

095445

2.47.69

720335



LM095445

20
6

Activities Of The Research And
Development Center - Thailand,
Advanced Research Projects
Agency B-167324

Department of Defense

*UNITED STATES
GENERAL ACCOUNTING OFFICE*

~~700905~~

095445

DEC. 29, 1971



UNITED STATES GENERAL ACCOUNTING OFFICE

WASHINGTON, D.C. 20548

DEFENSE DIVISION

B-167324

Dear Mr. Secretary:

This is our report on activities of the Research and Development Center-Thailand, Advanced Research Projects Agency.

5.2475
D451

This report contains a recommendation for clarifying the Agency's overseas mission. The recommendation is subject to the provisions of section 236 of the Legislative Reorganization Act of 1970. We shall appreciate receiving copies of the statements you furnish to the specified committees in accordance with these provisions.

Copies of this report are being sent to the Chairmen of the House and Senate Committees on Appropriations; the Chairmen of the House and Senate Committees on Armed Services; the Chairman of the Senate Committee on Foreign Relations; the Chairman of the House Committee on Foreign Affairs; the Chairmen of the House and Senate Committees on Government Operations; and to the Chairman, Foreign Operations and Government Information Subcommittee, House Committee on Government Operations. Copies are being sent also to the Secretary of State; the Director, Office of Management and Budget; and the Director of Defense Research and Engineering.

5370
5370
5370
5370
5370
5370

Sincerely yours,

For Director, Defense Division

The Honorable
The Secretary of Defense

D I G E S T

WHY THE SURVEY WAS MADE

The operations of the Research and Development Center-Thailand were surveyed to obtain information on the overseas research activities of the Advanced Research Projects Agency (ARPA), a component of the Department of Defense (DOD). These activities were undertaken in conjunction with ARPA's Project AGILE which was created in 1961 to conduct research and development in remote area conflict.

The Center is the ARPA component of an organization operated jointly by the Thai and United States Governments. Costs for operating the Center, including contractor costs, totaled about \$15 million for fiscal years 1968 and 1969.

The primary objective of the General Accounting Office (GAO) survey was to evaluate the selection, management, and utilization of research projects conducted or sponsored by the Center.

OBSERVATIONS

General

The U.S. Mission has been providing to Thailand both military and non-military assistance directed toward meeting the Communist threat. The U.S. Military Assistance Command/Joint U.S. Military Advisory Group-Thailand is responsible for military assistance, and the Agency for International Development (AID) is responsible for major nonmilitary assistance; both are subject to the coordination and supervision of the Ambassador. AID applied most of its resources to programs which promoted internal security and rural development. These programs included considerable support of the Thai National Police Department whose responsibilities include internal security and border control. (See pp. 7 to 9.)

Nature of research

The Center's research since 1966 has involved all aspects of counterinsurgency--the social, economic, and political, as well as military. It appears to GAO that the broad scope of the Center's activity was influenced by the liberal funding of ARPA's program, contrasted with the limited funds available to the Embassy and AID for research.

There is potential military utility for the projects, but many seem to be more relevant to the needs of nonmilitary elements of the U.S. Mission and the Thai Government. For example, the Center financed a \$1.1 million project to develop and apply techniques for assessment of the impact on counterinsurgency of economic, social and political programs. The first programs assessed were from the Community Development Department, the National Police Department, and the Office of Accelerated Rural Development, all nonmilitary Thai organizations. Although financed by the Center, this project was under the direct control of the Ambassador's Special Assistant for Counterinsurgency.

The nonmilitary aspects of counterinsurgency are largely the responsibility of the Department of State and AID. The Ambassador's Special Assistant for Counterinsurgency informed GAO that he had been compelled to rely on the Center for research support because the Embassy had not been furnished with research funds. GAO believes it preferable that research related to responsibilities of the Department of State and AID be funded, as well as planned and directed, by them. This activity thus would be subject to the scrutiny of those committees and subcommittees of the Congress concerned with the activities of the Department of State and AID. (See pp. 10 to 18.)

In its report on "Need for Improved Review and Coordination of the Foreign Affairs Aspects of Federal Research," issued May 27, 1971, GAO stated that the State Department had a very small external research program and depended largely on other agencies to support research bearing on foreign policy. GAO believed that the Department should establish a research program of a scope commensurate with its responsibilities in foreign affairs and should develop a comprehensive statement of its external research policy. In reply the Department commented that it was hoping to increase substantially its funds for external research.

Effectiveness of research

The Embassy believes that certain of the research projects conducted by the Center have made an important contribution to the counterinsurgency effort in Thailand. GAO believes, however, that some of the research could have been more successful in terms of cost and effectiveness if the Thai Government had participated more fully in the planning of the research and if contractor assistance in planning and directing the research had been provided to the Center on a timely basis. (See pp. 23 to 35.)

Management of research projects

GAO believes that the contractors would have been controlled more effectively had the Center been given greater responsibility and commensurate authority for the direction of contractor research in Thailand.

In GAO's opinion, the Center's surveillance of research projects needed to be improved and the Center needed to

- develop a systematic approach for gauging the efficiency and effectiveness with which contractors conducted their efforts,
- follow the instructions of ARPA headquarters regarding review of contractor research efforts, and
- ensure that all significant actions under the contracts were made a matter of record. (See pp. 37 to 41.)

Construction of facility

ARPA committed \$150,000 in 1963 to participate with the Thai Government in the cost of constructing a joint office building in Bangkok. Also ARPA was spending an estimated \$486,000 of research and development funds for construction of an addition to this facility. Title to these facilities is vested in the Thai Government. In view of the unusual circumstances, GAO believes that the appropriate congressional committees should have been advised of the facts regarding this matter. (See pp. 43 to 46.)

Suggestions

In a draft report GAO suggested that there was need for a reassessment and definitization of ARPA's overseas mission and for full recognition of the responsibilities and funding authorities of U.S. military and civil agencies.

AGENCY ACTIONS, UNRESOLVED ISSUES
AND RECOMMENDATIONS

DOD said that ARPA had measured each project against the legitimate interest of DOD relevance. DOD concurred, however, that means to fulfill research needs of the U.S. Mission should be developed further, particularly those not closely related to DOD responsibilities. (See p. 19.)

With regard to the other matters discussed in the report, DOD:

- Agreed that improvements would be made in the management of research projects. (See p. 41.)
- Disagreed with GAO's view that congressional committees should have been given advance notification of the construction of facilities in Thailand. DOD agreed that Congress would be notified of similar construction events in the future, however, because of the House Committee on Appropriations' desire for all construction funded with research and development funds to be clearly identified. (See p. 46.)

ARPA's appropriation for fiscal year 1970 was less than requested. The Congress directed it to apply a significant part of the reduction to Project AGILE. In May 1970 the Director of ARPA reported to the House Committee on Appropriations that, as a result of the budget cut and an ARPA evaluation of the AGILE activities in Thailand, he, with the concurrence of the

Ambassador to Thailand, had reduced the effort in Thailand to \$4 million in fiscal year 1970 and to \$3.6 million in 1971.

GAO subsequently was advised by ARPA that in 1971 the U.S. Ambassador expressed the view that the planned ARPA withdrawal from Thailand could be accelerated and that in the process a transition to a long-term U.S. advisory role could be effected. The new arrangement will provide U.S. advice and assistance in the research and development area as part of the general U.S. military assistance effort in Thailand.

The U.S. Military Assistance Command-Thailand, formally assumed the advisory role on July 1, 1971, while the Center continued to provide technical and financial support until October 1972. The Center's role was to terminate at that time.

Recommendations

The Secretary of Defense should consider clarifying ARPA's overseas mission to avoid authorization of research into areas which are more closely related to the missions and programs of nonmilitary agencies. The cost of research conducted by ARPA at the request of other agencies should be reimbursed by the requesting agencies. (See p. 21.)

C o n t e n t s

	<u>Page</u>
DIGEST	1
CHAPTER	
1 INTRODUCTION	5
United States activity in Thailand	7
2 NATURE OF RESEARCH PERFORMED	10
First phase--1961 through 1965	10
Second phase--1966 to 1969	12
Third phase--Beginning in 1969	15
Agency comment and our evaluation	19
Recommendation	21
3 EFFECTIVENESS OF RESEARCH	23
Highlights of Border Control Systems Project	23
Highlights of Border Area Security Evaluation Project	28
Program planning and direction problem recognized but not corrected	32
Evaluation difficult because required appraisals were not made	33
Embassy believes research was valuable	33
Conclusion	35
Agency comments and our evaluation	35
4 MANAGEMENT OF RESEARCH PROJECTS	37
Division of management responsibilities	37
Need for improved surveillance of projects	38
Need for improved documentation	39
Approval for publication of research reports	40
Conclusion	41
Agency comments	41
5 FACILITIES	43
Existing facilities	43
Planned facilities	44

CHAPTER		<u>Page</u>
	Conclusion	46
	Agency comments and our evaluation	46
6	SCOPE OF SURVEY	48

APPENDIX

I	Letter dated September 25, 1970, from the Director of Defense Research and Engineering to the General Accounting Office	51
II	Principal officials of the Department of Defense responsible for administration of activities discussed in this report	56

ABBREVIATIONS

AID	Agency for International Development
ARPA	Advanced Research Projects Agency
DOD	Department of Defense
GAO	General Accounting Office

D I G E S T

WHY THE SURVEY WAS MADE

The operations of the Research and Development Center-Thailand were surveyed to obtain information on the overseas research activities of the Advanced Research Projects Agency (ARPA), a component of the Department of Defense (DOD). These activities were undertaken in conjunction with ARPA's Project AGILE which was created in 1961 to conduct research and development in remote area conflict.

The Center is the ARPA component of an organization operated jointly by the Thai and United States Governments. Costs for operating the Center, including contractor costs, totaled about \$15 million for fiscal years 1968 and 1969.

The primary objective of the General Accounting Office (GAO) survey was to evaluate the selection, management, and utilization of research projects conducted or sponsored by the Center.

OBSERVATIONS

General

The U.S. Mission has been providing to Thailand both military and non-military assistance directed toward meeting the Communist threat. The U.S. Military Assistance Command/Joint U.S. Military Advisory Group-Thailand is responsible for military assistance, and the Agency for International Development (AID) is responsible for major nonmilitary assistance; both are subject to the coordination and supervision of the Ambassador. AID applied most of its resources to programs which promoted internal security and rural development. These programs included considerable support of the Thai National Police Department whose responsibilities include internal security and border control. (See pp. 7 to 9.)

Nature of research

The Center's research since 1966 has involved all aspects of counterinsurgency--the social, economic, and political, as well as military. It appears to GAO that the broad scope of the Center's activity was influenced by the liberal funding of ARPA's program, contrasted with the limited funds available to the Embassy and AID for research.

There is potential military utility for the projects, but many seem to be more relevant to the needs of nonmilitary elements of the U.S. Mission and the Thai Government. For example, the Center financed a \$1.1 million project to develop and apply techniques for assessment of the impact on counterinsurgency of economic, social and political programs. The first programs assessed were from the Community Development Department, the National Police Department, and the Office of Accelerated Rural Development, all nonmilitary Thai organizations. Although financed by the Center, this project was under the direct control of the Ambassador's Special Assistant for Counterinsurgency.

The nonmilitary aspects of counterinsurgency are largely the responsibility of the Department of State and AID. The Ambassador's Special Assistant for Counterinsurgency informed GAO that he had been compelled to rely on the Center for research support because the Embassy had not been furnished with research funds. GAO believes it preferable that research related to responsibilities of the Department of State and AID be funded, as well as planned and directed, by them. This activity thus would be subject to the scrutiny of those committees and subcommittees of the Congress concerned with the activities of the Department of State and AID. (See pp. 10 to 18.)

In its report on "Need for Improved Review and Coordination of the Foreign Affairs Aspects of Federal Research," issued May 27, 1971, GAO stated that the State Department had a very small external research program and depended largely on other agencies to support research bearing on foreign policy. GAO believed that the Department should establish a research program of a scope commensurate with its responsibilities in foreign affairs and should develop a comprehensive statement of its external research policy. In reply the Department commented that it was hoping to increase substantially its funds for external research.

Effectiveness of research

The Embassy believes that certain of the research projects conducted by the Center have made an important contribution to the counterinsurgency effort in Thailand. GAO believes, however, that some of the research could have been more successful in terms of cost and effectiveness if the Thai Government had participated more fully in the planning of the research and if contractor assistance in planning and directing the research had been provided to the Center on a timely basis. (See pp. 23 to 35.)

Management of research projects

GAO believes that the contractors would have been controlled more effectively had the Center been given greater responsibility and commensurate authority for the direction of contractor research in Thailand.

In GAO's opinion, the Center's surveillance of research projects needed to be improved and the Center needed to

- develop a systematic approach for gauging the efficiency and effectiveness with which contractors conducted their efforts,
- follow the instructions of ARPA headquarters regarding review of contractor research efforts, and
- ensure that all significant actions under the contracts were made a matter of record. (See pp. 37 to 41.)

Construction of facility

ARPA committed \$150,000 in 1963 to participate with the Thai Government in the cost of constructing a joint office building in Bangkok. Also ARPA was spending an estimated \$486,000 of research and development funds for construction of an addition to this facility. Title to these facilities is vested in the Thai Government. In view of the unusual circumstances, GAO believes that the appropriate congressional committees should have been advised of the facts regarding this matter. (See pp. 43 to 46.)

Suggestions

In a draft report GAO suggested that there was need for a reassessment and definitization of ARPA's overseas mission and for full recognition of the responsibilities and funding authorities of U.S. military and civil agencies.

AGENCY ACTIONS, UNRESOLVED ISSUES
AND RECOMMENDATIONS

DOD said that ARPA had measured each project against the legitimate interest of DOD relevance. DOD concurred, however, that means to fulfill research needs of the U.S. Mission should be developed further, particularly those not closely related to DOD responsibilities. (See p. 19.)

With regard to the other matters discussed in the report, DOD:

- Agreed that improvements would be made in the management of research projects. (See p. 41.)
- Disagreed with GAO's view that congressional committees should have been given advance notification of the construction of facilities in Thailand. DOD agreed that Congress would be notified of similar construction events in the future, however, because of the House Committee on Appropriations' desire for all construction funded with research and development funds to be clearly identified. (See p. 46.)

ARPA's appropriation for fiscal year 1970 was less than requested. The Congress directed it to apply a significant part of the reduction to Project AGILE. In May 1970 the Director of ARPA reported to the House Committee on Appropriations that, as a result of the budget cut and an ARPA evaluation of the AGILE activities in Thailand, he, with the concurrence of the

Ambassador to Thailand, had reduced the effort in Thailand to \$4 million in fiscal year 1970 and to \$3.6 million in 1971.

GAO subsequently was advised by ARPA that in 1971 the U.S. Ambassador expressed the view that the planned ARPA withdrawal from Thailand could be accelerated and that in the process a transition to a long-term U.S. advisory role could be effected. The new arrangement will provide U.S. advice and assistance in the research and development area as part of the general U.S. military assistance effort in Thailand.

The U.S. Military Assistance Command-Thailand, formally assumed the advisory role on July 1, 1971, while the Center continued to provide technical and financial support until October 1972. The Center's role was to terminate at that time.

Recommendations

The Secretary of Defense should consider clarifying ARPA's overseas mission to avoid authorization of research into areas which are more closely related to the missions and programs of nonmilitary agencies. The cost of research conducted by ARPA at the request of other agencies should be reimbursed by the requesting agencies. (See p. 21.)

CHAPTER 1

INTRODUCTION

The Research and Development Center-Thailand is a field unit of the Advanced Research Projects Agency, an organization within the Office of the Director, Defense Research and Engineering, Department of Defense.

The Overseas Defense Research Program--hereinafter referred to as Project AGILE--was created in 1961 in response to a Presidential directive approving the recommendations of the Director of Defense Research and Engineering to organize a program for research and development activities to be concerned with those forms of conflict in remote areas of the world ranging from incipient subversion to invasion by large conventional forces. The original Project AGILE assignment was stated as:

- "1. Research and development in field conflict techniques with special reference to remote areas and local military forces. Research and development capabilities will be applied to the study of vital military problems in distinctive environmental conditions, e.g., the tropics or mountainous areas.
- "2. Research investigations and analysis of such matters as mobility, logistics, communications, and firepower will be undertaken in the U.S. and in the field to determine the relationship between varying levels of conflict and the environment. Results provided by the research will be used to identify effective remote area field conflict techniques."

In 1967 the statement of mission was changed to:

"Research and development supporting the DOD's operations in remote areas, associated with the problems of actual or potential limited or

subversive wars involving allied or friendly nations in such areas."

After the creation of Project AGILE, ARPA established combat development and test centers in the Republic of Vietnam and the Kingdom of Thailand, each jointly operated by ARPA and the host governments. The Thailand center, activated in November 1961, was later named the Military Research and Development Center. The Research and Development Center-Thailand is the ARPA component of that organization.

According to the memorandum of understanding between the two Governments, the Thai-United States organization was established for the purpose of conducting research, development, testing, and engineering in support of the common military defense efforts of the two Governments. The memorandum sets forth the objectives as follows:

"*** the United States and Royal Thai Government seek to develop a facility capable of conducting research, development, testing and evaluation in fields relevant to the defense efforts of participating governments through the application of available scientific and technological resources. Special emphasis is placed on strengthening the counter-insurgency capabilities of the Royal Thai Government and in developing practical applications of RDT&E." (Under-scoring supplied)

In recent years the major part of the Center's research effort was carried out through U.S. contractors. Fiscal year 1968 and 1969 funds for U.S. contractors totaled over \$11 million whereas other costs of the Center's operations for these two fiscal years totaled less than \$4 million. As discussed in chapter 2, at the time of our survey the Center was cutting back on the use of contractors. DOD advised us that fiscal year 1971 funds for U.S. contractors were reduced to \$1.6 million, whereas funds for other costs were increased significantly.

There were about 570 persons involved in the Thai-United States organization and U.S. contractor operations in July 1969. A breakdown of the personnel by organization and type follows.

	<u>Profes-</u> <u>sional</u>	<u>Clerical</u>	<u>Total</u>
Center:			
U.S. civilian	13	4	17
U.S. military	14	3	17
Thai civilians	<u>61</u>	<u>94</u>	<u>155</u>
Total	<u>88</u>	<u>101</u>	<u>189</u>
U.S. contractors:			
U.S. civilians	73	27	100
Thai civilians	<u>67</u>	<u>119</u>	<u>186</u>
Total	<u>140</u>	<u>146</u>	<u>286</u>
Total	<u>228</u>	<u>247</u>	475
Thai component	(a)	(a)	<u>95</u>
Total			<u>570</u>

^aNot available.

DOD informed us that, about a year later (September 1970), Center personnel had increased from 189 to 207 and that contractor personnel had decreased from 286 to 137.

UNITED STATES ACTIVITY IN THAILAND

U.S. assistance to Thailand was the subject of a classified report that we issued to the Congress on December 9, 1969 (B-133258). That report provides a background of information against which the ARPA activities discussed in chapter 2 may be considered. The report deals with assistance activities that were carried out in Thailand under the Foreign Assistance Act of 1961. ARPA activities were not carried out under the authority of the Foreign

Assistance Act and therefore were not discussed in the report. Pertinent information from that report follows.

The U.S. economic and military assistance programs to Thailand are administered by the U.S. Mission, headed by the Ambassador. Agencies represented in the U.S. Mission include:

- U.S. Embassy
- U.S. Operations Mission of the Agency for International Development
- United States Information Agency
- U.S. Military Assistance Command/Joint U.S. Military Advisory Group-Thailand

Executive Order No. 10893 of November 8, 1960, set forth the responsibilities of the Ambassador for coordination and supervision of the functions of all U.S. agencies abroad. Section 201 provides that:

"The several Chiefs of the United States Diplomatic Missions in foreign countries, as the representatives of the President and acting on his behalf, have and exercise, to the extent permitted by law and in accordance with such instructions as the President may from time to time promulgate, affirmative responsibility for the coordination and supervision over the carrying out by agencies of their functions in the respective countries."

In Thailand, the Ambassador's Special Assistant for Counterinsurgency coordinates and supervises the counterinsurgency activities of the U.S. Mission.

Both military assistance and nonmilitary assistance to Thailand have been directed toward meeting the Communist threat. The U.S. Military Assistance Command-Thailand is responsible for military assistance and the U.S. Operations Mission of the Agency for International Development is responsible for major nonmilitary assistance; both subject to the coordination and supervision of the Ambassador.

AID applied most of its resources to programs which promoted internal security and rural development. These programs included considerable support of the Thai National Police Department whose responsibilities include internal security and border control.

CHAPTER 2

NATURE OF RESEARCH PERFORMED

After the Center's establishment in 1961, its operations went through three distinct phases.

- From 1961 through 1965 major emphasis was on developing and testing equipment and materiel and on developing the Thai military capabilities in this area.
- From 1966 to 1969, pursuant to ARPA's expansion of the Project AGILE mission and in response to Thailand's mounting difficulties with Communist insurgents, the Center undertook a broad, long-range research program aimed at helping the U.S. Mission and the Thai Government cope with the insurgency in Thailand, as well as contributing to a better understanding of the general problems of countering insurgency in developing countries. This effort, which emphasized the use of contractors, involved operations research, systems analysis, and social and behavioral science capability.
- In 1969, after a number of the long-range projects had been completed or curtailed, emphasis was placed on performing short-term studies in support of the counterinsurgency efforts of the U.S. Mission and in developing Thai research and development capability.

The broadening of the Center's program in 1966 was especially significant because it resulted in the Center becoming involved in research into aspects of counterinsurgency that, in GAO's opinion, were nonmilitary in nature or were more relevant to the current information and related needs of nonmilitary elements of the Thai Government and the U.S. mission.

FIRST PHASE--1961 THROUGH 1965

The initial direction of the Center's efforts was set forth in a February 10, 1962, memorandum of understanding between ARPA and the Commander in Chief, Pacific, for the implementation of Project AGILE in the Pacific. This document covered ARPA's activities in Thailand and Vietnam.

The memorandum stated that AGILE's mission in Southeast Asia was

- to provide direct materiel and nonmateriel research, development, test, and evaluation support to the armed forces of selected countries to assist the countries in securing themselves against attacks by insurgents and guerrillas and by conventional forces and
- to assist the armed forces of these countries in developing their research, development, test, and evaluation capabilities for their self-defense.

With respect to Thailand, the memorandum stated that AGILE's specific mission was to orient on long-term field research and tests applicable to countersubversion, counterinsurgency, and limited warfare throughout Southeast Asia. In addition, tests were to be performed that could not be done in South Vietnam because of the lack of secure areas.

The agreement noted that the focus of the initial work in Thailand was to be on materiel, although it stated that nonmateriel projects were to be phased in as problem areas were identified accurately and scientific personnel became available.

Little effort was devoted to nonmateriel research prior to 1966. Effort had been directed instead to developing and testing military equipment and materiel. Examples of the types of projects carried out during this phase were

- an evaluation of the use of dehydrated rice in Thai combat rations,
- an evaluation of a tunnel-detector probe,
- an operational demonstration and evaluation of a flexible-wing glider,
- tests and an evaluation of a "Hover truck" vehicle, and
- tests of seismic-intrusion detectors.

SECOND PHASE--1966 to 1969

By 1966 the primary thrust of the research in Thailand changed direction, being concerned principally with the problem of counterinsurgency, although materiel developing and testing continued to be performed. This reorientation of the research program appeared to have been attributable primarily to ARPA's decision in 1964 to redirect the emphasis of Project AGILE from the development of hardware to a broad examination into the nature of insurgencies and means of countering them.

According to ARPA, Project AGILE's primary objectives during its first 3 years, 1961 to 1964, were (1) to provide the quickest possible application of technology to the needs of remote area conflict and (2) to explore the widest possible spectrum of devices and techniques having any likelihood of contributing to effective counterinsurgency. In the future emphasis was to be placed on researching two new areas of interest.

"(1) The fundamental and perhaps dominant importance of human behavioral factors in insurgent conflict, and

"(2) The need to obtain a systems perspective by the selective combination of technology and behavioral factors in integrated, functionally-oriented, counterinsurgency programs."

Rural Security Systems Program

Regarding the Center's activities in Thailand, the reorientation of Project AGILE was reflected in the Rural Security Systems Program which was conceived by ARPA in 1965. The stated purpose of this program was to provide increased knowledge of the effectiveness and cost of existing and possible counterinsurgency programs for Northeast Thailand. It was to serve the needs of the U.S. Mission and Thai Government for improved program planning and was to contribute to a better understanding of the general problems of countering insurgency in developing countries.

The program's first year plan stated that it was envisioned that the activities undertaken might fall within the following four functional groups.

1. Prevention of outside infiltration of insurgent support.
2. Attainment of internal security.
3. Establishment of the presence of the central government at the local level.
4. Local economic and social development.

It appears to us that the first two of these groups are of a military nature and thus clearly relevant to the Center's program. The third, establishment of the presence of the central government at the local level, would appear to be of a political nature and therefore primarily a responsibility of the Department of State rather than DOD. Similarly local economic and social development would seem to involve areas of primary interest to the U.S. Operations Mission which administers the assistance programs of AID.

Examples of the types of projects that were undertaken during the Center's second phase were, as follows:

- The development of a village-information system which involved identification of Thailand's numerous villages, and the design and implementation of a system for the reporting of insurgent and counterinsurgent activity at these villages.
- A study of insurgent psychological operations which involved research into (1) the kinds of insurgent psychological recruitment and training activities and (2) villager attitudes and environmental factors which influenced joining and supporting the insurgency.
- The development of a manual, in Thai and English, containing information on the NAKHON PHANOM area of Thailand where the insurgents had been active. The manual included volumes on physical environment, social environment, economic environment, and public administrative environment.

- A study to determine the socioeconomic and attitude effects of providing a bulldozer for building a road network between isolated rural communities.
- A project undertaken to develop a system for inhibiting infiltration effectively across the Mekong River. (See ch. 3 for a detailed description of this project.)
- A project to study the effects of introducing television into eight remote villages and to determine the potential of television as a means of influencing attitudes in support of the counterinsurgency.

THIRD PHASE--BEGINNING IN 1969

At the time of our survey in late 1969, the Center's research program was in a transitional stage. Most of the long-range projects associated with the Rural Security Systems Program had been completed or curtailed. This action was the result of a decision to deemphasize the development of systems and to place more emphasis on serving the immediate needs of the U.S. Mission rather than the long-range objectives of Project AGILE.

This change is evidenced by an August 1969 letter from the Director of the Center to the Ambassador wherein the Director stated that he was taking steps to orient Center activities to assist more directly in the achievement of overall U.S. Mission goals.

The Director stated that he was reducing significantly the number of U.S. contractor personnel deployed in Thailand, many of whom had been working on Rural Security Systems Program tasks. With this reduction in the effort of contractors, greater reliance was to be placed on performing research projects with Center personnel.

The objectives of the Center in later 1969 were (1) to obtain data on counterinsurgency of importance to the United States, (2) to provide research support to the Embassy and other U.S. Mission agencies in their efforts to assist the Thai to counter the insurgency threat, and (3) to help build the Thai research and development capability.

These three objectives, to a certain extent, represented the direction of the Center's prior efforts. Relatively more effort, however, was to be directed to the second and third objectives--serving the needs of the U.S. Mission and helping the Thais build a research and development capability.

Meeting U.S. Mission needs

The Center was particularly responsive to the requirements of the Ambassador's Special Assistant for Counterinsurgency. We were informed by the Special Assistant that he was compelled to rely on the Center for research support because the Embassy did not have funds for this purpose.

The Special Assistant, who had the diplomatic rank of Minister Counselor, was the focal point of all U.S. counterinsurgency activities in Thailand. He was responsible for coordinating and supervising all U.S. activities, military and civil, that were directly related to the problem of insurgency in Thailand.

Examples of research that the Center performed at the request of the Special Assistant for Counterinsurgency are:

- A study entitled "Youth in Ethnic Thai Village."
- A study of the feasibility of developing a tribal education center in the North.
- A search for information on land tenure in Thailand.
- A study of clan relationship among the Meo tribesmen.
- A preparation of a Thailand insurgent infrastructure manual.
- A study of Thai counterinsurgency air support.

Some of these studies, such as the first four listed above, appear to be related more closely to the activities of non-military United States and Thai agencies.

The Center's role in meeting the research needs of the Mission was also illustrated by a \$1.1 million project entitled "The Impact of Economic, Social and Political Action Programs," which was started in 1968 and was active during the period of our survey. Specifically the contractor was

- to develop techniques for assessing different counterinsurgency programs and alternative patterns of program implementation, in terms of their actual impact on public support and
- to apply these techniques to the assessment of a variety of Thai counterinsurgency operations to generate programming guidelines of immediate utility in Thailand and of potential application to insurgencies in other parts of the world.

At the time of our survey, three assessments were under way involving programs of the following Thai Government agencies.

1. The Community Development Department
2. The Thai National Police Department
3. The Office of Accelerated Rural Development

These assessments involved activities that, on the U.S. side, were the operational responsibility of AID.

The \$1.1 million project is also of interest because of the Embassy's role. The contractor was working primarily under the direction of the Special Assistant for Counterinsurgency, rather than for the Center. At the time of our survey, the Center did not have a program manager assigned to this contract. The Division Chief who was nominally responsible for the contract informed us that the contractor had received very little direction from the Center, since the Special Assistant for Counterinsurgency had approved this project on the basis that he would provide immediate direction.

Developing Thai research and development capability

We noted that a joint committee had been set up to formulate a plan to phase the Center out of the Thai component operations within 5 years after adoption of the plan. At the time of our survey, the committee had arrived at an agreed statement of functions for the Thai Center. Center officials could give us no firm date when this phaseout would be completed. They advised us that, after the Thai Center became self-sustaining, there was a possibility that the Center would continue in existence to serve United States research needs.

Some progress had been made in developing the Thai organization's research and development capability. For example, the Thais were taking over an aerial reconnaissance laboratory that had been established by a Center contractor. This contractor had been training Thai personnel. The laboratory was to have been turned over on January 1, 1970, to the U.S. Military Assistance Command-Thailand, for funding under the military assistance program; however, because of

a delay in receiving certain equipment, the transfer was rescheduled to March 31, 1970.

Also the Thais were in the process of taking over the Electronics Laboratory. The purpose of that laboratory had been to create a capability in applied research and development in communications and electronics within the Thai military forces. The Center had provided a facility and support through a U.S. contractor. The Center was in the third year of a 5-year plan to transfer the operation of that laboratory to the Thais. Center support was to terminate in August 1972.

There were indications that the Thais had not been convinced of the usefulness of systems analysis and operations research in solving counterinsurgency problems and that, from the Thai standpoint, the Center's principal contributions were in the area of equipment and material testing and evaluation. This attitude appeared to account, in part, for the difficulty in obtaining desired levels of budgetary support for the Thai organization from the Thai Government. We were informed by the Center Director that the Center had been attempting to raise the stature of the Thai organization in the eyes of the Thai Government to enable it to obtain the needed support. We were advised that progress had been made in that direction.

Assistance to the Thai research and development effort also involved the construction of facilities in Thailand. This matter is discussed in chapter 5.

AGENCY COMMENT AND OUR EVALUATION

In commenting on these matters, the Director of Defense Research and Engineering stated that ARPA had measured each project against the legitimate interest of DOD relevance. Also the Director suggested that, in commenting on ARPA assistance to the Embassy, GAO had confused the responsibilities of the Embassy and that ARPA was of assistance in enabling the Embassy to carry out its functions as the coordinating staff of the Chief of the U.S. Diplomatic Mission in Thailand when the proposed work clearly was relevant to the DOD and ARPA mission.

We agree that research in counterinsurgency is relevant to ARPA's interpretation of its mission. We believe, however, that, in interpreting its mission, ARPA has not given adequate recognition to the missions of other agencies, particularly the State Department and AID. For example, the search for information on land tenure in Thailand and a study of the feasibility of developing a tribal education center appear to be more relevant to the missions of the Department of State and AID.

It appears to us that the Center's activities were shifted from research and development in clearly military-oriented fields to the broader area of counterinsurgency, which involves economic, social, and political factors, as well as military factors. The broad scope of the Center's activities undoubtedly was influenced by the availability to it of substantial funding as contrasted to the limited funds available to the Embassy and AID.

The Acting Director, ARPA, informed us that, in recognition of the complexity of the counterinsurgency problem, ARPA fully endorsed our suggestion that the Department of State take action to obtain and provide research funds needed by its Embassies to carry out their foreign assistance and other responsibilities properly.

The Department of State, in its comments, stated that:

"The Department of State has reviewed the GAO draft report on the activities of ARPA's Research and Development Center in Thailand (RDC-T).

In general, the recommendations are sound and reflect the most salient problem areas. Among the several conclusions, we particularly concur with the concept that the foreign affairs aspect of Government involvement primarily comes under the aegis of the Department of State. Certainly any future effort to delineate separate responsibilities, and ultimately separate appropriations, between U.S. military and civil agencies should be undertaken with that basic premise uppermost in mind."

The Department of State stated also that:

"By its very nature and operational setting, of course, counterinsurgency is a hybrid figure--part military, part sociopolitical. Research programs for counterinsurgency purposes have, in large part, inherited the same mixed character and consequently the same taxonomic questions. Delineations of responsibilities along this line would, therefore, seem to have more to do with a basic need for clarification in such transcendent areas than with a fault peculiar to *** [the Center]."

We agree with the view of the Department of State that counterinsurgency has a mixed character. It seems, however, that uncertainties regarding the appropriate limits for DOD research would be minimized if DOD projects were limited to those essential to the rendering of assistance to the military elements of foreign governments.

ARPA's appropriation for fiscal year 1970 was less than requested. The Congress directed it to apply a significant part of the reduction to Project AGILE. In May 1970 the Director of ARPA reported to the House Committee on Appropriations that, as a result of the budget cut and an ARPA evaluation of the AGILE activities in Thailand, he, with the concurrence of the Ambassador to Thailand, had reduced the effort in Thailand to \$4 million in fiscal year 1970 and to \$3.6 million in 1971.

We subsequently were advised by ARPA that in 1971 the U.S. Ambassador to Thailand expressed the view that the planned ARPA withdrawal from Thailand could be accelerated and that in the process a transition to a long-term U.S. advisory role could be effected. The new arrangement will provide U.S. advice and assistance in the research and development area as part of the general U.S. military assistance effort in Thailand.

The U.S. Military Assistance Command-Thailand, formally assumed the advisory role on July 1, 1971, while the Center continued to provide technical and financial support until October 1972. The Center's role was to terminate at that time.

RECOMMENDATION

We noted that in 1968 a panel on Behavioral Sciences, Defense Science Board-National Academy of Sciences, found that DOD, the Department of State, AID, and others shared many research needs in the behavioral and social science field but that agencies other than DOD had not sponsored social science research in any significant amount or with any obvious enthusiasm. The panel found also that, in part because DOD had been willing to underwrite social science research in the foreign area and in part because departmental responsibilities in this sphere were ill-defined and overlapping, DOD probably had sponsored work that, under other circumstances, might have been sponsored by other agencies.

We recommend that the Secretary of Defense consider clarifying ARPA's overseas mission to avoid authorization of research into areas which are more closely related to the missions and programs of nonmilitary agencies including the Department of State and AID. The cost of research performed by ARPA at the request of other agencies should be reimbursed by the requesting agencies.

In our report on "Need for Improved Review and Coordination of the Foreign Affairs Aspects of Federal Research," issued May 27, 1971, we stated that the State Department had a very small external research program and depended largely on other agencies to support research bearing on foreign policy. We believed that the Department should establish a

research program of a scope commensurate with its responsibilities in foreign affairs and should develop a comprehensive statement of its external research policy. In reply the Department commented that it was hoping to increase its funds substantially for external research.

CHAPTER 3

EFFECTIVENESS OF RESEARCH

In attempting to assess the effectiveness of the Center's research program, we concentrated our efforts on projects that were undertaken in connection with the Rural Security Systems Program (see p. 12), to which a substantial part of the Center's resources had been committed.

HIGHLIGHTS OF BORDER CONTROL SYSTEMS PROJECT

The largest systems project undertaken by the Center was the Border Control Systems Project. This project was terminated before its completion and after the expenditure of several million dollars.

The Border Control Systems Project was a U.S. Mission-initiated effort to develop a least-cost border control system for implementation by the Thai Government.

The contractor selected for this project had been engaged from April 1964 in work concerning surveillance requirements for counterinsurgency in Southeast Asia, particularly concerning the insurgent situation in South Thailand. In connection with an invitation for comments on the contractor's proposed 1967 work program, the Commander of the U.S. Military Assistance Command-Thailand submitted a request in February 1966 to the Director of the Center, essentially for investigations into the background traffic levels on the Mekong River--a highly traveled 500-mile border with Laos--and for an examination of specific surveillance equipment which could be used in surveillance of the Mekong.

The Center agreed to undertake a study as part of the existing surveillance program, but in a much broader context than requested. Our review of the information available on this project revealed no explanation for ARPA's interest in expanding the scope of the Military Assistance Command-Thailand request other than its general interest in developing comprehensive counterinsurgency systems under its Rural Security Systems Program. (See ch. 2.)

Expansion in scope of project

The project officer's April 1966 memorandum indicated that the border effort envisioned no more than 10 man-years of contractor support. The study was initiated in May 1966, by which time its scope had been expanded to include not only equipment, as requested by the Military Assistance Command, but also forces and tactics which would have the best chance of identifying insurgent traffic crossing the river.

The scope of the study was expanded further in November 1966 to include interception, as well as detection, of insurgent-related river traffic.

During the February to May 1967 progress reviews by ARPA, it was decided that the scope of the study should be expanded further to cover land-area concepts for control of the Mekong border as well as river-oriented concepts. In addition, during June and July of 1967, a small border air surveillance investigation was added.

For the contract year started November 1, 1967, the contractor was tasked to design and plan the implementation of a border control system for the Mekong River border that would encompass the control of insurgent activity in the total border environment (air, land, and river).

The contractor's research plan, as approved by ARPA in May 1968, structured the research so that each of the subsystems (air, land, and river) would be designed separately. Thereafter cost and effectiveness trade-offs would be made between the subsystems, to determine an effective, least-cost border control system incorporating elements of the individual subsystems.

Project discontinuation

In October 1968, after over 2 years of effort and after expenditures of several million dollars, the Embassy disapproved the proposed continuation of the project, which terminated the study prior to its completion. As a result the comprehensive system of border control earlier envisioned by ARPA was not realized. Instead only the river subsystem of the proposed system had progressed far enough to warrant

a separate contractor report. The Ambassador informed the Center that to devote the large research resources proposed for developing this system was not in the U.S. Mission interest.

In a November 1968 memorandum explaining this decision, the Center Director reported that it was the opinion of cognizant staff members of ARPA-Washington and the Center, as well as of members of the U.S. Operations Mission of AID, that the detailed-systems approach to border control would require too many resources over a period of time too long to follow through to a timely conclusion. This was also acknowledged in a memorandum by the ARPA-Washington project director.

Thais not significantly involved in
initiation and planning of project

The project was initiated on the assumption that the system would be implemented by the Thais. The project officer's February 1967 memorandum stated that the rules which applied to the study when it began and which continued to apply had stipulated that the system was for the Thais; that is, adapted to their capabilities--personnel, logistics, and financing. We found, however, that the Thais had not (1) participated significantly in the initiation and planning of the project or (2) given ARPA reason to believe that they would implement it when developed.

To monitor the research and assist in coordination, a U.S. Mission steering committee was formed under the auspices of the Embassy. The U.S. Military Assistance Command-Thailand, the U.S. Operations Mission, and the Center were represented on the committee; there was no Thai representation. The contractor's work generally was done under the Center's direction, and guidance was received from the committee.

During the steering committee meeting of July 1966, it was noted that the implementation of the system would be up to the Thai Government and the importance of getting early Thai participation was emphasized. The question was asked as to whether there were any ARPA plans to encourage implementation of the system by the Thais. ARPA representatives stated that the responsibilities for encouraging the Thais

to use the results of the study rested with agencies other than ARPA.

The minutes of the meeting showed that one Mission official had commented that the goal should be to find ways to help the Thais do a better job, rather than to impose upon them an alien system. As of January 1967, however, it remained a problem of the committee as to how and at what point study findings should be introduced to various elements of the Thai Government.

The minimal participation by the Thais in the programming and direction of the project is indicated by the project officer's February 1967 memorandum in which he laid out plans for briefing the numerous elements of the Thai Government to seek their cooperation in field testing the proposed system. He stated that the test plan, so far, officially represented only the views of the U.S. Mission elements and that further progress hinged on Thai Government acceptance and support.

Skepticism over Thai implementation of the system was reported by the contractor in October 1967. According to the contractor's October 1967 report, the Thai National Security Command, which had responsibility for border control, feared that the system would be too complex and too expensive for implementation.

In disapproving continuation of this project in October 1968, the Ambassador expressed an interest in assisting in a different border area security plan which was being devised by the Thais, because it represented Thai, rather than United States, initiative. The Ambassador pointed out that it was not in the U.S. Mission interest to devote significant resources to develop a U.S. position on the best system and procedure for inhibiting cross-border traffic.

We believe that a survey effort by an appropriate element of the U.S. Mission to assess the need for a cost-effective border control system might have been appropriate; however, before embarking on the costly design and development of such a system, it seems only reasonable that significant Thai participation and support should have been obtained.

Benefits derived

The ultimate objectives of the project were not achieved. We were informed by the Director of ARPA, however, that benefits were derived from it. First, the test unit became an operating unit which actively surveyed the river in a limited area. In a recent month it captured three infiltration craft carrying military equipment. Second, the project brought together into an effective working unit elements of the Thai Navy, Border Patrol Police, Provincial Police, Customs and Emigration, and Communist Suppression Operations Command. Third, and most important, it demonstrated that the Thai Navy could plan an effective counterinsurgency role on the river.

HIGHLIGHTS OF BORDER AREA
SECURITY EVALUATION PROJECT

The Border Area Security Evaluation Project was to evaluate the Thai-devised plan for border control. (See p. 26.) The Center expanded a proposal for a modest level of assistance to Thai researchers into a million dollar endeavor.

In rejecting ARPA's request to extend the Border Control Systems Project for an additional year, as discussed in the preceding section, the Ambassador indicated in October 1968 that he would approve, on a modest level and under Thai direction, an ARPA project to aid in the evaluation of the Thai Government's border security operation. He informed ARPA that the Thais were interested in having about 40 Thai researchers work with the advice and guidance of not more than two American experts; however, after ARPA and contractor discussions with the Embassy, the plan for this project increased the number of American researchers to seven. We were informed that the plan had received the support of the Ambassador because it represented Thai, rather than United States, initiative.

The contract for this project was signed on January 8, 1969. It called for a 10-month performance period and allowed for an additional 2 months for report review and for the closing of the contractor's facilities in Thailand. The contract provided nearly \$700,000 for the first 10 months.

The Border Area Security Evaluation Project redirected ARPA's research efforts in border control systems; however, the basic objective, the development of basic recommendations for improving the Thai Government's border control capability, remained the same. The program was redirected to take advantage of the implementation of the Thai-initiated border control system. The approach changed from that of mounting an American test program, involving the commitment of extensive U.S. research resources, to that of utilizing the Thai plan as a test vehicle. U.S. participation was to be limited to providing the contractor's professional data analysis support to work with data collected by the Thais on their plan.

The border security plan which the contractor was to evaluate was designed by the Thai Government's Communist

Suppression Operations Command. It called for the recruitment of local villagers to identify, report, and apprehend Communist infiltrators. ARPA's program called for an operations analysis approach to the evaluation of the Thai plan. The contractor was to evaluate operational field tests by the Thai forces in a test area, make recommendations for improvement, and assess the applicability of the plan to other Thai borders. The contract, as written, was necessarily tied to the Thai field exercises.

The Thais originally were scheduled to begin implementation of field test exercises in April 1969. The contractor planned to obtain data on the test exercises between April and August and was to submit a draft report to ARPA by October 31, 1969. The field test exercises were not held, although the Thais did perform other field exercises. None of these exercises, however, included actual infiltration simulation to test the effectiveness of the Thai forces organized under the plan.

The Chief of the Center's Security System Division informed us that, late in November 1969, the tests still had not been held and that no report had been submitted by the contractor, although the contract period had expired. He stated that no meaningful evaluation could be made until the tests were held.

During this period, when the delay of the implementation of the Thai field test exercises had been recognized, ARPA extended the performance period of the contract for 2 additional months, which brought the funds available under the contract to about \$870,000. Center officials informed us that ARPA was considering, at an additional cost of about \$250,000, a 7-month extension of the contract beyond December 1969, in the hopes of obtaining the test data required for completion of the project.

Premature implementation

The contract was signed and the project was started early in January 1969 before a copy of the Thai plan had been received officially, before formal meetings with cognizant Thai officials had been held, and before the work program had been approved by the Thai Government. We were

informed that, before work on the project began, preliminary copies of the plan had been received and informal discussions had been held. The program manager informed us, however, that, during the preliminary discussions with Thai officials, they had stated only that they wanted the Center's help in making an evaluation and that he had assumed only that they wanted an operations-research-type evaluation.

A review of the contractor's monthly reports clearly showed that the project had been started prior to establishing the necessary ground work with the Thai authorities and that this had led to program slippage.

On February 10, 1969, a month after the project had started, the contractor reported to ARPA that the request for permission to hold discussions with Thai officials had not yet been approved. The contractor commented that:

"*** the long delays in obtaining Thai approval, and the fact that discussions had not yet been held with Communist Suppression Operations Command officials have resulted in slippages, the seriousness of which we are not yet able to assess. Aside from the reduction in scope and/or depth of field testing that may have been caused by the slippage, the dominating problem *** is possible constraints *** on design of tests and data collection."

It is clear that the informal discussions held in November and December 1968 were insufficient for meeting the requirements of the researchers or for permitting them to proceed on schedule with the project.

When a meeting finally was held in February 1969, it was apparent to the researchers that they could not meet their objectives. The contractor's report of March 1, 1969, stated that the meeting had made clear that the Thai plan to be evaluated was a long way from full implementation and that there was no hope of looking at the full environment described in it. The report stated that, because the evaluation of the plan was necessarily tied to its implementation, there was no solution to the problem of delay at that time.

We believe that the project was initiated prematurely, which caused project costs to increase substantially.

Project benefits

We were informed by the Director of ARPA that ARPA's recommendations had been implemented by the Thais in three border provinces and that a synthesized plan was being considered by Thai agencies for wider application.

PROGRAM PLANNING AND DIRECTION PROBLEM
RECOGNIZED BUT NOT CORRECTED

Our survey showed that there was early recognition that the Center needed assistance in planning and directing the projects to be undertaken for the Rural Security Systems Program. Rather than increase the in-house management capability of the Center, the decision was made to hire a contractor to assist the Center Director in managing the program. A 5-year program was expected. The original contract covered 21 months at a cost of \$1.5 million and was later increased to cover 33 months at a cost of \$2.4 million.

The proposal submitted by the contractor did not satisfy the Center Director. In a letter to ARPA headquarters dated April 3, 1967, the Center Director stated that the proposal was basically for providing work that would duplicate what other contractors already were doing, rather than for providing the overall planning and technical direction which the program needed. The Director also pointed out that the personnel proposed did not have the necessary qualifications to do the type of work required. He commented that the desire to get the contractor started may have obscured the fundamental reason for the project.

The Director, although expressing reservations about the contractor's proposal noted that "*** with the time that's been lost already we can do little else but accept them, I suppose, or give up."

The Director's reference to lost time reflects what we consider to be a significant deficiency--the failure to provide for the needed program planning and technical direction on a timely basis. We believe that the contractor providing this capability should have participated from the time the program was initiated. As it was, by the time the contractor arrived in Thailand, the direction of the program already had been largely fixed and work already had been started by other contractors on some of the program's major projects, including the Border Control Systems Project and the Village Information System.

The result of this situation was that the contractor did not fulfill the role envisioned for it but, instead, was considered and used as another source of systems analysis capability. We were informed that the contractor had performed effectively in these other areas. The contractor did not, however, supplement the Center's management capabilities and therefore did not act as the Center had intended.

We are hopeful that bringing this matter to DOD's attention will aid in the prevention of similar occurrences in the future. In view of the singleness of the occurrence, we have made no recommendation on the matter.

EVALUATION DIFFICULT BECAUSE
REQUIRED APPRAISALS WERE NOT MADE

Our ability to gage the research effectiveness was hampered by the fact that, to the time of our survey, the Center had not been formally evaluating the performance of contractors, contrary to the instructions of ARPA. On June 20, 1968, the Director of Project AGILE issued a memorandum requiring (1) evaluations of the technical quality of each contractor's product, (2) a statement as to whether the product met the terms of the contract, (3) an indication of whether the product would be useful, and (4) a description of the action taken or planned on the report's results. The Center's implementing instruction was issued on November 28, 1969, after the major projects in the Rural Security Systems Program had been completed or curtailed.

Because of the absence of such appraisals, our evaluation of research effectiveness was based on (1) statements obtained from U.S. Mission officials regarding their opinions of the research done by various contractors and (2) information available in Center, contractor, and Embassy files.

EMBASSY BELIEVES RESEARCH WAS VALUABLE

We requested the Ambassador's Special Assistant for Counterinsurgency to provide us with U.S. Mission evaluations of the work done under two major contracts. We were informed that, under one contract, requesting each Mission element to comment in depth would be unduly burdensome due to the number of contractor reports, research memoranda, and

technical notes--a total of 67. Therefore we received an overall evaluation of the contractor's work from the standpoint of its value to the Special Assistant for Counterinsurgency.

The 67 reports covered four major areas of counterinsurgency-related research: insurgency in South Thailand, surveillance devices and systems, communications, and border security. These projects, which cost the Government over \$5 million, include the Border Control Systems Project discussed in this chapter.

The Special Assistant concluded as follows in his evaluation.

"Overall, the *** work has been pertinent and informative from the SA/CI [Special Assistant for Counterinsurgency] point of view. It represents a real contribution to the body of U.S. knowledge on the insurgency in Thailand which is applicable here and elsewhere. It exceeds the type of reference work available in these subject areas which was available at a comparable stage of development in Vietnam. While some of the reports may not have been of the highest urgency, or outstanding in their literary or scientific quality, in general *** [the contractor's] capability here has been productive and will be difficult to replace in the areas where it is being phased out by ARPA."

Regarding the other contract, which cost in excess of \$1.5 million, the Special Assistant stated that the reports which were of interest to him were a counterinsurgency systems manual series; reports on insurgent psychological operations, insurgent basing and support mechanisms, and counterinsurgency intelligence applications in Northeast Thailand; and several monographs.

The counterinsurgency systems manual is a comprehensive inventory of the various programs by which the United States and Royal Thai Governments are attempting to ensure the internal security of Thailand. The Special Assistant stated that these reports were useful for day-to-day staff work

in the U.S. Mission and that, with the necessary provision for updating and processing information, the manual could form the foundation for an improved U.S. Mission counterinsurgency support information system.

The Special Assistant also stated that:

"The *** [contractor's] staff has represented a considerable professional expertise on insurgency situations and operations throughout Thailand. In the case of their monograph on insurgency in North Thailand, they were in a unique position to respond to Mission requirements for a better understanding of evolving developments in the North and did so in a timely and effective manner. This kind of capability was not otherwise available in the Mission and thus proved to be very useful at a critical time."

CONCLUSION

From the statements of the Ambassador's Special Assistant for Counterinsurgency, it appears that certain of the research projects conducted by the Center made an important contribution to the counterinsurgency effort in Thailand. We believe, however, that some of the research could have been more successful in terms of cost and effectiveness if the Thai Government had participated more fully in the planning of the research and if contractor assistance in planning and directing the Rural Security Systems Program had been provided to the Center on a timely basis.

AGENCY COMMENTS AND OUR EVALUATION

The DOD reply (1) acknowledged that there were serious problems in coordinating research with the Thai Government and (2) agreed that there was a need to ensure application of the results of ARPA research and advised that procedures were being reviewed to bring about improvement in the area.

DOD stated that Thailand had made significant progress after establishment of the Center but still was considered a developing country short of the educational base and

resources necessary to stand alone. ARPA recognizes that U.S. agencies are guests of, and are operating in, a sovereign country having its own culture and national sensitivities to interference in internal affairs by outside influences.

We believe that these are good reasons for involving appropriate elements of foreign governments in the selection and development of projects designed to assist them. The Director of ARPA advised us that he concurred fully that ARPA projects--the results of which were intended for use by foreign governments--should be undertaken only when host governments had (1) expressed agreement on the need for the research and (2) indicated their intention to apply the results. Our survey indicates, however, a need for greater emphasis on the implementation of this concept.

CHAPTER 4

MANAGEMENT OF RESEARCH PROJECTS

DIVISION OF MANAGEMENT RESPONSIBILITIES

Responsibilities for management of ARPA projects conducted in Thailand were divided among the Army Missile Command, ARPA-Washington, and the Center. Their respective duties and responsibilities are discussed below.

Army Missile Command

ARPA does not have a contracting element within its organization; it relies on agencies within the military services, such as the Army Missile Command, to award and manage its contracts on the basis of orders issued by ARPA. The responsibility for procuring services of U.S. contractors to conduct projects in Thailand usually was assigned by ARPA to the Army Missile Command. In addition to performing procurement contracting officer responsibilities, the Missile Command had certain responsibilities relating to ongoing projects. The contracts provided that the Missile Command be responsible for formal acceptance of all technical reports, data, and other material required by the contracts. Contractor performance of technical aspects of these contracts was also the responsibility of the Missile Command.

On the other hand the contracts provided that all technical direction to the contractor be furnished by a duly authorized contracting officer's technical representative. At the time of our survey, ARPA-Washington retained the technical representative's authority for the work in Thailand, except for one contract. The contracts stipulated that no changes which would affect a change in any term, provision, or cost of a contract be made except by a modification executed by the Missile Command. Finally all material intended for release under the contract was to be submitted to the Missile Command for review.

ARPA-Washington and the Center

Management responsibilities of ARPA-Washington and the Center were outlined in a directive published by the Director, Overseas Defense Research, ARPA. This directive states that, once the contract has been signed, ARPA-Washington and Center program managers will collaborate to ensure that the contractors have moved to the field to undertake the work expeditiously. The Center program manager assumed certain responsibilities for the technical direction and administration of the contract. We were advised, however, that the Center did not have the authority to give effective technical direction since final decision authority was retained by ARPA-Washington.

A Center official described the Center's role as that of a technical monitor, which he characterized as being "the eyes and ears of ARPA-Washington." He stated that the Center monitored the day-to-day actions of the contractors and provided information and suggestions to ARPA-Washington, which made the final decisions. If a decision resulted in a contract change, ARPA-Washington informed the Army Missile Command to amend the contract.

Center officials expressed to us dissatisfaction with this arrangement because they believed that they were held responsible for the conduct of the work without having the necessary authority to carry out these responsibilities. Also both the Center and the contractors expressed to us dissatisfaction with the length of time it took to get contracts amended since the approving authority, ARPA-Washington, and the contracting officer were both some 12,000 miles away.

Center officials had asked to be designated as the contracting officer's technical representative, which would give them the authority to direct the contract, but had been unsuccessful until the time of our survey, when the Center was designated as the technical representative on a newly awarded contract.

NEED FOR IMPROVED SURVEILLANCE OF PROJECTS

Our survey indicated a need for improved procedures for appraising contractor performance.

We discussed with Center officials the need to formulate a systematic approach for reviewing contractors' performance that would indicate whether a satisfactory job was being done. These officials agreed that it would be desirable to define and formalize their review procedures. They pointed out that, although this would improve the appraisal process, they had been alert to the effectiveness of contractor performance.

Our survey also showed that, contrary to the instructions of ARPA-Washington, the Center had not been formally evaluating the research results of contractors. The Center offered no explanation for this omission.

Center officials expressed to us their recognition that appraisals of completed projects were desirable. One official characterized the failure to make such appraisals as a weak link in the system. He stated that much effort and direction went into the inception of projects but that, once completed, local appraisals were not made as a matter of course. On the other hand we were informed that evaluations would be difficult to make locally because of the involvement and identification of the Center staff with the projects; in effect, evaluations would require the staff to evaluate their own work.

NEED FOR IMPROVED DOCUMENTATION

Our survey indicated that there was a need for better documentation of the actions taken by ARPA under the contracts. We believe that this is especially necessary due to the frequent turnover of supervisory personnel at the Center.

The contracts that we reviewed required that a schedule of project milestones be submitted by the contractors within 30 days after contract initiation. The actual progress in achieving milestones was to be reported monthly, and deviations from initial objectives and the reasons for the deviations were to be noted.

Our review showed that the Center did not have all the original milestone reports or the management reports which were to describe the progress in meeting the milestones.

For example, a contract awarded in May 1968 stated that the Center was to receive copies of the contractor's quarterly management reports; however, Center officials could locate none of these. It was not until we requested the reports that Center officials followed up and ascertained that they were not receiving the reports due to an error in the distribution list.

We believe that this lack of documentation is especially critical where there are numerous changes in personnel, as at the Center. One contract had three program managers in 18 months. The files should be complete if new personnel are to effectively discharge their responsibilities.

APPROVAL FOR PUBLICATION OF RESEARCH REPORTS

ARPA's contracts for research in Thailand stipulate that, prior to publication, drafts of contractor reports be submitted to the Center, the Army Missile Command, and ARPA-Washington for review and approval.

The Center distributes copies of draft reports to U.S. Mission agencies involved in counterinsurgency activities and requests comments on the contents, classification, and utilization of the reports. If appropriate, copies also are sent to the Thai organizations to obtain the views of the Thai Government.

The contractors consider the comments and make such changes as are considered warranted. The contractors are usually responsive to the suggestions, possibly because of their desire to have the reports published and their awareness that the Center can refuse publication or restrict distribution of reports that do not have its approval.

Some contractors have been critical of this review process; they stated that inordinate lengths of time often were required and that the suggested changes often were not of a substantive nature, but merely editorial. At the time of our survey, the situation was aggravated by the facts that several contractors were phasing out at the same time and the Center, according to a Center official, was being swamped with so many reports that proper review of them on a timely basis was not possible.

We are hopeful that bringing this matter to ARPA's attention will be of assistance in making any improvements that ARPA feels are necessary. In view of the limited information developed, we have made no recommendations on the matter.

CONCLUSION

We concluded that the Center should be given greater responsibility and commensurate authority for the direction of ongoing contractor research in Thailand.

Also the Center's surveillance of research projects needed to be improved. First, in our opinion, there was a need for the Center to develop a systematic approach for gauging the efficiency and effectiveness with which contractors conducted their efforts. Second, there was a need for the Center to follow the instructions of ARPA-Washington regarding review of contractors' research reports for appraising the usefulness of the contractors' work. Third, the Center should have ensured that all significant actions under the contracts were performed as required and were made a matter of record. This should assist in the orderly turnover of management responsibilities from one program manager to another.

AGENCY COMMENTS

DOD concurred that the Center should have greater responsibility and commensurate authority for the direction of ongoing contractor-performed research in Thailand. DOD stated that action had been taken to shift to a better balance between field and ARPA-Washington responsibilities. DOD pointed out that, after the conclusion of our survey, two contracts had been made in Bangkok with the contracting officer, the contracting officers' representative, the contracting officers' technical representative, and the program manager on the scene in Bangkok.

ARPA has instituted procedures to improve methods and approaches to gauging performance of the contractors and is requiring the Center to adhere to existing ARPA procedures for review of the contractor work as reflected in the contractors' reports or other final products, such as hardware prototypes.

ARPA established procedures for the preparation of quarterly project status reports and for the conduct of quarterly program reviews, a primary means by which the Director of the Center is advised periodically of the status of all Center programs. These procedures should improve the deficiencies in documentation.

CHAPTER 5

FACILITIES

EXISTING FACILITIES

At the time of our survey, the Center's activities were being carried out in three Bangkok facilities having a total area of 70,777 square feet. These facilities consisted of (1) the Thai Center building containing 38,389 square feet, (2) three floors of the Sirinee Building, containing 27,222 square feet, and (3) a building housing the electronics laboratory, containing 5,166 square feet. The latter two facilities were leased by the Center, whereas the Thai Center building was constructed with funds contributed by the United States and Thai Governments.

Thai Center building

Construction of the Thai Center building was completed on December 5, 1964, at a total cost of \$227,750, including an United States contribution of \$149,450 and a Thai contribution of \$78,300. The construction costs were shared according to the formula contained in a "Memorandum of Understanding," dated December 27, 1963, between the Thai Government and ARPA.

Pursuant to the agreement the construction site was furnished by the Thais. The agreement provided that ARPA supply laboratory equipment, test instrumentation, and associated expendable supplies and that the Thais supply office furniture and nontechnical equipment. In addition, the Thais agreed to maintain the facility and grounds and to provide utilities and facilities support personnel.

ARPA's construction contribution of \$149,450 was drawn from funds initially appropriated for advanced research projects and subsequently transferred to the military construction appropriation pursuant to authority contained in the Military Construction Act of 1958, approved August 20, 1958 (72 Stat. 659). Section 401, title 4 of this act, provided as follows:

"The Secretary of Defense may establish or develop installations and facilities required for advanced research projects and in connection therewith may acquire, construct, convert, rehabilitate, or install permanent or temporary public works, including land acquisition, site preparation, appurtenances, utilities, and equipment in the total amount of \$50,000,000."

The funds authorized by the above act were appropriated by the Military Construction Appropriation Act of 1959, approved August 28, 1958 (72 Stat. 1096), which specified that the \$50,000,000 be derived by transfer of funds available to the Office of the Secretary of Defense for advanced research projects.

Sirinee Building

Because the Thai Center building could not accommodate all its personnel and Center and contractor personnel, additional space was leased in an office building in downtown Bangkok. The top three floors of the seven-story Sirinee Building were being leased by the Center at the time of our survey at a cost of \$96,240 annually. Two floors were occupied primarily by contractor personnel and one floor primarily by Center personnel.

Electronics laboratory

There were two leases involved for the electronics laboratory--one for a building containing 5,166 square feet and the other for 5.6 acres of unimproved land where the laboratory's antenna field and other facilities were situated. The annual lease costs of \$9,000 and \$6,000 for the building and the unimproved land, respectively, were borne by the Center.

PLANNED FACILITIES

At the time of our survey, construction was under way on an annex to the Thai Center building. The annex, which was to contain 19,000 square feet, was estimated to cost \$486,000.

The Center planned that, when the additional space became available, it would release two of the three floors leased at the Sirinee Building and the facilities at the electronics laboratory.

In contrast to the construction of the basic Thai Center building, the Thais were not sharing the costs of constructing the annex. Records indicated that the Thais had informed ARPA that obtaining funds for the project would be very difficult.

The agreement with the Thais provided that the Center have full use of the annex for 10 years, although, as with the first building, title was to be vested with the Thais. The escalation of construction costs is illustrated by the fact that the original 38,389-square-foot Thai Center building was constructed for \$227,750 whereas the 19,000-square-foot annex was estimated to cost \$486,000.

The funds for constructing the annex were to be funded with monies appropriated for research and transferred to construction pursuant to congressional authorization, as was the case with the original Thai Center building.

The project justification submitted for approval to the Office of the Secretary of Defense (Comptroller) covered construction of a five-story annex building containing 39,200 square feet at an estimated cost of \$600,000. It was stated in the justification that about \$190,000 of costs would be avoided annually by releasing all previously leased space and by eliminating or reducing the costs incurred for transportation, utilities, guards, and janitorial service. The projected cost avoidance would have allowed recovery of the annex construction costs in about 3-1/2 years.

Subsequently, however, the project was rescoped to its present form--a two story building containing 19,000 square feet. As a result it no longer is possible to release all the previously leased space. Center personnel were unable to provide us with a revised calculation on the investment recovery period, although they informed us that one had been prepared.

We therefore prepared a revised estimate of the cost differentials between the old and new arrangements. The estimate indicated that the cost avoidance might range from as much as \$80,000 to \$100,000 annually. Therefore we concluded that the payoff period would be significantly longer than that originally contemplated. Nevertheless the construction costs--without considering interest costs--might be recovered over a 5- or 6-year period.

CONCLUSION

These facilities were constructed in a foreign country to be shared with Thai personnel, and the host government has title to the facilities. Furthermore the entire cost of constructing the annex, almost \$500,000, was to be borne by the United States. In view of these unusual circumstances, we believe that the appropriate congressional committees should have been given advance notification.

We noted in this connection that the House Committee on Appropriations, in its report on the DOD Appropriation Bill of 1970, had indicated its desire that all proposed major improvements to, and construction of, Government facilities funded in any manner with procurement and research, development, test, and evaluation appropriations be identified clearly in budget requests.

AGENCY COMMENTS AND OUR EVALUATION

DOD's reply to our draft report stated that, at the time the facilities were constructed, there was no indication from the Congress that notification was desired. As a result of House Report 91-1163, however, DOD will notify the Congress of similar construction events as they occur.

The DOD reply also pointed out that, although the Thais had not contributed directly to the construction costs of the annex, they had participated by furnishing land for the site, constructing other facilities for the Thai Center use, and acquiring right-of-way for, and constructing, access roads to the site. The total contribution by the Thais was estimated as approaching the U.S. contribution; therefore the building truly was a cooperative endeavor by the two countries.

It should be noted, however, that the land used for the annex was part of the initial building site and that the other Thai contributions, to our knowledge, applied more generally to the site than directly to the annex. The U.S. contribution of about \$500,000, however, was concerned solely with construction of the annex.

In view of DOD's announced plan to notify the Congress of similar construction events in the future, we are making no recommendations on this matter.

CHAPTER 6

SCOPE OF SURVEY

Our survey was limited in scope and duration, being directed at obtaining some insight into the nature of the projects being conducted by the Center.

Our objective was to (1) obtain information on the Center's historical development, organization and staffing, external relations, operating policies and procedures, and future plans and (2) evaluate to the extent possible the research that the Center had conducted or sponsored, with particular reference to the selection, management direction, and utilization of research projects undertaken.

We obtained our information through reviews of contract files and other documentation and through discussions with officials of the Center, the Embassy, and other elements of the U.S. Mission to Thailand.

As part of our survey, we examined into the audit coverage of the Center's activities by DOD internal review groups. DOD informed us that a report was prepared by the Office of the Secretary of Defense (Comptroller) in January 1965. We noted that the Center's operations had changed substantially after that survey had been made.

Our survey was made largely in Bangkok, Thailand, at the offices of the Center and other elements of the U.S. Mission. In addition, information was obtained at ARPA's Washington headquarters and at the U.S. Army Missile Command.

APPENDIXES



UNCLASSIFIED ~~CONFIDENTIAL~~

DIRECTOR OF DEFENSE RESEARCH AND ENGINEERING
WASHINGTON, D. C. 20301

25 SEP 1970

Mr. C. M. Bailey
Director, Defense Division
U. S. General Accounting Office
Washington, D. C. 20548

Dear Mr. Bailey:

This letter provides our comments on the draft of your proposed report to the Congress on the survey of activities of the Research and Development Center-Thailand, Advanced Research Projects Agency (Code 86607). To insure recognition of what we consider to be some fundamental misunderstandings of ARPA's role and activities in the report, I would like to emphasize four major items in the body of this letter. Other comments on the draft and an acknowledgement of beneficial suggestions for improvement are provided on a chapter by chapter basis in the enclosure. [See GAO note, p. 55.]

Our viewpoint on four principal allegations of the GAO analysts are as follows:

- a. The RDC-T and ARPA have expanded the RDC-T activities to engage in projects which involve matters of a non-defense nature and is now primarily supporting U. S. Embassy research requirements.

ARPA has been assigned responsibility for the implementation of the following specific function of the Director of Defense Research and Engineering as documented in DoD Directive 5129.1, paragraph III, 13:

"In coordination with the Assistant Secretary of Defense (International Security Affairs), engage in programs for assistance to friendly countries in military research and development and in the interchange of related scientific and technical information."

and in the Overseas Defense Research (Project AGILE) assignment under DoD Directive 5129.33:

UNCLASSIFIED
~~CONFIDENTIAL~~

Declassified by authority of
C.A. Falkenau, Deputy Comptroller
for Audit Reports, Office of
Assistant Secretary of Defense
August 25, 1971.
H.L. Dehnbostel, Assistant Director
Defense Division, General Accounting Office

~~CONFIDENTIAL~~
UNCLASSIFIED

'Research and Development supporting the DoD's operations in remote areas, associated with the problems of actual or potential limited or subversive wars involving allied or friendly nations in such areas.'

The GAO report tracing the evolution of the RDC-T program from 1961 to the present date reflects that the program has changed from one which involved development and testing of military equipment and materiel to more complex research projects to identify basic elements of insurgency including means to counter early insurgent operations. It should be noted that some aspects of the Thailand Rural Security Research Program were dropped by ARPA when it became apparent that these portions were not primarily DoD oriented.) Within the assigned responsibilities of assisting the Thai in military RDT&E and undertaking military research on limited and subversive warfare, ARPA has measured each project undertaken against the legitimate interest of DoD relevance. Since the passage of Section 203 of the Defense Procurement Authorization Act, 1970, each project undertaken by ARPA has documented rationale supporting DoD and ARPA relevance.

The GAO analysts apparently confuse the responsibilities of the Embassy in its function as an arm of the Foreign Service with its functions as the coordinating staff of the Chief of the U. S. Diplomatic Mission in Thailand. Within the Embassy a large part of the effort is devoted to the development, coordination and evaluation of the substantive programs of the U. S. military and civilian agencies operating in Thailand. It is in this latter role that ARPA has been of assistance to the Embassy when proposed work is clearly relevant to the DoD and ARPA mission. All ARPA research in Thailand has been properly oriented to the spectrum of counterinsurgency requirements and specified roles of the Department of Defense. ARPA appreciates and has used the U. S. Mission sponsored Research Council, with membership from all major military and civil U. S. agencies, as an agency for coordinating actions which ARPA takes in the selection of research projects. Additional coordination is obtained from the Thai Government through the MRDC, CINCPAC for military operational implications, OASD (International Security Affairs) and as required, the Department of State. In brief, ARPA of course works in coordination with Embassy, but not for it.

2

UNCLASSIFIED

Declassified by authority of
C.A. Falkenau, Deputy Comptroller
for Audit Reports, Office of
Assistant Secretary of Defense
August 25, 1971
H L. Dehnbostel, Assistant Director
Defense Division, General Accounting Office

~~CONFIDENTIAL~~
UNCLASSIFIED

- b. Although construction of an annex to the MRDC building in Bangkok was in compliance with the authorizing and appropriating legislation, ARPA should have obtained Congressional approval. The Thai are not contributing to the cost of the new construction.

As indicated in the report, the construction of facilities in Thailand was in complete compliance with authorizing and appropriating legislation. There was not even an indication from Congress, at that time, that notification was desired. However, as a result of the recent House Report No. 91-1163, dated June 8, 1970, the Department of Defense will notify Congress of similar construction events as they occur.

While it is true that the Thai are not contributing directly to the construction costs of this annex, they are participating by furnishing land for the site, constructing other facilities for MRDC use, and are acquiring right-of-way and constructing access roads to the site. This supporting expense, together with their initial construction costs, has been estimated as approaching the U.S. contribution so that the MRDC building is truly a cooperative endeavor by the two countries.

- c. There is inadequate coordination of research with the Thai Government [See GAO note, p. 55.]

We concur if "is inadequate" is replaced by "are serious problems in." The Thai have made significant progress during the past nine years but as yet have to be considered as a developing country still short of the educational base and resources necessary to stand alone. The RDC-T program has been adjusted to Thai progress and education in R&D matters. For example, early U.S./Thai cooperative efforts were primarily related to such projects as mobility and evaluation of equipment. After an initial period devoted to cooperative ventures of this nature, the research program progressed to more sophisticated research on the nature of insurgency. ARPA recognizes, and the Embassy emphasizes, the fact that we are guests of and operating in a sovereign country with its own culture and its own national sensitivities to interference in internal affairs by outside influences. The Royal Thai Government has been very cooperative in approving, and in most cases contributing, support and providing source material for research projects which are

3
UNCLASSIFIED
~~CONFIDENTIAL~~

Declassified by authority of
C.A. Falkenau, Deputy Comptroller
for Audit Reports, Office of
Assistant Secretary of Defense
August 25, 1971.
H.L. Dehnbostel, Assistant Director
Defense Division, General Accounting Office

APPENDIX I

~~CONFIDENTIAL~~
UNCLASSIFIED

of interest to the U. S. However, this does not mean that there will always be complete acceptance or even effective participation by the Thai in those joint research projects whose thrust may appear to them to be mainly directed to U. S. military concerns.

[See GAO note, p. 55.]

4

~~CONFIDENTIAL~~
UNCLASSIFIED

Declassified by authority of
C.A. Falkenau, Deputy Comptroller
for Audit Reports, Office of
Assistant Secretary of Defense
August 25, 1971.
H.L. Dehnhostel, Assistant Director
Defense Division, General Accounting Office

~~CONFIDENTIAL~~
UNCLASSIFIED

[See GAO note, p. 55.]

I trust our comments will be helpful in your completion of the report. I believe, with changes accounting for these comments, that the report will be both correct and useful to those concerned with ARPA activities. Should you have questions on the material contained in this reply, I suggest the Director of ARPA be contacted directly for clarification.

[See GAO note, p. 55.]

Sincerely yours,



for J. S. Foster, Jr.

GAO note: Deleted comments pertain to material presented in the draft report which has been revised or which has not been included in the final report. The enclosure has not been included; however, pertinent parts are commented upon in the body of the report.

Declassified by authority of
C.A. Falkenau, Deputy Comptroller
for Audit Reports, Office of
Assistant Secretary of Defense
August 25, 1971.
H.L. Dehnbostel, Assistant Director
Defense Division, General Accounting Office

5

UNCLASSIFIED

~~CONFIDENTIAL~~

PRINCIPAL OFFICIALS OF
 THE DEPARTMENT OF DEFENSE
 RESPONSIBLE FOR ADMINISTRATION
 OF ACTIVITIES DISCUSSED IN THIS REPORT

<u>Tenure of office</u>	
<u>From</u>	<u>To</u>

OFFICE OF DEFENSE RESEARCH AND ENGINEERING

DIRECTOR:

Dr. John S. Foster, Jr.	Oct. 1965	Present
-------------------------	-----------	---------

DIRECTOR, ADVANCED RESEARCH
 PROJECTS AGENCY:

Dr. Stephen J. Lukasik	Apr. 1971	Present
Dr. Eberhardt Rechtin	Nov. 1967	Dec. 1970
Dr. Charles M. Herzfeld	June 1965	May 1967

DIRECTOR, OVERSEAS DEFENSE RE-
 SEARCH:

Mr. Donald R. Cotter	Feb. 1970	Present
Mr. Seymour J. Deitchman	Nov. 1966	Oct. 1969
Maj. Gen. Charles J. Timmes	Sept. 1965	Nov. 1966

DIRECTOR, RESEARCH AND
 DEVELOPMENT CENTER-THAILAND:

Dr. Robert N. Schwartz	Apr. 1970	Present
Dr. Philip Worchel	June 1968	July 1970
Dr. Richard D. Holbrook	July 1965	June 1968

Copies of this report are available from the U. S. General Accounting Office, Room 6417, 441 G Street, N W., Washington, D.C., 20548.

Copies are provided without charge to Members of Congress, congressional committee staff members, Government officials, members of the press, college libraries, faculty members and students. The price to the general public is \$1.00 a copy. Orders should be accompanied by cash or check.