80						Diésel
64. Peug, Berl. 504	1020	9	OMM'80	-	50						
65. Toyota Land Cruiser [1]	1518	12	AID'80	-	80						
66. Jeep Pick up [1]	1114	12	AID'81	-	80						
TOT	5	49	-	-	370						
TOT GEN.	23	212	-	1,120	1,700						
DONT:											
Véhicules à Essence	18	172	-	-	-						
Véhicules Diesel	4	40									

ANNEXE V-7

CONSOMMATIONS MOYENNES DES VÉHICULES

MARQUE ET MODELE	CONSOMMATION LITRES PAR 100 KM.			
	SUR ROUTE GOUDROUNEE	SUR PISTE	SOURCE[1]	SOURCE ORM[2]
Renault R-4	7	-	OMM	7
Peugeot Bachée 404	14	-	CMDT	14
Peugeot Familiale 404	14	-	OMM	11
Peugeot Break 504	11	-	CMDT	11
Peugeot Berline 504	10.5	-	CMDT	11
Peugeot Break 304	10	-	OMM	11
Renault R-12	8	-	OMM	9
Toyota Corolla Break	6	-	OMM	-
Land Rover-Tout Modele	-	19	CMDT	20
Toyota Land Cruiser	-	19	OMM	-
Jeep Pick-up	-	25	OMM	-
IH Scout Station Wagon	-	14	OMM	-
IH Scout Pick-up	-	25	OMM	-
Camion Berliet	- Gasoil	40	OMM	40
Camion Hino KB212	- Gasoil	40	OMM	-
Camion IH	- Essence	60	OMM	-

Sources: OMM - Chef de Garage - Amadou Diarra

CMDT - Tableau des Consommations Théoriques fourni au Bureau des Tansports OMM.

ORM - Chef d'Atélier

Notes: 1. CMDT: Campagnie Malienne de Développement Textile (Avant: Campagnie Française de Développement Textile)

2. ORM: Opération Riz Mopti

ANNEXE V-8

EVOLUTION DES PRIX DE CARBURANTS ET LUBRIFIANTS
EN FM PAR LITRE OU PAR BIDON

Désignation	1976 Avant Mars	1976 Mars	1977 Avril	1978 —	1979 Fev.	1979 Nov.	1980 Fev.	1980 Juillet	1981 Avril	1981 Octobre	1982 —
Essence Prix du litre	163	165	180	180	200	250	315	350	450	520	520
Prix moyen année calendrier	--	164.7	176	180	--	207	--	327	--	443	520
Gas-oil Prix du litre	117.60	117.60	130	130	150	185	230	250	325	365	365
Prix moyen année calendrier	--	117.60	127	130	--	154	--	234	--	316	316
Pétrole Prix du litre	156.90										
Prix moyen année calendrier											
Huile à moteur Prix eu bidons de 2 litres			2,050	2,395 (Avril)	--	2,880 (Oct.)	--	3,640	--	3,690 (Sep.)	4,415 (avril)
Prix moyen année calendrier			--	2,308		2,516		3,006	--	3,656	4,233
Liquide à freins Prix du bidon de 1 litre			2,335	2,895 (avril)	--	3,490 (Oct.)	--	4,395 (Nov.)	--	4,460 (Sep.)	5,090 (Avril)
Prix moyen année calendrier			--	2,755	--	3,044	--	3,641	--	4,416	4,933

Sources: OMM/APROV.; Society TOTAL a Mopti; OPER. RIZ MOPTI/APROV.; 29 November 1984.

Notes: Certain prix n'ont pas été acquis, dont pétrole de 1977 à 1982; huile a moteur en 1976 et liquide à freins en 1976.

ANNEXE V-9

CONSOMMATION MENSUELLE DES GROUPES-ELECTROGENES

GROUPE LISTER - MAI 1980

DATE	CONSOM. - L.	MARCHE	ARRET	MARCHE	ARRET	HRS. DE MARCHE PAR JOUR
1	80	8h	14h30	19h	05h	16½h
3	80	8h	14h30	19h	05h	16½h
5	80	8h	14h30	19h	05h	16½h
7	80	8h	14h30	19h	00h	11½h
8	20	8h	14h30	19h	00h	11½h
9	80	8h	14h30	19h	05h	16½h
11	80	8h	14h30	19h	05h	16½h
13	80	8h	14h30	19h	05h	16½h
14	60	8h	14h30	19h	05h	16½h
17	80	8h	14h30	19h	05h	16½h
18	60	8h	14h30	19h	05h	16½h
20	80	8h	14h30	19h	05h	16½h
21	60	8h	14h30	19h	05h	16½h
23	80	8h	14h30	19h	05h	16½h
24	40	8h	14h30	19h	05h	16½h
26	80	8h	14h30	19h	05h	16½h
27	60	8h	14h30	19h	05h	16½h
29	80	8h	14h30	19h	05h	16½h
30	40	8h	14h30	19h	05h	16½h
31	80	8h	14h30	19h	05h	16½h
20 Jours	1,380 L.					320h

GROUPE CATERPILLAR - MAI 1981

DATE	CONSOM. - L.	MARCHE	ARRET	MARCHE	ARRET	HRS. DE MARCHE PAR JOUR
1	200	7h30	14h30	19h	05h	17h
2	200	7h30	14h30.	19h	05h	17h
3	150	7h30	14h30	19h	05h	17h
4	100	7h30	14h30	19h	03h	15h
5	200	7h30	14h30	19h	05h	17h
6	200	7h30	14h30	19h	05h	17h
9	180	7h30	14h30	19h	05h	17h
10	150	7h30	14h30	19h	05h	17h
11	200	7h30	14h30	19h	05h	17h
12	120	7h30	14h30	19h	05h	17h
15	180	7h30	14h30	19h	05h	17h
16	200	7h30	14h30	19h	05h	17h
17	200	7h30	14h30	19h	05h	17h
20	200	7h30	14h30	19h	05h	17h
21	200	7h30	14h30	19h	05h	17h
22	160	7h30	14h30	19h	05h	17h
23	200	7h30	14h30	19h	05h	17h
24	200	7h30	14h30	19h	05h	17h
26	180	7h30	14h30	19h	05h	17h
27	200	7h30	14h30	19h	05h	17h
28	200	7h30	14h30	19h	05h	17h
31	200	7h30	14h30	19h	05h	17h
22 Jours	4,020 - L.	-	-	-	-	372h

Source: OMM- Approv./Atélier

ANNEX E:

SUPPLEMENTARY TABLES ON WELL DATA

ANNEX E

WELL DIGGING PROGRAM

WELL DATA

N° de Puit 1

Lieu: Sevare (Siege ONM)

Arrondissement: Central

Cercle: Mopti

Region: Mopti

Date de forage: 14 au 16/2/1980

Entrepreneur: Mali Aqua Viva

Date de visit: 2.11.84

Par: John Barton

Observations: Well is sealed with metal cap. Pump not working because of a lack of electricity.

SPECIFICATIONS DE PUIT

Profondeur totale: 51,00m
Debit: $3m^3$/ heure
Diametre de forage: 200mm
Crepine: 15 m de 160mm Ø
Pompe: Electrict submergeable
Coute de puit: 4.225.000 FM

Niveau statique: 16,80m
Rabattlement: 5,6m
Tube plein: 36m de 160 mm Ø

N° de Puit 2

Lieu: Bai

Arrondissement: Bai

Cercle: Bankass

Region: Mopti

Date de forage: 12 au 14/3/1980

Entrepreneur: Mali Aqua-Viva

Date de visit:

Par:

Observations:

SPECIFICATIONS DE PUIT

Profondeur totale: 102m
Debit: $0,2m^3$/ heure
Diametre de forage: 140mm
Crepine: 3m de 140 mm Ø
Pompe: neant
Coute de puit: 3.876.000 FM

Niveau statique: 32,49m
Rabattlement: neant
Tube plein: 34,5m de 140 mm Ø

N° de Puit 3

Lieu: Bai

Arrondissement: Bai

Cercle: Bankass

Region: Mopti

Date de forage: 14 au 17/3/1980

Entrepeneur: Mali Aqua Viva

Date de visit:

Par:

Observations:

SPECIFICATIONS DE PUIT

Profondeur totale: 68m
Debit: neant
Diametre de forage: 180mm
Crepine: neant
Pompe: neant
Coute de puit: 2.584.000 FM

Niveau statique: neant
Rabattlement: neant
Tube plein: neant

N° de Puit 4

Lieu: Bankass

Arrondissement:

Cercle: Bankass

Region: Mopti

Date de forage:

Entrepreneur: EGEBAT

Date de visit: 8.11.84

Par: John Barton

Observations: Pump not working, well not part of program

SPECIFICATIONS DE PUIT

Profondeur totale:
Debit:
Diametre de forage:
Crepine:
Pompe: photovolatic, Guinard
Coute de puit: 2.630.820 FM, Civil works at well

Niveau statique:
Rabattlement:
Tube plein:

N° de Puit 5

Lieu: Diabel

Arrondissement:

Cercle: Bankass

Region: Mopti

Date de reception: 8 July 1980

Entrepreneur: Operation Puits

Date de visit:

par:

Observations:

SPECIFICATIONS DE PUIT

Profondeur totale: 24,65m
Diametre de puit: 1,8m
Marrgelle: 0,55 m
Abreuvoir: 2

Niveau statique: 23m
Pompe: neant
Dalle: 2,55m

COUTE DE PUIT

	Qte	P.U.	P.T.
Extraction materiaux	15	1149	17235
Margelle	1	47302	47302
Ancrage de surface	1	67029	67029
Ancrage intermediaire et de pieds	3	28252	84756
Cuvelage BA terrain tendre 0 a 20	6	36902	221412
Cuvelage BA terrain dur sans eau	-	-	-
0 a 20m	14	90570	1267980
20 a 30m	0	109064	0
30 a 40m	0	133106	0
40 a 50m	0	164364	0
Terrain dur non cuvelage avec eau	-	-	-
30 a 40m	5	156555	782775
40 a 50m	o	203221	0
Prefabrication buse 1,40 x 0.80	3	27339	82017
Abreuvoir rectangulaire	2	42752	85504
Dallage 2,55m Ø	1	178860	178860

	Total	2834870
22%	Charges Secteurs Direction Sans amortissement	623671
40%	Transport	1133948
	Total General	4592489 FM

(83)

N° de Puit 6

Lieu: Kolokan Peulh

Arrondissement:

Cercle: Bankass

Region: Mopti

Date de reception: 8 Sept 1980

Entrepreneur: Operation Puits

Date de visit:

par:

Observations:

SPECIFICATIONS DE PUIT

Profondeur totale: 45,70m
Diametre de puit: 1,80m
Marrgelle:
Abreuvoir: 1

Niveau statique: 43,05m
Pompe: neant
Dalle: 2,80m

COUTE DE PUIT

	Ote	P.U.	P.T.
Extraction materiaux	27	1149	31023
Margelle	1	47302	47302
Ancrage de surface	1	67029	67029
Ancrage intermediaire et de preds	5	28252	141260
Cuvelage BA terrain tendre 0 a 20	6	36902	221412
Cuvelage BA terrain dur sans eau	-	-	-
0 - 20m	14	90570	12679800
20 a 30m	10	109064	1090640
30 a 40m	10	133106	1331060
40 a 50m	3	164364	493092
Terrain dur non cuvelage avec eau	-	-	-
30 a 40m	0	156555	0
40 a 50m	3	203221	609663
Prefabrication buse 1,40 x0,80	4	27339	109356
Abreuvoir rectangulaire	2	42752	85504
Dallage 2.8m Ø	1	206,485	206,485

	Total	5701806
22%	Charges Secteurs Direction Sans amortissement	1254397
40%	Transport	2280722
	Total General	9236925 FM

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N° de Puit 7

Lieu: Korassagou

Arrondissement: Bai

Cercle: Bankass

Region: Mopti

Date de forage: 18 au 20/3/1980

Entrepreneur: Mali Aqua-Viva

Date de visit:

Par:

Observations:

SPECIFICATIONS DE PUIT

Profondeur totale: 86m
Debit: 4m^3/ heure
Diametre de forage: 7 5/8"
Crepine: neant
Pompe: Robbins and Myers
Coute de puit: 6.450.000 FM

Niveau statique: 52,07m
Rabattlement: 2,50m
Tube plein: 30,5 de 140mm Ø

N° de Puit 8

Lieu: Souhe

Arrondissement: Ouenkoro

Cercle: Bankass

Region: Mopti

Date de forage: 22 au 24/3/1980

Entrepreneur: Mali Aqua-Viva

Date de visit:

Par:

Observations:

SPECIFICATIONS DE PUIT

Profondeur totale: 67m
Debit: 8m^3/heure
Diametre de forage: 7 5/8"
Crepine: neant
Pompe: Robbins and Myers
Coute de puit: 5.025.000 FM

Niveau statique: 30,33m
Rabattlement: 1,00m
Tube plein: 38,5m de 160mm Ø

N° de Puit 9

Lieu: Seque

Arrondissement: Seque

Cercle: Bankass

Region: Mopti

Date de forage: 25 au 27/3/1980

Entrepeneur: Mali Aqua Viva

Date de visit:

Par:

Observations:

SPECIFICATIONS DE PUIT

Profondeur totale: 72m
Debit: 200 litres/heure
Diametre de forage: 7 5/8"
Crepine: neant
Pompe: neant
Coute de puit: 2.736.000 FM

Niveau statique:
Rabattlement: neant
Tube plein: 42,5m de 160mm Ø

N° de Puit 10

Lieu: Seque

Arrondissement: Seque

Cercle: Bankass

Region: Mopti

Date de forage: 28 au 30/3/1980

Entrepreneur: Mali Aqua-Viva

Date de visit:

Par:

Observations:

SPECIFICATIONS DE PUIT

Profondeur totale: 45m
Debit: neant
Diametre de forage: 7 5/8"
Crepine: neant
Pompe: neant
Coute de puit: 1.710.000 FM

Niveau statique:
Rabattlement: neant
Tube plein: neant

N° de Puit 11

Lieu: Kara Kinda

Arrondissement:

Cercle: Koro

Region: Mopti

Date de reception: 4 July 1980

Entrepreneur: Operation Puits

Date de visit:

par:

Observations:

SPECIFICATIONS DE PUIT

Profondeur totale: 51 10m
Diametre de puit: 1,8m
Marrgelle: 0,55 m
Abreuvoir: 2

Niveau statique: 46,80m
Pompe:
Dalle: 1,50m

COUTE DE PUIT

	Qte	P.U.	P.T.
Extraction materiaux	30	1149	34470
Margelle	1	47302	47302
Ancrage de surface	1	67029	67029
Ancrage intermediaire et de prids	5	28252	141260
Cuvelage BA terrain tendre 0 a 20	6	36902	221412
Cuvelage BA terrain dur sans eau	-	-	-
0 a 20m	14	90570	1267980
20 a 30m	10	109064	1090640
30 a 40m	10	133106	1331060
40 a 50m	7	164364	1150548
Terrain dur non cuvelage avec eau	-	-	-
30 a 40m	0	156555	0
40 a 50m	4.4	203221	894172
Prefabrication buse 1,40 x 0,80	6	27339	164034
Abreuvoir rectangulaire	2	42752	85504
Dallage 1,50m Ø	1	84844	84844

	Total	6580255
22%	Charges Secteurs Direction Sans amortissement	1447656
40%	Transport	2632102
	Total General	10660013 FM

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N° de Puit 12

Lieu: Diankabou

Arrondissement:

Cercle: Koro

Region: Mopti

Date de reception: 4 Sept 1980

Entrepreneur: Operation Puits

Date de visit:

par:

Observations:

SPECIFICATIONS DE PUIT

Profondeur totale: 9,0m
Diametre de puit: 1,80m
Marrgelle: 0,40m
Abreuvoir: 2

Niveau statique: 4,0m
Pompe:
Dalle: 2,30m

COUTE DE PUIT

	Qte	P.U.	P.T.
Extraction materiaux	5	1149	5745
Margelle	1	47302	47302
Ancrage de surface	1	67029	67029
Ancrage intermediaire et de preds	2	28252	56504
Cuvelage BA terrain tendre 0 a 20	1	36902	36902
Cuvelage BA terrain dur sans eau	-	-	-
0 a 20m	3	90570	271710
20 a 30m	0	109064	0
30 a 40m	0	133106	0
40 a 50m	0	164364	0
Terrain dur non cuvelage avec eau	-	-	-
30 a 40m	5	156555	782775
40 a 50m	0	203221	0
Prefabrication buse 1,40 x 0.80	7	27339	191373
Abreuvoir rectangulaire	1	42752	42752
Dallage 2.3m Ø	1	153636	153636

	Total	1655728
22%	Charges Secteurs Direction Sans amortissement	364260
40%	Transport	662291
	Total General	2682279 FM

N° de Puit 13

Lieu: Dounoupa

Arrondissement: Toroli

Cercle: Koro

Region: Mopti

Date de forage: 24 au 26/2/1980

Entrepeneur: Mali Aqua Viva

Date de visit:

Par:

Observations:

SPECIFICATIONS DE PUIT

Profondeur totale: 84m
Debit: neant
Diametre de forage: 200mm
Crepine: neant
Pompe: neant
Coute de puit: 3.192.000 FM

Niveau statique: neant
Rabattlement: neant
Tube plein: 20,6m de 160mm Ø

N° de Puit 14

Lieu: Kassanwa

Arrondissement: Dinangourou

Cercle: Koro

Region: Mopti

Date de forage: 7 au 8/3/1980

Entrepeneur: Mali Aqua Viva

Date de visit:

Par:

Observations:

SPECIFICATIONS DE PUIT

Profondeur totale: 90m
Debit: neant
Diametre de forage: 200mm
Crepine: neant
Pompe: neant
Coute de puit: 3.420.000 FM

Niveau statique: neant
Rabattlement: neant
Tube plein: 20,20m de 140mm Ø

N° de Puit 15

Lieu: Kassanwa

Arrondissement: Dinangourou

Cercle: Koro

Region: Mopti

Date de forage: 9 au 10/3/1980

Entrepeneur: Mali Aqua-Viva

Date de visit:

Par:

Observations:

SPECIFICATIONS DE PUIT

Profondeur totale: 65,5m
Debit: neant
Diametre de forage: 200mm
Crepine: neant
Pompe: neant
Coute de puit: 2.489.000 FM

Niveau statique: neant
Rabattlement: neant
Tube plein: neant

N° de Puit 16

Lieu: P.A.R. Koporo-Pen

Arrondissement: Koporo - Na

Cercle: Koro

Region: Mopti

Date de forage: 22 au 23/2/1980

Entrepeneur: Mali Aqua Viva

Date de visit:

Par:

Observations:

SPECIFICATIONS DE PUIT

Profondeur totale: 49,5m
Debit: 12m^{3}n
Diametre de forage: 200mm
Crepine: 15m de 160mm Ø
Pompe: neant
Coute de puit: 3.712.500 FM

Niveau statique: 36,93m
Rabattlement: 0,50
Tube plein: 35,5m de 160mm Ø

N° de Puit 17

Lieu: Sobangouma

Arrondissement: Dioungani

Cercle: Koro

Region: Mopti

Date de forage: 27 au 28/2/1980

Entrepreneur: Mali Aqua Viva

Date de visit:

Par:

Observations:

SPECIFICATIONS DE PUIT

Profondeur totale: 93,5m
Debit: neant
Diametre de forage: 200mm
Crepine: neant
Pompe: neant
Coute de puit: 3.553.000 FM

Niveau statique: neant
Rabattlement: neant
Tube plein: 1m de 160mm Ø

N° de Puit 18

Lieu: Sobangouma

Arrondissement: Dioungani

Cercle: Koro

Region: Mopti

Date de forage: 4 au 6/3/1980

Entrepreneur: Mali Aqua Viva

Date de visit:

Par:

Observations:

SPECIFICATIONS DE PUIT

Profondeur totale: 75m
Debit: neant
Diametre de forage: 200mm
Crepine: neant
Pompe: neant
Coute de puit: 2.850.000 FM

Niveau statique: neant
Rabattlement: neant
Tube plein: neant

N° de Puit 19

Lieu: Dourou

Arrondissement: Dourou

Cercle: Bandiagara

Region: Mopti

Date de forage: 19 au 21/2/1980

Entrepreneur: Mali Aqua-Viva

Date de visit: 27.11.84

Par: John Barton

Observations: uncapped, dry well near community center

SPECIFICATIONS DE PUIT

Profondeur totale: 56,5m
Debit: neant
Diametre de forage: 200mm
Crepine: neant
Pompe: neant
Coute de puit: 2.147.000 FM

Niveau statique: neant
Rabattlement: neant
Tube plein: 0,80m de 140mm Ø

N° de Puit 20

Lieu: Dourou

Arrondissement: Dourou

Cercle: Bandiagara

Region: Mopti

Date de forage: Ier au 2/4/1980

Entrepeneur: Mali Aqua Viva

Date de visit: 27.11.84

Par: John Barton

Observations: The villagers have dug a 8m deep well beside the drilled well and connected the two so that the drilled well supplies water to the hand dug well.

SPECIFICATIONS DE PUIT

Profondeur totale: 50m
Debit: $3m^3$/heure
Diametre de forage: 115mm
Crepine: neant
Pompe: Robbins and Myers hand pump broken within first month. Pump is now located in storage at the Bandiagara office.
Coute de puit: 3.750.000 FM

Niveau statique: 7,45m
Rabattlement:
Tube plein: 8,5m de 160 mm Ø

2232D

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