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Research and Development of Aptitude Testing

(Contract AID/csd-798)

Semi-Annual Progress Report of Activities

Covering the Period

1 December 1966 - 31 May 1967

I: PROJECT OBJECTIVES

This project is the fourth phase of a long-range program of research and development that was begun six years ago by the Agency for International Development and the American Institutes for Research. Its aim is to assist the developing countries in the introduction of effective selection and guidance procedures so as to reduce wastage in education and training, and speed the development of productive human resources.

The initial three phases were limited to the Africa Region. The first phase consisted of experimental research in Nigeria which demonstrated the feasibility of adapting modern testing techniques to a different cultural setting, and resulted in a set of indigenous aptitude tests that greatly increased the accuracy of educational and occupational selection of Nigerian youth. The second phase was the development in Nigeria of the specialists and the institutional framework necessary to apply these techniques to practical selection problems in education, in government, and in the private sector. The third phase was the generalization of the Nigerian experience to other African countries; and here, as in Nigeria, the consequent improvement in human resource development programs has been substantial.

The fourth phase -- i.e., the current activity -- is a first step toward the further extension of the program to developing countries outside Africa. Its objectives are to translate the new techniques and insights developed in Africa into a more general form suitable for use in also the other Regions; and to begin, in a modest way, the lengthy process of professional and institutional development that will be necessary to create in these Regions the centers of excellence in testing that are required. Just as the Bureau for Africa six years ago provided the "seed money" that started the program in African countries, the present TCR project is trying to stimulate the growth of professional testing worldwide.

The contract was signed on 27 May 1965. It called for the provision of 58 man-months of professional services, to be provided within the total term of the contract, which was set at 20 months over-all.

II: RECAPITULATION OF EARLIER REPORTS

Report 1: 1 June 1965 - 21 February 1966

The first project report was written at the end of a reconnaissance visit to seven countries outside the Africa Region that had expressed interest in participating in a project directed at the basic objectives stated above. It presented data relevant to the suitability of each country as a potential project site, and confirmed the enthusiasm of all seven countries for a joint effort in testing research. But it pointed out also that none of the countries was prepared to accept the workplan that had been written into the contract, and that the existing workplan would have to be changed before the research could proceed.

The reasons for this attitude on the part of the host governments were spelled out in detail because they seemed instructive:

When the project was planned, considerable thought was given by both AID and AIR to the specific ways in which a limited amount of seed money could best be invested. And the initial decision, based largely on the African experience, was to invest in a research-oriented activity to be carried out in three steps, as follows:

- 1) Locate in the Regions outside Africa three countries that would constitute as excellent a laboratory for testing research as was Nigeria for the earlier phases;
- 2) Replicate in these three countries the experimentation and data collection that had led to effective techniques in the African studies; and
- 3) Collate the findings from these separate locations to produce a general handbook on overseas testing that would describe the technical developments and the institution building required to introduce effective testing in various cultural settings.

It was assumed that providing detailed information of the "how-to-do-it yourself" type would provide a head start for testing activities in many or most of the countries with which the Agency has technical assistance agreements. And this assumption was reflected in the workplan prepared.

When the prospective host governments were brought into the discussion, however, it was found that

- 1) The needs and the local recognition of needs for improvements in testing were far greater in these countries than had been the case in Africa six years ago, so that there was not the same need for an initial period of pre-commitment trials and demonstration, and so that
- 2) Their interest lay not in doing generalizeable research that might some day lead to action programs but in starting on operational research and training and test construction and institutional development right now.

The local officials could care less about the Handbook our project was to produce. They wanted tangible improvements in their own testing operations in the shortest possible time.

Thus, the report concluded with two basic questions to which answers had to be found. How should the workplan be revised to accommodate both the host countries' immediate needs and the Agency's long-range objectives? Which of the seven countries that had specifically and urgently asked to be included should be selected?

Report 2: 22 February - 31 August 1966

The second report was written after the above questions had been answered and the implementation of the revised workplan had been begun. The following major developments were reported:

New Project Objectives. In accordance with the findings of the reconnaissance visits, the workplan was revised in a number of important respects. The new plan was

- 1) To establish project centers in three countries, as originally intended; but
- 2) To begin the project in each of these locations with the creation of an institutional framework that would not only house the activities of the present project but also develop into a center for testing services that would continue after the project has ended;
- 3) To carry out, within this institutional framework, a program of research and development that would (as the first product of the activity) provide materials responsive to the host country's most critical testing needs;

- 4) To utilize the data generated from these practical projects as the basis for a handbook on overseas testing to be published (as a second product) by the time the project has ended;
- 5) To carry forward the training, planning, and organizational development that are necessary to provide (as a third product) a solid foundation for the future development of the institutions that hosted the study; and
- 6) To promote the utilization of these institutions as regional resources by accommodating third-country trainees, sponsoring region-wide conferences, and similar programs.

This, it was felt, was the approach most consistent with the fundamental aims of the activity; and the above steps constituted a new workplan (which is still the workplan today).

One characteristic of this revised scope of work, although implicit in this summary, was specifically stressed in the report. The requirement for institutional development was limited to a meaningful beginning, since the total task of developing financially and professionally self-sufficient testing centers will take far longer than the two years programmed as the contribution of TCR. To complete this task, further support within the respective CAPs or from other external sources will be essential; and

- 7) To assist the host countries in the development of meaningful plans and proposals for continued testing support

therefore became another important project objective.

New Contract Provisions. Changing the scope of work from the conduct of experimental research to research plus institutional development naturally required a corresponding change in the programming of the level of effort to be provided. It was decided, therefore, to extend the contract from its initial length of twenty months to a new total of thirty-six months and to increase the number of specialists assigned to the project from one to two per field site. An amendment incorporating these changes was executed on 23 June 1966.

Selection of Sites. For a variety of reasons, some of them explained in the report, the three countries selected as project sites were Brazil, Thailand, and South Korea.

Progress on Implementation. Because of the extensive time required to effect the above changes in the project design -- the development of the new scope of work alone required four months -- the field work had barely begun at the time this report was submitted. Most of the report therefore was devoted to accomplishments in the home office in making the necessary preparations.

The major home-office activities included

- 1) The development of new plans and budgets , which included a July planning trip to Thailand and South Korea;
- 2) The completion of a first draft of the Handbook , based on African data , for the guidance of the field staff;
- 3) The recruitment and orientation of field technicians;
- 4) The arrangements for travel , shipping , procurement , and other logistic needs; and
- 5) The provision of professional guidance to field sites through the interchange of comprehensive weekly communications .

The status at the three field sites was that

In Brazil , the Chief of Party had been at post three months , and had devoted nearly all of this time to the arrangements for counterparts and logistic support prerequisite to productive research . The stumbling block was that the arrangements made during the reconnaissance visits had been informal and verbal , and the lack of a written project agreement immobilized all of the parties concerned .

In Thailand , a Pro-Ag was being developed by USOM and the RTG , and the beginning of the project had to await the completion of this documentation . The prospective Chief of Party was standing by in the home office pending authorization to proceed to post .

In Korea , the technician who was to serve as the project associate had been at post for only one week , and a Chief of Party had not yet been selected . Though letters of understanding had been exchanged by the MOE and the USOM , formal arrangements were deferred pending the arrival of the senior technician .

Thus , progress was being made on the legal and logistic preparations , but not yet on the substance of the research .

Report 3: 1 September-30 November 1966

Because the first report had been delayed until the completion of the reconnaissance visits and the second until the field sites had been selected ,

the schedule for the submittal of progress reports had drifted three months out of phase. It was decided, therefore, to get back on schedule by writing the third report to cover only the latter half of the six-month reporting period on which the earlier reports had encroached.

The report concentrated on developments at the field sites, since this work had barely begun at the time the preceding report was submitted. Each Chief of Party wrote a section of this report, describing events in his country from the time the project began, and outlining the important next steps to be completed.

The status reported may be summarized as follows, in tabular form:

	<u>Brazil</u>	<u>Thailand</u>	<u>Korea</u>
U.S. Technicians			
--Chief of Party	At post 6 mos.	At post 3 mos.	Due in 3 wks.
--Associate	At post 4 mos.	Due in 1 mo.	At post 3 mos.
Organization			
--Pro-Ag	In Draft	Executed	MOE Letter
--Instit. Home	Vargas Found.	MOE	None
--Advisory Comm.	None	None	None
--Counterparts	Part-Time	Two	None
--Clerical	Part-Time	None	USOM Pool
Local Support			
--Offices	Vargas Found.	Coll. of Ed.	USOM
--Transport	USOM	Veh. Shipped	USOM
--Direct Costs	In Part	MOE	USOM
Program			
--Setting Priorities	Not Yet	Only First	Not Yet
--Research Activities	Survey	Translations	Lit. Review
Key Need	Pro-Ag	Clerical	Chief-of-Party

At the home office, the main accomplishment (apart from the continuing backstopping and guidance operations) was the development of specific plans for the conference of Chiefs of Parties and senior counterparts, to be held at the site of the AID-AIR project in Lagos. A detailed list of preparatory field activities and possible discussion topics was prepared and circularized for comment as a basis for the completion of the final agenda.

III: PURPOSE OF THIS REPORT

This report summarizes progress during the period 1 December 1966-31 May 1967. It describes activities in the home office and at each of the three field sites, and includes a special report of the conference held in Lagos for purposes of planning and coordination.

As of the writing of this report, one year of the contract remains.

IV: PROGRESS

A: Accomplishments In The Home Office

Home office activities during this period were directed at five major objectives, as follows:

1) Completion of Assignment/Orientation of Field Staff. The processing of the last two members of the field staff was completed at the beginning of this period, and both quickly assumed their duties at post. Dr. Dan H. Jones arrived in Seoul on 21 December to take over as Chief of Party, and Dr. Joel B. Aronson arrived in Bangkok on 6 January to assist Dr. Hill.

2) Completion of Lagos Conference Plans. On the basis of the comments received from the field in response to the draft agenda described in the preceding report, a revised agenda was prepared, and distributed to all parties concerned. Included with this agenda were detailed specifications of the data and information to be assembled in advance of the conference, and of the many other preparatory activities to be accomplished at each of the field sites. The intent was to promote highly specific and problem-oriented discussions, and, as the conference results showed, this aim was achieved.

In December, the Project Director had occasion to visit Lagos (in connection with other projects), and used this opportunity to help plan the conference logistics. The AIR team in Lagos gave generously of their time, then and subsequently, in organizing the conference, making many of the necessary arrangements in their own off-duty hours, and persuading their wives to pitch in as volunteers. A continuing exchange of correspondence between the Lagos team and the home office had to be maintained throughout the preparatory phase.

3) Provision of Professional Guidance and Supervision. The system of routine weekly reports from the field that had been established at the beginning of the project was maintained as the primary vehicle for the exchange of ideas and suggestions. Each week the Project Director writes the Chiefs of Party individually, giving them home office comments on the items discussed in their weekly reports; and, in addition, prepares a summary of accomplishments everywhere for distribution to all sites to keep all members of the team up to date.

On 1 April, the Project Director accompanied the TCR Project Monitor to Brazil for consultations with GOB and USAID officials on specific project plans and needed next steps. This trip (arranged as a stop-over en route to the Lagos meetings) resulted in a number of decisions on research priorities, and in a schedule for experimental tryouts, to be accomplished with the active assistance of home office personnel. Specifically, it was agreed that the home office would provide the rapid printing services that are not available in Brazil to support large-scale tryouts in June, and that the Project Director would return in July to participate in the analysis and revision of the experimental test forms. The important issue of project continuity beyond the TCR phase was also discussed, though inconclusively. USAID personnel indicated that they would consider forward programming explicitly in the preparation of the FY 69 CAP, and that they would make appropriate decisions then.

During the period 6-13 April, the Lagos Conference provided a natural opportunity for face-to-face discussions of each project with the Chief of Party and senior counterpart, and such project conferences were held in the evenings, after the regular sessions. Dr. Brent Baxter, AIR Vice-President and Director of Research, who attended the meeting, also participated in these discussions.

On 17 April, the Project Director visited Thailand on other business, and used this opportunity to spend a few hours with local officials and with staff of the Testing Center. This made it possible to look at ongoing operations first-hand, and to meet the new staff assigned since the last Bangkok trip.

Thus, the degree of personal guidance provided during this period was unusually high. But not enough time was spent at any one site to explore issues in depth, and it is planned to catch up on the more formal "executive visits" the contract requires during the next six months.

4) Liaison With AID and Host Countries. Home office staff continued to maintain close liaison with the TCR Project Monitor throughout this period via telephone and reasonably frequent meetings at AID. All administrative problems that arose during this period were quickly resolved.

In addition, home office staff had the opportunity for extensive discussions with key local officials from all three countries, who visited Pittsburgh during the last few months. In March, we were visited by Director-General Bhunthin of Thailand, who is the senior official responsible for the AID-AIR testing project in the Thai Ministry of Education. In April, we were visited by Professor Chung Bom Mo of Seoul National University, who is Director of the AID-AIR testing project in South Korea. In May, we were visited by Professor Luiz de Mattos of Brazil, who is establishing the new Human Resources Development Center in the Vargas Foundation that may become the Testing Center's permanent home. Next month, we are to be visited by Dona Ruth Scheeffler, the Director of the Brazil Center, and another senior member of the Center's professional staff.

These informal discussions outside the work environment of these busy officials have been most helpful.

5) Provision of Administrative/Logistic Support. Backstopping activities have continued, particularly in the procurement and shipping of commodities to each project site. These have been time-consuming operations, but, with one exception, routine. The one non-routine need arose in the case of Thailand where the Dollar/Baht distribution of costs negotiated in the local Pro-Ag differed from that written into the contract, so that special authorization to shift funds prior to purchase had to be obtained.

One new type of backstopping activity has been addressed to the participant training component that is being funded by the Missions in support of the contract at each project site. Home office staff have provided the field teams with information about suitable U.S. training institutions, and have coordinated the preliminary arrangements for the trainees.

A second new activity has grown out of the fast-response printing needs of Brazil. The AIR Graphic Arts Department has agreed to give rush priority to materials for printing received from Brazil; and the one set of materials that has so far come in was completed and on its way back within 24 hours of the time of its receipt by the backstopping staff.

B: Accomplishments Of The Lagos Conference

The project coordination conference scheduled for the half-way mark of the field phase was held in Lagos 7-13 April 1967. All participants and observers agreed that it was exceptionally effective, and one of the more important contributions of this project to date.

Because of the widespread interest generated by this conference, we have decided to present its results in a separate report suitable for

outside distribution. This separate report is being submitted to AID as a supplement to this progress report.

C: Accomplishments In Brazil

Project Agreement. The most crucial need cited in the last progress report was for a formal agreement covering this project between USAID/B and the Government of Brazil. Negotiation of an appropriate agreement was completed in early December, and a formal Pro-Ag was executed on 22 December 1966. The budget for local costs, however, was not approved until 9 March.

According to the terms of this agreement,

The Getulio Vargas Foundation is to provide

- 1) 40 man-months of services of mutually acceptable counterpart personnel,
- 2) Not less than 40 man-months of secretarial and clerical services,
- 3) Sufficient office space,
- 4) Adequate office furnishings,
- 5) Expendable office supplies,
- 6) Local travel and subsistence for Brazilian staff,
- 7) At least two mutually agreed upon participant trainees,
- 8) Computer time for data processing, and
- 9) Travel costs of a senior Brazilian staff member to the Lagos meeting.

The Agency for International Development, via the AIR Contract, is to provide

- 1) Two U.S. psychologists to work on the project full-time,

- 2) Programming costs of developing data processing routines, and
- 3) Test-related printing costs.

USAID/Brazil is to provide

- 1) A typewriter and an automatic calculator,
- 2) Transportation and subsistence for local travel of U.S. personnel, and
- 3) Master's Degree training for at least two participants, subject to the availability of funds.

This agreement seemed to represent a workable arrangement to all parties concerned, and to have removed the last of the road-blocks to the initiation of productive research.

Counterparts. The last progress report detailed the difficulties of finding any professional in Brazil who can afford to work at only a single job full-time. Holding three to four part-time jobs concurrently is the accepted norm. Accordingly, it was planned to staff up with a number of part-time counterparts, but even this required the approval of their primary employers, who would have to "second" them officially to the Testing Center.

As soon as the Pro-Ag was signed, the President of the Vargas Foundation wrote to the President of Petrobras (Brazil's largest industrial concern) asking him to provide the services of Sra. Fany Tchaicovsky as a counterpart to the AIR team. Sra. Tchaicovsky is one of Brazil's leading specialists in test construction and has had extensive practical experience, particularly in the area of occupational tests; and was therefore considered an excellent choice by the AIR team. Permission was granted, and Sra. Tchaicovsky joined the staff on 12 February on a temporary basis half-time. She represented Brazil at the Lagos Conference, and impressed everyone with her capability and energy, and enthusiasm for the project objectives. Her active participation in the project work has been one of the main reasons for the excellent progress made during the past three months in Brazil.

A second senior counterpart, to take responsibility for scholastic testing, was seconded to the project on 7 March by the School of Public Administration. She was to have spent two days per week on the project but found that she could not devote this much time, and, two months later, resigned. She was recently replaced by Sra. Lucia Montelro Fernandes, who is now in charge of the school testing operations.

Since February, the project has had the services also of a number of more junior "technical assistants" and of (unpaid) "trainees." Currently, there are four junior staff members assigned to the project, and two of these are being considered as prospective participant trainees.

The availability of these personnel has made possible fairly rapid progress on the development of tests and the conduct of testing sessions. For the immediate future, the staffing picture looks reasonably bright.

Research Priorities. The major areas in which research will be conducted have been spelled out. The highest priorities are being given to the development of a

- 1) Technical Aptitude Battery, to be developed in cooperation with SENAI, the national apprenticeship program, and a
- 2) Secondary School Admissions Test, to be developed in cooperation with the Secretariat of Education of Guanabara State.

Work on these programs was begun as soon as counterparts were assigned, and both are now at the tryout stage.

Additional testing projects that have been actively discussed as future research possibilities include the development of tests for SENAC, the national commercial skills training program; the Department of Industrial Education, as part of the intensive industrial manpower development program that now encompasses 70,000 trainees; the Cruzada ABC, in support of their literacy training operations; the primary education program, in cooperation with the USAID contract team from the State University of New York; and a variety of other organizations. But the above two high priority projects will be completed first.

Test Construction. For tryout purposes, a Technical Aptitude Battery that contains more tests than will be used operationally was developed. This will permit the comparative evaluation of various approaches to the measurement of the same set of skills, so that the approaches most effective in Brazil can be selected for operational use.

The tryout version of the Technical Aptitude Battery includes the following tests:

- | | |
|--------------------------|--|
| Mechanical Information | an adapted version of <u>I-D</u> Test #7 |
| Mechanical Comprehension | the Bennett test of the U.S. |
| Mechanical Reasoning | a DAT test of the U.S. |

Boxes	an adapted version of <u>I-D</u> Test #9
Cubes	a Brazilian test
Three-dimensional Visualization	a GATB test of the U.S.
Figures	an adapted version of <u>I-D</u> Test #10
Patterns	a modified FACT test of the U.S.
Two-dimensional Visualization	a GATB test of the U.S.

A tryout version of a Scholastic Aptitude Battery was also developed. This battery includes the following tests:

Similarities	an adapted version of <u>I-D</u> Test #1
Verbal Analogies	an adapted version of <u>I-D</u> Test #2
Reading A	an adapted version of <u>I-D</u> Test #4
Reading B	a newly developed test
Memory	an adapted version of <u>I-D</u> Test #6
Arithmetic	an adapted version of <u>I-D</u> Test #14
Vocabulary	a newly developed test

Thus, the tryout tests over-all include adapted versions of eight I-D tests; local versions of five standard U.S. tests; one Brazilian test; and two tests newly constructed.

Tryouts. The first formal tryouts were begun late in May when the Technical Aptitude Battery was administered to students at one of the SENAI training centers. Trainees in four curricula -- electricity, woodworking, mechanics, and sheet-metal work -- were tested.

The first tryout of the Scholastic Aptitude Battery is scheduled for early June. It will be conducted at one of the primary schools of the Guanabara school system with a sample of about 100 fifth and sixth graders.

The AIR team has also been consulting with staff of the Catholic University on follow-up studies of a popular test (Raven's Matrices) that

was administered several years ago to 4000 primary school students in Guanabara. A study to determine the accuracy of this test as a predictor of subsequent school performance would generate valuable supplemental data. This research, if accomplished, would be carried out in cooperation with the USAID contract team from the State University of New York.

Training. Two types of training activities have been carried out. One has been the continuing on-the-job training of the technical assistants assigned to the research. The second has been the conduct of special sessions on the administration of the tryout tests, which were held for the junior trainees who will be responsible for the data collection.

Formal participant training is to begin early in 1968. Two suitable participant trainees have been identified, and the necessary arrangements are being made with USAID, the Vargas Foundation, and stateside institutions.

Lagos Conference. Because of the delays in the approval of the Testing Center's local budget, there was considerable doubt until virtually the last moment as to whether or not the travel to Lagos of the senior counterpart would be funded. Eventually, however, the necessary arrangements were made, and Sra. Fany Tchaicovsky accompanied Dr. Angell as the representative of Brazil.

Considerable time was spent in advance of the meeting on the specific preparatory activities that had been requested. Soon after the meeting, a briefing session was held to bring local staff up to date on the Conference accomplishments and implications.

Continuing Support. It is the firm intention of the Government of Brazil to develop the Testing Center into a permanent institution with broad capabilities in the measurement field. In all probability, it will be one of the organizations that will form the nucleus of the new Human Resources Development Center.

To carry forward this institutional development, the Government of Brazil will need the continued support of the two agencies -- AID and the Ford Foundation -- that made possible the establishment of the Testing Center. Recent decisions indicate that the Ford contribution will consist mainly of equipment and short-term consultants; and that the GOB will continue to look to AID for resident U.S. technicians.

The feasibility of continued support was discussed with the USAID Program Office briefly during the visit of the AIR Project Director and the TCR Project Monitor, and was raised again in a follow-up airgram from AID/W to USAID/Brazil. The Chief of Party does not know whether a decision has yet been made, but he has not been privy to the internal USAID

discussions. It would seem desirable to give the Brazilian authorities some preliminary indications of the possibilities fairly soon, so that they can base the institutional planning in which they are currently engaged on realistic expectations.

D: Accomplishments In Korea

Organization. At the time of the last report, the project was still housed at USOM, with no official indigenous affiliation. Organizing the project formally was the highest priority need, and activities in this direction were to be begun as soon as the Chief of Party arrived.

The Chief of Party arrived on 21 December 1966, and preliminary discussions began. These discussions led to a series of formal planning sessions, which began in mid-February at an inter-Ministerial level. The Ministries of Education, Government Affairs, National Defense, and Labor Affairs, and the Economic Planning Board all participated actively in the discussions.

The key issues at these meetings were (1) the Ministry to be given substantive responsibility for the project, (2) the amount of the Government's local currency contribution, and (3) the physical location of the research staff.

On the issue of which Ministry should take official responsibility for the project, all of the participating Ministries pointed to their own needs for this type of work, and each offered to serve as the official sponsor. After much discussion, it was decided to house the project in the Ministry of Education. The scope of work, however, would encompass the needs of all of the Ministries, and representatives of the other Ministries would serve as an Advisory Council. Thus, the project does have the multi-sector charter that was envisaged, and the representatives of all of the Ministries agreed to cooperate with the research.

On the issue of local funding, a number of Ministries indicated that they already had budgetary allocations for testing, and that they could make huge sums (up to 100 million Won) available as the ROK contribution. The ruling of the Economic Planning Board, however, was that this is a small project of an experimental nature with only modest U.S. dollar support, and that the ROK contribution should be scaled down proportionately to 2 million Won. This sum (\$7400) was to be provided by the Ministry of Education.

On the issue of project location, it was decided to house the activity within the Central Education Research Institute (CERI). The Ministry of Education suggested that the project be institutionalized formally as the Manpower Research and Development Division of CERI.

This decision-making process was completed in early March. The next step was to implement the decisions by actually obtaining the funds and facilities and qualified counterpart personnel.

Local Support. The request for the 2 million Won agreed to at the planning sessions was duly processed, but one month later it was officially rejected, and, in mid-May, a decision was made. This was to allocate to the project half the amount that had been requested -- a total of 1 million Won.

This amount of money was not adequate to cover even the minimum items of local support that were required. It could be used to pay counterpart and clerical salaries through December 1967, but would not cover local salaries for the remainder of the project nor any of the other items (e.g., counterpart travel, office equipment, etc.) that were to be an ROK contribution.

Accordingly, it was decided to take two kinds of action. The first was to submit a request for additional funds under the Government's system of supplemental budget allocations. The second was to provide a number of the immediate necessities as items of USOM support, and USOM has been most generous. They have issued blanket in-country travel orders for the Chief of Party and the senior Korean counterpart; prepared a PIO/C for obtaining a variety of audio-visual, instructional, and demonstration materials; assigned a Korean administrative assistant to the project to help with translations and related tasks; and agreed to supplement the limited office furnishings that can be provided by the Ministry of Education. In addition, USOM has tentatively allocated three participant training slots each for FY 68 and FY 69.

In this manner, basic support items have been provided. But efforts to develop a broader base of direct Government support will have to be continued, particularly once the project can point to a number of tangible contributions.

Facilities. The move to CERI had naturally to be delayed while the decisions on local funding were pending. Office space in the CERI building has been identified, however, and agreement has been reached on a number of minor structural modifications that will be required. It is hoped that the project team will be able to occupy its permanent quarters sometime next month.

Counterparts. As noted in earlier reports, the availability of well-qualified professional counterparts is one of the great strengths of Korea. Excellent counterpart arrangements are being made.

The senior counterpart will be Professor Chung Bom Mo of Seoul National University, who has been characterized in earlier reports as "Mr. Testing" of Korea. It is anticipated that Professor Chung will be named as the project director, and we are delighted by the prospects of a close working relationship with this outstanding researcher.

We hope also for the active participation of Dr. Paik Hyun Ki, the Director of CERI. Dr. Paik has taken the lead in creating this unique research institution, and should be invaluable to the institution-building aspects of the work.

In addition, the Ministry of Education has agreed to appoint three other professional counterparts. One will be at the senior level, and two will be more junior team members. It is anticipated that they will join the staff sometime next month.

The Ministry of Labor Affairs also has provided two counterparts for the research. These individuals joined the staff in early May, and have been working actively since on a special testing project being carried out for the Ministry of Labor Affairs.

The ROK Army Human Relations Research Committee, moreover, has also agreed to appoint two counterparts to the project team. These are two senior professionals from the Army's Psychological Research Branch, and they are scheduled to join the staff sometime early next month.

Including the administrative assistant provided by USOM, therefore, the professional counterpart staff will consist of a ten-man team drawn from the education, labor, and military sectors. This constitutes truly outstanding local support.

Research Priorities. Even before the project was formally organized, requests for testing assistance were received from all sectors. Because of the importance and inherent interest of all of these requests, it has been difficult to establish clear-cut priorities, and, in view of the excellent counterpart arrangements, it may in fact be possible to make progress on a number of quite different fronts all at the same time.

The projects on which some work has already been begun include

- 1) The development of aptitude tests for the selection of college students for the science fields. This was identified by the Ministry of Education as one of the country's critical needs. Plans for the evaluation of the existing examinations have already been completed, and Dr. Jones has been appointed officially as an advisor to the Entrance Examinations Committee of the Science Council.

2) The development of aptitude tests in the vocational area to encompass a wide variety of occupations. This was requested by both the Ministry of Labor Affairs and the Ministry of Defense.

One opportunity for beginning this research while at the same time meeting a practical need arose in connection with an International Skills Contest, for which top level craftsmen in 15 trades are to be selected. A battery of eight I-D aptitude tests was adapted for use in this project, and the initial administrations of these tests and a preliminary analysis of the results have been completed.

A second opportunity in this area grew out of the request by the ROK Army for the development of selection tests for their various Branch Training Schools. These schools offer training in mechanics, clerical work, communications, and other specialized fields. Work on suitable tests will be begun when the counterparts provided by the Army join the staff next month.

A third opportunity was afforded by the request from the Chonju Technical High School for the development of aptitude tests to be used as part of the entrance examination. The Principal of the school offered his entire student body (1500 individuals) for purposes of research and experimentation, and arrangements for trial testing in this school and in the Pusa Technical High School have been made.

3) The development of aptitude tests and the conduct of supplemental research related to the Army's program for the re-entry of veterans of Vietnam. As a minimum effort, the AIR team would be invited to serve as advisors to the Army's in-house research. More desirable from the Army's point of view would be the inclusion of some of these projects within the activities of the testing center. If the center is prepared to take on such research, the Army has indicated its readiness to supply three additional counterparts to the staff.

4) The development of English language tests, requested by both Sogang University and the USOM Training Office. Sogang University is interested in the use of such tests as part of their ongoing program in English language research; the USOM Training Office would like them as a tool for the selection of participant trainees. Preliminary consultation has been provided to both groups, and some joint research projects may be undertaken.

5) A study of concurrent and predictive validity in the selection of air force pilots and other administrative officers, as requested by the ROK Air Force Academy. The area of pilot selection is one in which AIR is pre-eminent, and a number of the widely used AIR techniques may be made available (as was earlier done in Nigeria) for purposes of this research.

In addition to these specific projects, the AIR team has been called on also for consultation on the programs of a large number of institutions. They worked on a research design in the area of job analysis with officials of the Ministry of Labor Affairs, the Korean Productivity Council, and the USOM Manpower Branch; explored areas of possible cooperation with an ILO project for the training of conference leaders and instructors; consulted with the Bureau of Statistics of the Economic Planning Board, who have an insufficient number of professional statisticians to handle their work; discussed technical aspects of sampling and data collection with representatives of the Population Council; and volunteered to conduct a two-day seminar for management personnel being sponsored by the Taegu Industrial Association.

Even though the project has been in existence officially for less than a month, therefore, it is already involved actively in a wide variety of practical research applications. And this involvement is likely to increase substantially during the next six months.

Test Construction. The major effort in test construction is to begin next month, when the counterparts join the staff. Some work has already been completed, however, in connection with the International Skills Contest discussed above. Eight of the I-D tests in the technical area have been translated and modified for use in Korea, and administered to initial samples of air force personnel. Additional tryouts with much larger samples are scheduled to be completed in the near future as part of our work with the Technical High Schools in Chonju and Pusan.

Continuing Support. When the CERI Testing Center is opened officially next month, less than a year of the present project will be left to assist this center in its development as a professional institution. This time should be adequate to satisfy the contract requirement for a beginning in the area of institution-building; but it will clearly not permit the development of a capability responsive to the very broad range of responsibilities the inter-Ministerial Council proposed.

With the center not yet a reality, it is no doubt premature to consider the sources of support that it may be able to draw on after the present project has ended. But increasing attention will have to be given to this issue in the months ahead.

E: Accomplishments In Thailand

Staffing. On 9 January, Dr. Joel B. Aronson arrived in Thailand and joined the project staff. This completed the assignment of U.S. technicians.

Project Agreement. During the first two months of this period, we continued to assume that the PIO/T which had been negotiated prior to the Chief of Party's arrival was the only documentation required. When an effort was made to hire the local personnel authorized under this PIO/T, however, we learned that a formal Project Agreement must first be prepared. Negotiations of this agreement required an additional two months, and, on 23 March, a formal Pro-Ag was signed.

Under the terms of this Project Agreement, local currency was provided for secretarial and clerical staff, local travel of counterparts, utilities, office supplies, and office equipment; and (from the Trust Fund) for the housing and local travel of the U.S. technicians, and for the international travel of the senior counterpart to the Lagos meeting. USOM agreed to provide participant training of one year's duration for each of two trainees.

A PIO/P for the training component has been prepared, and was signed by USOM five days ago. It is hoped that the trainees will be able to leave for the States early next year.

Counterparts. At the time of the last report, the senior counterpart, Dr. Poj Sapianchaiy, had already joined the project staff. Dr. Poj has continued to demonstrate his high level of competence, in all project activities and in his extensive contributions to the Lagos Conference, and has been assuming increasing responsibilities for the research.

Near the end of December, a second counterpart joined the staff; and on 3 April five additional counterparts were assigned. All of these personnel are at the Master's Degree level. Thus, a professional counterpart staff of seven individuals all with graduate degrees is now on board.

Finding a suitable secretary was a time-consuming task because of the modest salary level that had been authorized for this position. But a continuing effort, notably on the part of the Ministry's liaison officer produced results; and on 1 March a full-time secretary joined the staff.

The College of Education has been particularly generous in providing supportive staff. They have provided two translators and a professional artist to work for the project part-time on the preparation of tests, and this has made it possible to complete Thai versions of a variety of tests in a short time.

Research Priorities. There is a large number of specific test needs in Thailand, any of which would be suitable areas of emphasis in the research. In selecting the projects to be done first, we were guided mainly by the areas that are receiving special attention in Thailand's educational

development plan, and in this manner identified three projects of special importance. These are

- 1) the selection of students for vocational schools,
- 2) the classification of students in the new comprehensive secondary schools, and
- 3) the selection of teacher trainees.

Work on these projects was begun in December. More recently, a request was received from the National Education Council for assistance on the development of a University Scholastic Aptitude Test. Estimates are now being made of the additional personnel and local support that would be required to add this major undertaking to the present research objectives.

Research Findings. As a first step in test development, two batteries of I-D tests were translated and adapted for local evaluation. These were the Technical Aptitude Battery, including the Similarities, Mechanical, Boxes, Figures, Manual Dexterity, and Finger Dexterity tests; and the Clerical Aptitude Battery, including the Similarities, Coding, Arithmetic, Names, and Tables tests. In early January, tryout versions of all of these tests were completed.

The first tryouts of these tests were carried out in mid-January on 69 students in clerical courses, and on 30 auto mechanic trainees. The average grades of these students were also obtained, to permit an initial assessment of the validity of the test scores. The results are shown in the two tables below:

TABLE 1:

CORRELATION OF I-D CLERICAL APTITUDE TESTS
WITH GRADES IN CLERICAL COURSES

<u>Test</u>	<u>N</u>	<u>r</u>
Similarities	69	.17
Coding	69	.23
Names	69	.08
Arithmetic	69	.39
Tables	69	.30

TABLE 2:

CORRELATION OF I-D TECHNICAL APTITUDE TESTS
WITH GRADES IN AUTOMOTIVE COURSES

<u>Test</u>	<u>N</u>	<u>r</u>
Similarities	30	.02
Mechanical	30	-.04
Boxes	30	.35
Figures	30	.32
Manual Dexterity	30	.12
Finger Dexterity	30	.10

These findings were considered to be highly tentative, because of the small size of the sample, and because of the not completely satisfactory criterion against which the test scores were compared. Nevertheless, a number of decisions was made. It was decided to drop the Similarities test and to try instead the I-D Verbal Analogies and Graphs tests, as had earlier been done in Nigeria when similar results were obtained. And it was decided to try to develop more challenging forms of the Mechanical and the Dexterity tests, commensurate with the relatively high level (eleventh grade) of the trainees. The Nigerian results had suggested that none of these tests is effective beyond the ninth grade.

The results for the other tests, however, were quite encouraging at this early stage of the research. Some changes were indicated, however, and these were introduced for the next tryout, conducted with tenth grade students of the demonstration school attached to the College of Education. The Figures test was given with shorter time limits, the Tables and Coding tests were both revised, and a translation of the I-D Verbal Analogies test was substituted for Similarities, as had been decided above. No criterion data was obtained for this group, but the revised forms seemed to work reasonably well on the basis of the internal checks that were made.

Also in accordance with the above decision, a slightly modified version of the I-D Graphs test was developed and tried out on another sample of clerical trainees. It resulted in a validity coefficient greater than .40, and this, in conjunction with the earlier results, indicates that the Clerical Aptitude Battery is now ready for large-scale evaluation.

In April, this modified battery and two entirely new tests (Number Checking and Complex Instructions) were administered to a sample of 170 tenth grade and 45 twelfth grade students who had applied for entry to the commercial course of the Northeastern Technical Institute in Korat.

Follow-up data will be collected later this year, so that the predictive validity of these tests can be assessed.

To provide further data on the Technical Aptitude Battery, extensive testing sessions have been planned for June and July. These will be carried out in three different parts of the country, all outside Bangkok so as to provide a broader basis for the evaluation.

Work has also been begun on the development of a test battery for elementary school students. An attempt was made to develop printed instructions for the Boxes test instead of the cumbersome oral I-D procedures, but at the elementary school level, as in Nigeria, this effort was unsuccessful. Accordingly, a new block counting test was developed for use at the elementary level. To supplement the Verbal Analogies test, a new 100-item vocabulary test was constructed. It will be tried out, together with the other tests, in the elementary school testing scheduled for early June.

Over-all, it is thought that excellent progress has been made on the development of suitable tests in the few months that the project has been in active operation. With the addition of the new counterparts, an even more intensive research schedule has been projected, and we expect to have some fairly definitive findings by the end of the year.

Continuing Support. At the time the TCR contract was signed, the Government of Thailand had already developed plans for a long-range effort in testing. They welcomed the opportunity to participate in this project because it would provide one part of the total program that they envisioned. But they did regard it and have continued to regard it as only one piece, and have continued their efforts to find support for the remaining pieces.

Thus, work on the development of the larger proposal continued in the Ministry of Education, and the Chief of Party participated in this development at the request of Ministry officials. A comprehensive plan has been prepared, and the Government of Thailand is prepared to make a substantial investment in its implementation. Requests for assistance have been made to both AID and the Ford Foundation, and it is hoped that significant support can be obtained from one or both of these sources.

More recently, the National Education Council has made an official request to USOM for fairly immediate help in the area of university entrance examinations, and the Governor of the Bank of Thailand has added his strong personal endorsement to this request. USOM has indicated its desire to be as responsive to this need as possible, and the various possibilities are now under active consideration.

Thus, we feel quite confident that the modest beginnings to which we have contributed will be carried forward. On the basis of its excellent local staff and of the very strong support being provided by the Ministry of Education, the new testing center could and should become an outstanding professional institution.

V: NEXT STEPS

As the preceding summaries indicate, the extensive requirements for documentation and organization appear at long last to have been adequately fulfilled. At all of the project sites, the team has been able to get away more and more from preparatory arrangements, and devote their energies to productive research. We anticipate a high rate of accomplishment over the next six months, with significant progress being made toward four major objectives.

The first objective is to complete the preliminary validation of a number of different test batteries, and to put these new procedures to practical operational use. It is hoped that at least one and preferably two batteries will be operational at each of the three sites.

The second objective is to consolidate the research findings of these separate studies, so as to be able to incorporate them into the Handbook being prepared. Machinery for the fast exchange of findings among the field sites was established at the Lagos meeting.

The third objective is to maintain an intensive program of on-the-job training, and to complete the orientation of the participant trainees. The target is to have at least two trainees from each country in the United States early next year.

The fourth objective is to promote firm decisions for the support of these fledgling testing centers after the AIR teams withdraw. This is, of course, the responsibility of the host governments, but it will be up to each team to advise government on what it will take to develop viable professional institutions.

The next report, therefore, will be largely technical, devoted to findings from research and practical applications. It will be submitted a few months before the end of the field phase, and will hopefully include also an answer to the important question of "What happens now?"