

**PD-AAH-613**

391-0424

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**MALARIA CONTROL PROJECT, No. 391-0424**

**TERMINAL EVALUATION**

**Report of the**

**Malaria External Review/Terminal Evaluation Team**

**January 9 - 29, 1981**

**Islamabad, Pakistan**

PROJECT EVALUATION SUMMARY (PES) - PART I

1. PROJECT TITLE  Malaria Control Project			2. PROJECT NUMBER 391-0424	3. MISSION/AID/W OFFICE USAID/Pakistan
6. KEY PROJECT IMPLEMENTATION DATES			4. EVALUATION NUMBER (Enter the number maintained by the reporting unit e.g., Country or AID/W Administrative Code, Fiscal Year, Serial No. beginning with No. 1 each FY) <u>391-81-1</u> (Terminal Evaluation) <input checked="" type="checkbox"/> REGULAR EVALUATION / <input type="checkbox"/> SPECIAL EVALUATION	
A. First PRO-AG or Equivalent FY <u>76</u>	B. Final Obligation Expected FY <u>79</u>	C. Final Input Delivery FY <u>79</u>	7. PERIOD COVERED BY EVALUATION From (month/yr.) <u>October 1976</u> To (month/yr.) <u>December 1980</u> Date of Evaluation Review <u>January 1981</u>	
6. ESTIMATED PROJECT FUNDING (000's)				
A. Total \$ <u>78,400</u>				
B. U.S. \$ <u>42,800</u>				

8. ACTION DECISIONS APPROVED BY MISSION OR AID/W OFFICE DIRECTOR

A. List decisions and/or unresolved issues; cite those items needing further study. (NOTE: Mission decisions which anticipate AID/W or regional office action should specify type of document, e.g., program, SPAR, PIO, which will present detailed request.)	B. NAME OF OFFICER RESPONSIBLE FOR ACTION	C. DATE ACTION TO BE COMPLETED
<u>TERMINAL EVALUATION</u>	L. A. Dean	6/81
A residual amount of less than \$60,000 remains in the \$24.0 million loan for this project and needs to be programmed (i.e., de-obligated, etc.).*		
* The Project Assistance Completion Date (PACD) for this Project is June 30, 1981.		

9. INVENTORY OF DOCUMENTS TO BE REVISED PER ABOVE DECISIONS

<input type="checkbox"/> Project Paper	<input type="checkbox"/> Implementation Plan e.g., CPI Network	<input type="checkbox"/> Other (Specify) _____
<input type="checkbox"/> Financial Plan	<input type="checkbox"/> PIO/T	_____
<input type="checkbox"/> Logical Framework	<input type="checkbox"/> PIO/C	<input type="checkbox"/> Other (Specify) _____
<input type="checkbox"/> Project Agreement	<input type="checkbox"/> PIO/P	_____

10. ALTERNATIVE DECISIONS ON FUTURE OF PROJECT

A.  Continue Project Without Change

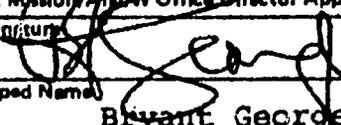
B.  Change Project Design and/or  Change Implementation Plan

C.  Discontinue Project

11. PROJECT OFFICER AND HOST COUNTRY OR OTHER BANKING PARTICIPANTS AS APPROPRIATE (Name and Title)

Leslie A. Dean, Chief, Office of Program, USAID  
Dr. S.M. Mujtaba, Director, Malaria Control Project  
Larry Cowper, Regional Malaria Advisor, USAID

12. Mission/AID/W Office Director Approval

Signature: 

Typed Name: Bryant George

Date: January 29, 1981

**Malaria Control Project**  
**Terminal Evaluation (cont.)**

**13. Summary**

The Project Loan Agreement for the Malaria Control Project was signed on October 10, 1975 between the Government of Pakistan (GOP) and the United States. This agreement provided for \$20.0 million to assist the GOP in the procurement of required supplies and equipment (mainly insecticides, spraying equipment). An additional \$4.0 million was obligated for malaria control activities on December 3, 1978. These dollar funds were to be provided on a reimbursement basis and limited to 60% of the cost of external source commodities. A rupee grant of \$18.8 million equivalent was also provided under PL 480, Section 104(f) to meet approximately 55% of the local costs of the project over a five year period. A financial presentation on the project as of December 31, 1980 is attached as Annex 1 and 1-A.

This project was specifically aimed at assisting the Government of Pakistan in reducing the incidence of malaria to a level where this disease is no longer a major problem in Pakistan's health situation. For Pakistan, a satisfactory level of malaria incidence was considered to be no more than 500 cases per million population (Capital Assistance Paper, page ii). This project is a part of a long term AID effort to assist Pakistan with its malaria control efforts since 1963. Between 1963-1970, AID provided over \$28 million in grants and loans to implement this effort. During this period the malaria incidence in Pakistan dropped from an estimated 7.0 million cases in 1961 to only 9,500 cases in 1967. Approximately 75% of Pakistan's 82 million population is at risk to malaria. AID malaria control assistance to Pakistan for anti-malaria activities was terminated by 1970, but due to a variety of administrative, operational and technical problems malaria resurged in Pakistan to an estimated 10 million cases of malaria by 1974. At the request of the GOP, AID planned and approved project assistance designed to overcome the massive epidemic and to bring the incidence of the disease to a manageable level. The resulting malaria control program activities which began on a

country-wide basis in 1976 were based on (1) residual insecticide spraying of dwellings in rural areas, (2) surveillance activities, and (3) use of anti-malaria drugs. The program has made remarkable gains since 1976 in spite of many difficulties including increasing levels of insecticide resistance, procurement problems and sharply increasing costs of insecticides. The impact of the program can be seen in the dramatic reduction of the disease as the total positive malaria cases reported in 1979 was 12,304. A reduction in Slide Positive Rates (SPR) from 1973 (epidemic period) of 14.9% to 0.45% in 1979 was accomplished. The goal of obtaining a case load of 500 cases of malaria per million population was fully achieved on a national basis during the life of the project.

The Government of Pakistan, World Health Organization, U.N. Children's Fund and AID have jointly worked together over the project period. In both 1979 and 1980, the Government of Japan provided an annual total of 600 million yen (equivalent to \$2.78 million) for urban malaria control which was very helpful in activating this operational activity.

It will be necessary for the Government of Pakistan to consider malaria control as a long term health program which will require staff, materials and financial support for many years if the gains in health improvement which were made at a high manpower and financial cost are to be maintained.

#### 14. Evaluation Methodology

The evaluation methodology used in this terminal evaluation followed the general pattern used in the annual external in-depth assessments in the 1976-79 period. This process included (1) developing clear terms of reference; (2) organizing a joint team of GOP/WHO/AID malaria specialists to review the program both in the field and in headquarters; and (3) preparing and presenting a report to the GOP health authorities on the progress and problem of the program and providing necessary recommendations on future actions.

The 1981 External Review Team (ERT) combined both an in-depth program review of the annual progress of the program with a terminal evaluation covering the period

of 1976-1980. This task was facilitated by a study of the ERT reports from 1976 to 1979 and studying GOP documents used in meeting the conditions precedent of the AID Development Loan.

Special attention was also given to the assignment reports, field observations and studies made by the World Health Organization during the period under review.

#### 15. External Factors

Pakistan has experienced considerable economic development over the last few years and numerous irrigation, settlement and road projects have been achieved during the life of this project. Such projects have also increased the malariogenic conditions of the country. For example, it is estimated there are over 18 million acres of water-logged land in Pakistan which greatly increases the mosquito breeding potential of the country. In addition, the normal annual flow of over 2.0 million nomadic people between Pakistan and the neighboring countries or within Pakistan has further been increased by the arrival of people from Afghanistan due to political disturbances. A number of these groups arrive from malarious areas in Afghanistan and their presence has increased the workload of the Malaria Control Program. It is estimated that over 1.3 million refugees have arrived in Pakistan from Afghanistan up through December 1980 and require malaria control services. In addition, rapid urbanization in a number of towns has increased the urban malaria problem. Karachi is probably among the most malarious cities in the world today with an increasing amount of environmental conditions which are conducive to the breeding of the malaria vector mosquito, An. stephensi.

The technical analysis in Capital Assistance Paper (CAP) correctly pointed out the problem of insecticide resistance and stated that this factor will require continuous attention over the life of the project. During the last five years widespread DDT and BHC resistance has occurred and the recommended use of malathion as an alternative insecticide has been fully justified as its impact on the malaria problem has been nothing less than spectacular. However, persistence of transmission in some areas of the country may be attributed to the continued use of locally

produced and procured BHC and DDT long after resistance to these insecticides had been documented and recommendations made for their withdrawal from the malaria operational field effort. If malathion had been applied as proposed in the Plan of Operations, as well as more correct timing of the spraying, the end results might have been even better than they are at present in many areas. Unfortunately, malathion may now be reaching or approaching its useful life span in the Pakistan malaria operations due to recent evidence of malathion resistance in the vector mosquitoes in some locations in Punjab.

The presence of chloroquine resistance strains of malaria has not been proven in Pakistan although there are reports of such cases occurring. The program has been able to utilize chloroquine for treatment of malaria throughout the project period as projected in the Extended Plan of Operations and the Capital Assistance Paper.

The GOP continues to assign high priority to malaria control as evidenced by its allocations to the health sector. The GOP allocation to Federal malaria control in fiscal year 1979/80 was Rs.63.0 million which represented approximately 20% of the Federal health budget allocation. Earlier in the program there were delays in payment of staff from time to time due to administrative reasons, i.e., as in 1978 in the Sind Province. Also the low level of fixed field allowances for field staff is not conducive to a high quality operation and reduces required supervision, especially in the Punjab Province. However, the program has managed to move forward and meet its stated objectives in providing malaria control services.

There has been a lack of malaria control staff development at the Federal level in spite of numerous recommendations to increase both the management and technical staff. As a result of inadequate numbers of trained staff, the Directorate of Malaria has had to modify some of its planned activities which would have improved its services over the project period. However, one of the specific objectives of the Plan of Operation in the management field was accomplished by providing regular Federal/Provincial Government status to Malaria Control Program (MCP) personnel who previously were only considered temporary employees. This change of status for the employees has been beneficial and helped morale.

The integration of the malaria control service into the general health service has progressed in a variable fashion in the four provinces. The sudden integration of the malaria service in the Punjab has lead to a number of management problems which will require long and careful adjustment in order to maintain the malaria gains which have made over the last few years.

## 16. Inputs

The arrival of USAID commodities was delayed on several occasions primarily due to the long administrative time-frame required by the GOP to process its procurement needs. The delay in malathion reaching Pakistan resulted in the late starting of the spray season in some areas. Shortages of rail wagons for the malathion and delays in document clearance again hindered the transportation of the insecticide after it had reached the entry port during some years.

The total cost of malathion, 50%, water dispersable powder (wdp) and other insecticides shipped to Pakistan under this project amounted to over \$23.0 million. All insecticide furnished by AID met AID and WHO specifications for a quality product. Other supplies furnished to this project were spray operation and ULV equipment and limited larviciding materials. (See Annex 2.)

From 1976 until November 1979 one direct hire resident malaria advisor was assigned to the project to assist the GOP to carry out this activity. In addition, the USAID Regional Malaria Advisor spent over 8 months in TDY travel to Pakistan during the formation of the project and to assist in its monitoring and evaluation during the project period. During each year's external assessment, AID furnished two or more malaria specialists which amounts to approximately eight man months of technical inputs over the life of the project. The USAID pesticide monitoring of the program during the spray operations amounted to an additional five months of technical assistance in the period 1977-1980. USAID also supported a five man Center for Disease Control (CDC) team to carry out malathion intoxication studies in 1976; a trainer in safe handling of insecticides; and a technician from the Environmental Protection Agency (EPA) to advise on disposal of toxic malathion.

AID has actively supported malaria research and has approved a grant of Rs. 15.6 million from PL 480 sources to Pakistan Medical Research Center for this purpose in addition to the grant rupees authorized in the loan. This grant will provide a much needed support for malaria research and it may be useful to expand this support in the future, either through a similar grant or by an AID central funding mechanism.

During the first three years of the project, WHO provided 2 to 3 foreign-source technical advisors to the program, but this number was reduced to one advisor during 1980. WHO also provides three local hire operational officers at the Provincial level to assist in the supervision of the program and one malariologist to assist the GOP in the integration process. In addition, WHO provided a limited amount of laboratory supplies, short-term overseas fellowships to the program, and 2-3 malaria specialists for each of the annual External Reviews of the MCP.

#### 17. Outputs

The program outputs for the project are detailed in the Development Loan Agreement signed in October of 1975 in Article IV (page 16). A summary is provided to present the outputs obtained during the project period.

<u>Item</u>	<u>Summary Accomplishment</u>
1. GOP shall carry out and cause the Provincial government to carry out the Malaria Program with sufficient manpower and funding so that both urban and rural malaria will be effectively controlled in Pakistan.	GOP support has been provided to create and support a malaria control effort adequate to reduce the case load below 5 cases per 10,000 population. Urban malaria control activities have been initiated, but require much more development.
2. Provide Annual Plans of Action.	Plans of Action were provided by the provinces which were in accord with the approved Plan of Operations.

<u>Item</u>	<u>Summary Accomplishment</u>
3. Insecticide spray operation shall be carried out with sufficient resources throughout Pakistan so that within the next five years malaria will cease to be a major health problem.	In spite of late and incomplete spraying operations in some areas over the Project period, the 1980 epidemiological data indicates an API 0.4 (400 cases/million population). (API - Annual Parasite Incidence.)
4. <u>Surveillance Operations</u>  GOP agrees that necessary action will be taken to assure the effective and successful completion of malaria surveillance operations in all provinces.	(a) Passive Case Detection (PCD) is not functioning as expected, although with the assignment of MCP personnel to health institutions the number of slides has increased.  (b) Indicator locations for entomological evaluation were established.  (c) Voluntary Collaboration system was established in NWFP on test basis in 1978.  (d) Analysis of surveillance data was sometimes delayed which resulted in not responding rapidly to focal problem areas.
5. <u>Research Activities</u>  GOP shall assure that research activities are effectively carried out. Studies shall conclude insecticide susceptibility, vector investigations in problem areas, role of secondary vectors, impact of malaria on economic development.	(a) In-vivo studies have been done on the sensitivity of <u>P. falciparum</u> in a number of locations.  (b) Over a four year period, trials of fenitrothion were carried out in some sectors of Lahore District. In 1980, residual spraying trials of Propoxur and Actellic were done in the Sind and Punjab. In addition, larviciding trials in the Sind and Punjab were carried out in 1979-80 using Actellic and Dursban.

Item

Summary Accomplishment

6. Training

GOP to provide adequate Federal and Provincial funding for in-service and refresher training. Malaria Training Center to continue to provide refresher and regular training.

(c) Insecticide susceptibility activities carried out.

(d) Central Research Unit remains to be established.

(e) \$1.6 million (equivalent) for malaria research was provided by AID to the Pakistan Medical Research Center (PMRC) in Lahore.

(a) Lahore Malaria Training Center continues to require more assistance and support.

(b) In-service and regular training courses were held both in the provinces as well as the National Training Center.

7. Health Education

GOP to undertake efforts in the field of health education to involve the general public in the malaria program and to obtain their cooperation in carrying out spraying and surveillance activities.

(a) There is increased use of mass media, but much more can and should be done. Talks were given on local television and radio on malaria and the malaria program.

8. Urban Malaria

GOP will assure that anti-malaria and anti-mosquito measures in urban areas are carried out by the local government bodies.

(a) Provincial MCP have set up urban malaria cells.

(b) Adequate funds are available for urban malaria control in most places.

(c) Federal Government has supplied insecticides, larvicides, transport and spraying equipment to municipalities.

<u>Item</u>	<u>Summary Accomplishment</u>
	(d) The Government of Japan has provided 600 million yen for urban malaria control activities during each year of 1979 and 1980.
9. <u>Integration of Malaria Activities into the Basic Health Services</u>	(a) Administrative integration has been carried out in all four provinces. Functional integration has been completed in the Punjab while the other three provinces are at various stages of this operational process.
The GOP agrees to integrate malaria control units in the Provincial health services.	
10. <u>Equipment Maintenance</u>	(a) Vehicle workshops have been set up and are operating in all four provinces.
The GOP will institute and carry out effective control, repair and maintenance system for vehicles, equipment and other supplies.	(b) Each District has recruited, trained and supports a pump repair mechanic.
11. <u>Technical Advisors</u>	(a) No action was taken on these three positions. WHO did provide a sanitary engineer for four years to organize a urban malaria program.
The GOP will employ advisors utilizing loan funds or non-AID resources for such technical areas as (1) Urban Vector Control, (2) Public Health Administration and (3) Malaria Research.	
12. <u>Review Meeting</u>	(a) Annual evaluations of program were held in 1976, 1977, 1978, 1979, 1981.
Review meetings to be held monthly, quarterly and semi-annually which are attended by national and provincial organizations and by representatives of AID and WHO.	(b) Monthly meetings were considered too frequent and agreement was reached to cancel this requirement shortly after the beginning of the Project.

- | <u>Item</u>  | <u>Summary Accomplishment</u>   |
|--|---|
| <p>13. <u>Compliance with Plan of Operation</u></p> <p>The approved Plan of Operation will be followed in carrying out the program and conditions of the AID loan.</p> | <p>(a) The Plan of Operation was used as a guide to program activities throughout the 1976-1980 period.</p>   |
| <p>14. <u>Safety Monitoring</u></p> <p>The safe application and use of malathion or other O.P. (organo-phosphate) compounds was agreed.</p>                            | <p>(a) The 1976 episode of intoxication highlighted the need for additional monitoring efforts. The 1977, 1978, 1979 and 1980 spray operations were carried out successfully in regards to over-all safety.</p> <p>(b) Protective equipment, supervision and spraymen cholinesterase testing vastly improved.</p> <p>(c) AID provided contract and direct hire malaria specialists to monitor the operations in 1978, 1979, 1980.</p> |

15. Epidemiological Benchmark
- The project should reduce the incidence of malaria to 5 cases per 10,000 population (API 0.5)

(a) The results for the period are as follows:

<u>Year</u>	<u>Total Positives</u>	<u>Total P.F. *</u>	<u>SPR **</u>	
1973	599,177	72,670	14.09	
1974	303,936	36,619	9.82	
1975	238,315	93,867	7.43	
1976	122,219	36,948	4.27	
1977	47,571	15,309	1.78	
1978	16,160	5,317	0.62	
1979	12,304	4,907	0.45	
(tentative) up to Oct. 80)	1980	13,629	2,608	0.54

\* P. falciparum

\*\* (SPR - Slide Positivity Rate)

The API is below 0.5 for the entire country (i.e., the Annual Parasite Incidence is less than 500 per one million population).

18. Purpose

The program purpose was to reduce, within a five year period, the incidence of malaria to a level where the disease is no longer a major factor in Pakistan's over-all health situation and can be prevented by minor public outlays (page ii, CAP). Achievement of this purpose will be indicated by surveys which indicate that active malaria parasites are present in blood samples no more frequently than 500 positives in one million population (API 0.5).

The project has met this purpose of an API of 0.5 and exceeded it on an over-all country level. However, malaria incidence varies widely in Pakistan and may range from 18-20 cases per 10,000 population in some sectors of the Punjab and Sind to below 1.1 case per 10,000 (111 cases per million).

There is no doubt that the project did halt the massive epidemic of malaria which has meant the difference between life and death for thousands of Pakistan's citizens. It should be noted, however, that although the incidence is sharply reduced, the GOP has not achieved a situation where a major health problem can be prevented by "minor public outlays". Funding outlays, though declining, could not be termed "minor".

19. Goal

The CAP does not present a general goal statement but the goal of reducing morbidity, mortality and fertility so as to facilitate economic and social development in Pakistan represents what the project was targetted for.

The project has made significant contributions to the process of establishing an equitable and sound health service delivery system which is within Pakistan's human and fiscal resources to maintain.

The program has improved GOP planning capabilities within the life of the project. GOP documentation, such as the PC-1 (similar to AID's Project Identification Document), are done more effectively than in past years. The program is based on a Plan of Operation which is a

detailed document done in a manner which far surpasses the normal GOP program planning activities. The program is decentralized to the provinces and the planning is done from the provinces up to the Federal level, not as it had been done in years past by having central direction.

## 20. Beneficiaries

The beneficiaries of this project are the 55 to 60 million people living in the rural areas of Pakistan who are under the risk of malaria. The malaria control effort is aimed at the improvement of health at the village level which is in accord with the Basic Health Services Project supported by the USAID.

The mortality rates from malaria can be estimated at approximately 10% of the total cases in the 1950's. It is presently estimated that malaria mortality in 1980 may be well below 0.1%.

## 21. Unplanned Effects

The most pronounced unplanned effect of the Project to date has been the evaluation of the widespread use of the organophosphate insecticides, mainly malathion and fenitrothion, in worldwide anti-malaria spraying operations. After the 1976 malathion insecticide episode in Pakistan and its investigation by a number of scientists including the U.S. Center for Disease Control, the World Health Organization, USAID Regional and Country Malaria Advisors and Pakistan health and malaria specialists, there has been a series of international events which have led to the improvement of the specifications and inspections procedures for O.P. insecticides. These specifications are now being used world-wide with the result that malaria programs are using an improved formulated insecticide with better shelf life and more stable content, as well as having a better inspection system. In addition, a world-wide focus has been placed on safety practices for operational personnel using these compounds as well as the householders.

Another unplanned effect has been the rapid increase in awareness on the part of provincial MCP and health officials on the environmental aspects of their work. A number of alternative methods of malaria control are

now being planned or are in actual use, i.e., fish and larvicides. While such alternative methodologies had been tried in the past, the last three years have seen an upward surge of activity in this field.

22. Lessons Learned

The technical methodology for malaria control in Asian countries is far from being complete. It is essential that more efforts be put into research of both a basic and operational nature. In many areas the present methodology is not adequate to maintain the level of control necessary so the disease is no longer a public health problem.

The evaluation techniques used in the Pakistan Malaria Control Program of using a joint external and Pakistan team of specialists to review the progress of the program annually has proven to be a valid technique and could be used in other types of project activities. Such evaluations give valuable insight into the operational and management aspects of the program and highlight problem areas early in program activity, so corrections can be made.

The importance of proper management in planning, operating and evaluating such massive service programs such as malaria control cannot be under estimated. No matter how sound the technical activities of a program are, these activities must be managed and supported by effective, well trained and motivated officers and staff in order that the objectives are met in a responsive and economically sound manner.

Internationally, the program has had some effect as it is an area where Indian and Pakistan scientists meet to discuss their common border malaria problems. These meetings have been held over the course of the project and have provided a useful interchange. It may be worthwhile for other areas of development to consider such border and inter-country meetings.

An important lesson in this project is the continuing need for inter-sectoral cooperation between the Malaria Program and other offices of the Government, e.g., irrigation, public works, roads and agriculture. Such coordination lessens the risk of creating conditions through development activities which lead to malarious conditions.

23. Remarks

Two annexes (Annex 1 and Annex 2) are attached, which provide data on project funding and procurement of insecticides and equipment.

Also attached is Annex 3, a report of the Terminal Evaluation Team which is more lengthly and complete than the PES and provides details and backup for the Project Evaluation Summary.

The PES has 15 pages, excluding the annexes.

## Loan 391-U-163

MALARIA CONTROL FUNDING STATUS

10/10/75	Loan Amount (original)	\$20,000,000.00
	(revised)	4,000,000.00
		<hr/>
	Total Loan Amount	\$24,000,000.00
	Disbursement (thru 3/80)	\$21,612,383.75
	Balance available for 1980 Procurement	2,387,616.25
	Direct Reimbursement to Cyanamide by AID/Washington (August 1980)	95,577.41
	Inspection Charges paid by AID/Washington (October 1980)	11,274.85
	GOP Request being processed (January 1981)	2,237,877.36
		<hr/>
	Total Accrued Expenditure (4/1/80 thru 12/31/80)	2,344,729.62 <sup>a/</sup>
 SUMMARY:		
	Available Balance	2,387,616.25
	Commitments	2,344,729.62
		<hr/>
	Approx. balance (gross)	42,886.63 <sup>a/</sup>
	Refund on DRA 1 (October 1980)	14,697.70
		<hr/>
		\$57,584.33 <sup>a/</sup>

<sup>a/</sup> Does not reflect other charges  
(bank charges) not yet reported  
by AID/Washington.

Financial Documents issued by AID/W

DRA No. 1	dated 9/21/76	\$ 7,822,217.02
DRA No. 2	dated 11/8/77	8,030,020.70
DRA No. 3	dated 9/28/78	4,245.85
DRA No. 4	dated 10/10/78	3,274,512.00
DRA No. 5	dated 3/22/79	158,339.36
DRA No. 6	dated 9/18/79	4,613,715.72
L/Commt. 7	dated 5/21/80	96,949.35
		<u>\$24,000,000.00</u>

LIST OF ITEMS PROCURED UNDER  
MALARIA CONTROL PROJECT, 391-0424

<u>Request No.</u>	<u>50% WDP Malathion Metric Tons</u>	<u>BHS</u>	<u>Abate 500 E Imperial Gallons</u>	<u>Sprayer Hudson</u>	<u>Spare Parts</u>
1	5,829 MT (\$10,566,815.40)				
	1,420 MT (2,470,213.04)				
2	7,000 MT (10,957,088.58)	1,000 MT (1,586,000)		8,000 +2,000 (577,253.02)	(238,526.23)
3	4,000 MT 5,420,959.97)		2,500 (106,550.00)	1,394 (88,315.62)	(76,724.81)
4			2,500 (103,588.82)	EXPERT 1,394 (85,838.25)	Supp: Tube Adapters 13,500 (15,106.27) 31,500 (59,365.59)
5	2,500 MT (3,734,069.99)				20,000 Nozzles tips 10,000 Larviciding nozzles 10,000 Tube Adapters (86,937.71)
6	1,745 (3,704,006.06)				ULV-LECO (25,789.53)

<u>Request No.</u>	<u>50% WDP Malathion Metric Tons</u>	<u>BHS</u>	<u>Abate 500 E Imperial Gallons</u>	<u>Sprayer Hudson</u>	<u>Spare Parts</u>
7	45 MT (85,945) 100% financed by AID				

Note: Freight, inspection and banking charges/cost not included.

DOCUMENT CONTINUES - PD-AAI-301  
(# 3910242006801)