

PROJECT EVALUATION SUMMARY (PES) -- PART I

1. PROJECT TITLE  SAED Training Project	2. PROJECT NUMBER 685-0218 ) 15	3. MISSION/AID/W OFFICE USAID/SENEGAL
	4. EVALUATION NUMBER (Enter the number maintained by the reporting unit e.g., Country or AID/W Administrative Code, Fiscal Year, Serial No. beginning with No. 1 each FY)  <input checked="" type="checkbox"/> REGULAR EVALUATION <input type="checkbox"/> SPECIAL EVALUATION	

5. KEY PROJECT IMPLEMENTATION DATES			6. ESTIMATED PROJECT FUNDING		7. PERIOD COVERED BY EVALUATION	
A. First PRO-AG or Equivalent FY 78	B. Final Obligation Expected FY 82	C. Final Input Delivery FY 85	A. Total \$ 4,530,000	B. U.S. \$ 4,530,000	From (month/yr.) Sept. 1980	To (month/yr.) July, 1982
					Date of Evaluation Review 6/14-7/6/82	

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

A. List decisions and/or unresolved issues; cite those items needing further study. (NOTE: Mission decisions which anticipate AID/W or regional office action should specify type of document, e.g., program, SPAR, PIO, which will present detailed request.)	B. NAME OF OFFICER RESPONSIBLE FOR ACTION	C. DATE ACTION TO BE COMPLETED
1. Extend PACD to Dec. 31, 1984	AID Project Manager Mamadou NDaw	31/8/82
2. Reorientate Technical Assistance component, revise job descriptions of T.A.S. and amend ORT/SAED Contract	SAED/ORT	31/9/82
3. SAED should appoint a Training Coordinator for the project.	A. Dia, Director-General of SAED	30/9/82
<u>OUTSTANDING ISSUES</u>		
- Completion of Construction/renovation work at Ross-Bethio	SAED/SODECO	
- Recruitment of Fifth Technical Assistant by ORT	ORT	
- Housing for T.A. at Richard Toll	SAED	
- Procurement of training materials/aids	ORT/AID	

9. INVENTORY OF DOCUMENTS TO BE REVISED PER ABOVE DECISIONS			10. ALTERNATIVE DECISIONS ON FUTURE OF PROJECT		
<input type="checkbox"/> Project Paper	<input type="checkbox"/> Implementation Plan e.g., CPI Network	<input type="checkbox"/> Other (Specify)	A. <input type="checkbox"/> Continue Project Without Change		
<input type="checkbox"/> Financial Plan	<input type="checkbox"/> PIO/T	_____	B. <input type="checkbox"/> Change Project Design and/or		
<input type="checkbox"/> Logical Framework	<input type="checkbox"/> PIO/C	<input type="checkbox"/> Other (Specify)	<input type="checkbox"/> Change Implementation Plan		
<input type="checkbox"/> Project Agreement	<input type="checkbox"/> PIO/P	_____	C. <input type="checkbox"/> Discontinue Project		

11. PROJECT OFFICER AND HOST COUNTRY OR OTHER RANKING PARTICIPANTS AS APPROPRIATE (Names and Titles)		12. Mission/AID/W Office Director Approval	
Mamadou Ndaw (AID/Senegal), Henri Levy (ORT/London) Gary Walker (Aurora Associates, Team Leader), Moses Morgan (Aurora Associates) and Kader Lo (SAED)		Signature	<i>David Shear</i>
		Typed Name	David Shear, Director
		Date	5/31/83

### 13. Summary

The project has had limited success in establishing the foundation for a permanent training structure due to an inadequate definition of tasks for the ORT team, SAED's decision to assign ORT technical assistants to immediate production tasks in 1981 instead of training functions, poor inter-personal communications between Senegalese and ORT members, unsatisfactory provision of counterpart and support service personnel by SAED, and management deficiencies. A few short-term training courses were offered by equipment suppliers and organized by ORT technicians. Good farm equipment was ordered and delivered on time. However, a supply management system is gradually being put in place and a few perimeter workshops have been reorganized.

### 14. Evaluation

The mid-term evaluation was planned to assess the management and implementation of the project and make recommendations for any necessary changes designed to improve management. The evaluation scope was set forth in the project paper and it was discussed with SAED staff prior to the evaluation exercise. Both SAED and ORT staff were actively involved in the evaluation.

### 15. External Factors.

None.

### 16. Inputs

Farm equipment, some basic handtools and workshop equipment were ordered, received and distributed to perimeter workshops but not used pending construction and/or renovation of perimeter workshops. ORT provided five technical assistants by October 1980 to assist SAED in the establishment of a permanent training structure.

### 17. Outputs

There was no significant training provided in the first twenty-one months of project implementation due to the change of the job descriptions of the ORT team members upon their arrival in September 1980, whereby production responsibilities took precedence over training functions. No overseas training of GOS counterparts occurred in the first twenty-one months of the project.

### 18. Purpose and Goals

The project's objectives are as follows:

- a) create a permanent integrated training structure within SAED in order to upgrade 294 employees and 142 new workers in five years in the specialities of use, maintenance and repair of equipment;

- b) Adopt on the Job training methods for the training and upgrading of SAED personnel;
- c) participate in the reorganization of the main workshop in Richard Toll for the repair of heavy equipment, of the light workshops in Ross Bethio and of the workshops in the perimeters;
- d) establish an equipment and supplies management system;
- e) undertake individual short-term interventions in the technical and organizational areas according to the specific needs of the various departments of SAED.

19. Beneficiaries

As a result of the assignment of ORT technicians to production functions they were neither able to design and implement a training program for SAED staff nor establish a training structure for SAED itself.

20. Unplanned Effects

None

21. Lessons Learned

None.

22. Special Comments or Remarks

None.

## INTRODUCTION AND SUMMARY

The SAED Training Project Agreement between AID and SAED was signed on June 29, 1978 and the contract for the provision of technical personnel was signed between ORT and SAED on July 17, 1980. The first project team member arrived in Senegal on September 16, 1980 and by mid-October, the full five person team was in the country and ready to begin work. Although funds were being spent by AID for the purchase of equipment and other project related items during the two years that elapsed between the AID-SAED Agreement and the ORT-SAED Contract, the focus of this report is on the twenty-one months from the arrival of ORT technical specialists to the arrival of the Evaluation Team (mid-October 1980 - mid-July 1982).

The project's objectives are succinctly stated in the ORT-SAED contract as follows:

### Project Objectives

- a) create a permanent integrated training structure within SAED in order to upgrade 294 employees and 142 new workers in five years in the specialties of exploitation (use), maintenance and repair of equipment;
- b) adopt "on the job" training methods for the training and upgrading of SAED personnel;
- c) participate in the reorganization of the main workshop in Richard Toll for the repair of heavy equipment, of the light workshops in Ross Bethio and of the workshops in the perimeters;
- d) establish an equipment and supplies management system;
- e) undertake individual short-term interventions in the technical and organizational areas according to the specific needs of the various departments of SAED.

Based upon its review of conditions within SAED and in the geographic area which SAED services, the Evaluation Team is convinced that the project's objectives are sound and the need for the principal forms of assistance planned for delivery by the project remains great.

Unfortunately, progress toward the achievement of project objectives has been unsatisfactory. Not unlike many development projects, the SAED Training Project is affected by a multiplicity of factors which singly or in combination have limited project progress. Some factors are external to and largely beyond the control of those involved with the project while others are internal and, therefore, usually will be more responsive to changes in the project. The Evaluation Team has not found any single factor which clearly has been responsible for the majority of the project's difficulties; rather, there are numerous problems in management, administration, personnel selection, counterpart identification and participation, interpretation of project objectives, housing, inter-personal communications, etc.

Consequently, there is no short-term "solution" which will eliminate most constraints and produce exemplary project performance in a dramatically short period of time. There are, however, specific ways in which the project can be reoriented which will reduce constraints and accelerate project implementation. There are also measures which can be taken by AID, ORT and SAED to make their contribution to the project more effective.

A series of recommendations on project reorientation and suggestions regarding measures to be taken by the interested

parties can be found in Part IV (Recommendations). The main thrust of these recommendations is directed toward placement of ORT recruited personnel in positions of greater proximity to their work and the assignment of genuine counterparts able to devote most of their time to project tasks. In addition, the "Special Covenant" contained in the 1978 AID-SAED Project Agreement, which calls for SAED to appoint a Training Coordinator, should no longer be ignored.

To permit the recommendations to be implemented, the technical assistance component should be continued until December 31, 1984. The final decision regarding the duration of technical assistance should not, however, be made by AID prior to receiving assurances that other recommendations in Part IV are accepted in principle by SAED and ORT. Specifically, recommendations IIB, IIC, IIE points 1, 2 and 12, and the appointment of a Senegalese Training Coordinator are stressed. A number of other recommendations are supportive of these central points and, obviously, should become part of any Memorandum of Understanding which SAED, AID and ORT might wish to draft after reviewing the content of this report.

As of September 1, 1982, it is estimated that ORT will have expended 111 of the 228 person months available in the ORT contract for long term personnel.\* The project also has 24 months

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\*This presumes that (a) SAED's decision not to continue the contracts of J. Picasso (Team Leader) and U. Pirani (Agricultural Machines) will not be changed and (b) that the threatened resignations of the other three team members will occur due to the requirement that the housing built in Ndiaye be used. The effect of this is both negative (delay caused by recruitment of new personnel) and positive (there is an opportunity for a fresh start). The above calculation takes into account the possibility that two of the three remaining personnel might opt to remain with the project. For this reason, no break is shown in the expenditure of person months after September 1, 1982 for the O&M Specialist and the Supply Management Specialist.

budgeted for short term consultants of which only one month has been used. Without increasing the ORT budget for personnel\*\*, the Evaluation Mission's recommendations could be accommodated as follows:

	<u>Remaining Period</u>	<u>Number of Months</u>
Specialist in Organization & Methods	Sept. 1, 1982- Dec. 31, 1984	28
Specialist in Supply Management	Sept. 1, 1982- Dec. 31, 1984	28
Perimeter Level Training Specialists (3)	Jan. 1, 1983- Dec. 31, 1984	72 (24 x 3)
Short Term Specialist for Machine Tool Division (Ross Bethio)	1983	6
Short Term Specialist for Auto-Diesel Division (Ross Bethio)	1983	<u>6</u>
Total Person Months		140

Thus the 117 months remaining as of September 1, 1982 plus the 23 months remaining for short term personnel equals the 140 months shown above. The configuration of person months being expended on the above chart is illustrative and represents one

\*\*It is beyond the scope of this Evaluation Report to present a detailed financial assessment of the project to date, however, it should be noted that even though there is no increase in the number of person months proposed for the project, the replacement of Moreillon by Godet, the replacement of Yziquel by Coppolino and now the probable complete turnover of five positions currently filled will represent a significant cost to the project in terms of airfares, shipment of personal effects, etc., not to mention the financial loss each time a new person arrives and has to spend a month or more learning SAED's procedures, being introduced in the perimeters, establishing a workplan, unpacking and settling in, etc. These costs could be reduced somewhat if new personnel are identified who are single, who have fewer household effects and who are at a lower salary but this will probably not fully compensate for the costs mentioned above.

approach. SAED and ORT might reasonably decide, for example, that the Supply Management Specialist can complete his tasks in a somewhat shorter time period, or that the two short term personnel could be combined into one position for, perhaps, nine months, or the O&M Specialist might be able to train his counterpart and be replaced in less time. This would provide somewhat more flexibility in the scheduling of personnel and leave person months available for a few short term consultancies which may be required later but which have not been foreseen. The area where it is least likely that any savings of person months could occur is in the Perimeter Trainer positions.

Overall, the project has had limited success in establishing the foundation for a permanent training structure, there have been a few short term training courses offered by equipment suppliers and organized by the ORT team, the selection of farm equipment has, on the whole, been good, most equipment has arrived early or on time, the beginnings of a supply management system are visible, a few perimeter workshops have been reorganized and there is one counterpart who, at present, has a good working relationship with the ORT technician.

Unfortunately outweighing these modest successes, the project has suffered from an inadequate definition of tasks, from a shift away from training and towards more immediate production issues in 1981, from poor inter-personal communications especially between Senegalese and most of the ORT team, from a lack of follow up (failure to produce workplans, training plans,

budgets and quarterly reports on time), from unsatisfactory provision of counterparts and support service personnel by SAED as stipulated in the SAED-ORT agreement, from the fact that personnel were sent to Senegal before housing was available at the project site, from construction delays and from management deficiencies within SAED and, to a lesser extent, within AID and ORT.

The effect of these factors has been frustration which sometimes has eroded the mutual respect which is essential between host country nationals and expatriate technicians, confusion regarding the relative priorities of various tasks and objectives, minimal transfer of knowledge and skills to Senegalese, minimal formal or on-the-job training completed during the 21 months in which technical specialists have been present, an excessive preoccupation with the housing issue, an inadequate presence in the perimeters of ORT personnel, the lack of suitable physical structures in which to conduct some training and the demoralization which can result from a perception that management acts as an obstruction rather than a source of support.

Finally, it should be recalled that the project operates in an extreme climate, over considerable distances and within the larger context of agricultural policies and institutions established by the Government of Senegal. These external factors also affect the ability of the project to achieve its objectives and influence the decisions of project personnel and farmers.

## II. Evaluation of the Project

### A. CURRENT STATUS AND ASSESSMENT OF MANAGEMENT AND ADMINISTRATION OF THE PROJECT

#### 1. Management and Administration by AID

On the whole, comments from ORT personnel and SAED regarding AID's administration of the project have been positive, particularly since the opening of the liaison office in St. Louis. There have been specific difficulties which are noted in summary form in Part III (Findings and Conclusions) which relate to AID's failure to require receiving reports from SAED for project equipment, the order of machine tools in Senegal without obtaining the required waiver and the rate of turnover of project managers. Given the size of the project and the number of administrative actions required, the problems in this area have not been excessive. Several persons specifically mentioned the Supply Management Office at AID as an efficient support unit which was able to facilitate paperwork and deliver equipment.

The question of project management is more difficult since there are several issues which appear more clear from hindsight than was probably the case at the time the decisions were being made. An evaluation, by definition, works from a position of hindsight. The Evaluation Team trusts that AID will accept these comments knowing of our awareness of our advantage in this regard.

#### a) Decision to Allow ORT Technicians to Arrive in Senegal in 1980

The decision to allow ORT technicians to begin work in Senegal in September/October 1980 was based on the fact that the project had already been under implementation for two years

(the period between the AID-SAED Agreement and the SAED-ORT contract), that SAED obviously needed technical services of the sort offered by the project, that it is difficult for a contractor to hold prospective employees indefinitely and to replace them when lost, and that there is an understandable desire to get the project moving, to "make progress" and to be seen to be doing so by all concerned. The decision was taken, therefore, to provide "temporary" lodging for ORT staff in St. Louis pending the availability of housing in Richard Toll.

At the time, it no doubt seemed a sensible means to advance the project's objectives, however, this decision seems to have had an effect on the choice of the site for the main repair base and continued to be an issue twenty-one months later at the time of the Evaluation Team's visit.

Considerable time and energy has been spent discussing and arguing this issue. AID constructed houses at the Ndiaye Training Center after it was decided to move the main base to Ross Bethio but the ORT team refused to live in Ndiaye as it previously declined to live in Richard Toll. Given the amount of dissension this issue has caused and the probability that no less than five ORT technicians will have to be replaced as a consequence, the negative effect of the original decision on the project is clear.

b) Decision to Move the Main Base to Ross Bethio

The ORT team presented a report to AID and SAED barely one month after the team arrived in Senegal recommending that the main repair base be moved from Richard Toll to Ross Bethio. Nine separate studies had been conducted between 1973 and 1978 on the

question of SAED's equipment maintenance, staff training and reorganization. The Project Paper states on page 25 that "The facility at Richard Toll has been inspected by AID engineers and an ORT specialist who concur with SAED management that it (Richard Toll) is ideal for the new heavy equipment maintenance and training center". The ORT project proposal states the following:

The management's expressed wish to shift the central repair shops and separate their activities from those of the Delta area is absolutely justified. Richard Toll is obviously, therefore, the ideal site for the future center. Both general design and the capacity of the existing buildings meet the present needs of SAED although they are in a serious state of disrepair. The layout of the premises poses no problems in terms of linking up the training center to the central repair shop..."

The issue appears to have been studied thoroughly and the technical opinions of AID engineers and ORT personnel were solicited. SAED had also expressed its desire to use the Richard Toll facility. Despite this, in a single meeting in December, 1980 SAED and AID accepted the proposal of the ORT team to use the base at Ross Bethio instead. It does not appear that any significant new evidence was brought to light, nor do the assumptions on which the ORT team's recommendations were based appear to have been challenged.

Given the fact that the Evaluation Team believes that this issue is now an academic question and has recommended that reconstruction of the base at Ross Bethio be undertaken without further delay, it is not necessary to review each of the arguments advanced by the ORT team and to provide technical information regarding them, however, it should also be noted that an AID

engineer accompanied the Evaluation Mission to the Richard Toll facility. In his written comments to the Evaluation Team, it was clear that he too was far from convinced that there were good reasons for altering the project in such a fundamental way from what had been planned. The notes from the meeting at which the decision was taken simply record that ORT's recommendation was accepted by AID and SAED. When SAED personnel were questioned about this, the Mission was told that SAED believed that ORT was technically qualified to make such a judgment and they were prepared to accept their technical advice. There is no evidence that AID ever challenged this decision or asked for documentation to support the conclusions of the ORT team in this regard.

The AID Project Manager should have insisted on full technical documentation for a change of this magnitude and at this stage of the project's development. This appears not to have been done.

c) Decision to Accept Changes in ORT Job Descriptions

In a meeting on September 30, 1980, it was agreed that the job descriptions of the ORT team could be changed to place greater emphasis on production rather than training. At the time, the Project Manager, the late Mr. Paul Worthington, insisted that SAED not lose sight of the fact that the project is a training project, however, it appears that it was then agreed to modify the job descriptions as presented in a "note de service" dated October 6, 1980. The result of this decision was that very little, if any, training was accomplished since ORT personnel essentially became operational staff within SAED. If the original project

objectives were sound (and the Evaluation Mission believes that they were and are), AID should not have agreed to these changes. At a minimum, the job descriptions should have been more balanced and included specific training responsibilities.

d) Decision to Remove ORT Personnel from Production and Return to the Original Project Objectives

By June, 1981 it had become clear that training was not being accomplished. SAED was persuaded that it needed training and a permanent training structure if it was going to begin to resolve some of its organizational and managerial difficulties. The ORT team leader was then asked to prepare a comprehensive training plan in from three to six months in order to move the project back towards its objectives. While the plan was being written, ORT personnel were progressively to phase out of production and allow local staff to take over.

The "Training Plan" which was finally produced was more of a work plan with a training element, it was not comprehensive or detailed and it did not provide the mechanism needed to advance the project. ORT should have sent someone with a capability in planning for training to assist the team leader and AID should have monitored this process more closely so that the project did not end up with an unsatisfactory product after waiting for it for six months. Finally, the "Training Plan" should not have been accepted by SAED and AID in January, 1982 as the basis for the next six months work given the lack of precision. (The January meeting did ask for individual workplans from each specialist and a schedule for overseas

training and these were provided in the following weeks, however, none of the overseas training has occurred as scheduled and the individual workplans were relatively general bar charts showing tasks and months in which tasks were to be accomplished and did not contain specific targets or explanation).

e) Other Management Constraints

In all fairness, it should be noted that AID was attempting to manage this project in the absence of a budget from SAED/ORT, (at one point AID froze the local SAED account pending resolution of outstanding issues), without work plans or training plans and with delayed reports. AID repeatedly requested these documents and this is recorded in the minutes of numerous meetings. The management of the project has also suffered from the fact that the "Special Clause" calling for SAED to appoint a Training Coordinator was ignored. AID was, for the most part, aware of the management tools which needed to be used to move the project towards its objectives but appears to have been unable to get ORT and SAED to use them and to produce the necessary planning documents. The effect of the lack of planning and the lack of adherence to the project's objectives has been, not surprisingly, twenty-one months of work performed without an agreed conceptual context which could then be used to improve management of project activities.

2. Management and Administration by SAED

It is difficult to distinguish between SAED's management and administrative problems in general and those which relate

to the project. A primary reason for the development of this project was to assist SAED, through training, to improve its management and administration, particularly of supplies and equipment. In a sense, therefore, the project - to some extent - has been adversely affected by some of the very weaknesses that the project itself sets out to correct.

Specifically, the Evaluation Team has been informed that:

- a) The Director General of SAED (PDG) does not always receive reports or memoranda intended for his information which have been provided by ORT personnel to persons lower in SAED management;
- b) When the Director of the Industrial Division is away from Ross Bethio visiting various perimeters, there is virtually no delegation of decision making authority. This apparently is the result of past abuses, however, administrative controls should permit delegation of routine matters to improve efficiency;
- c) The limited number of managerial staff at SAED and less than optimal time management causes the Director of the Industrial Division to have very limited time to see his staff and ORT personnel or to resolve issues without constant interruption; \*
- d) Despite important improvements with the arrival of the current head of the Industrial Division, there appears to be a very informal and sometimes inconsistent style of decision making.

In addition, the Mission noted that the objectives of the project and the means to achieve them were not always clearly understood by personnel in the perimeters and by some staff at Ross Bethio. For example, all personnel interviewed by the Evaluation team stated their support for on-the-job training but the concept seemed to be vague in the minds of many. On-the-job training is more than an ad hoc process of skill transfer which occurs through observation and the occasional pointing out of error by the Specialist. OJT requires conscious planning and

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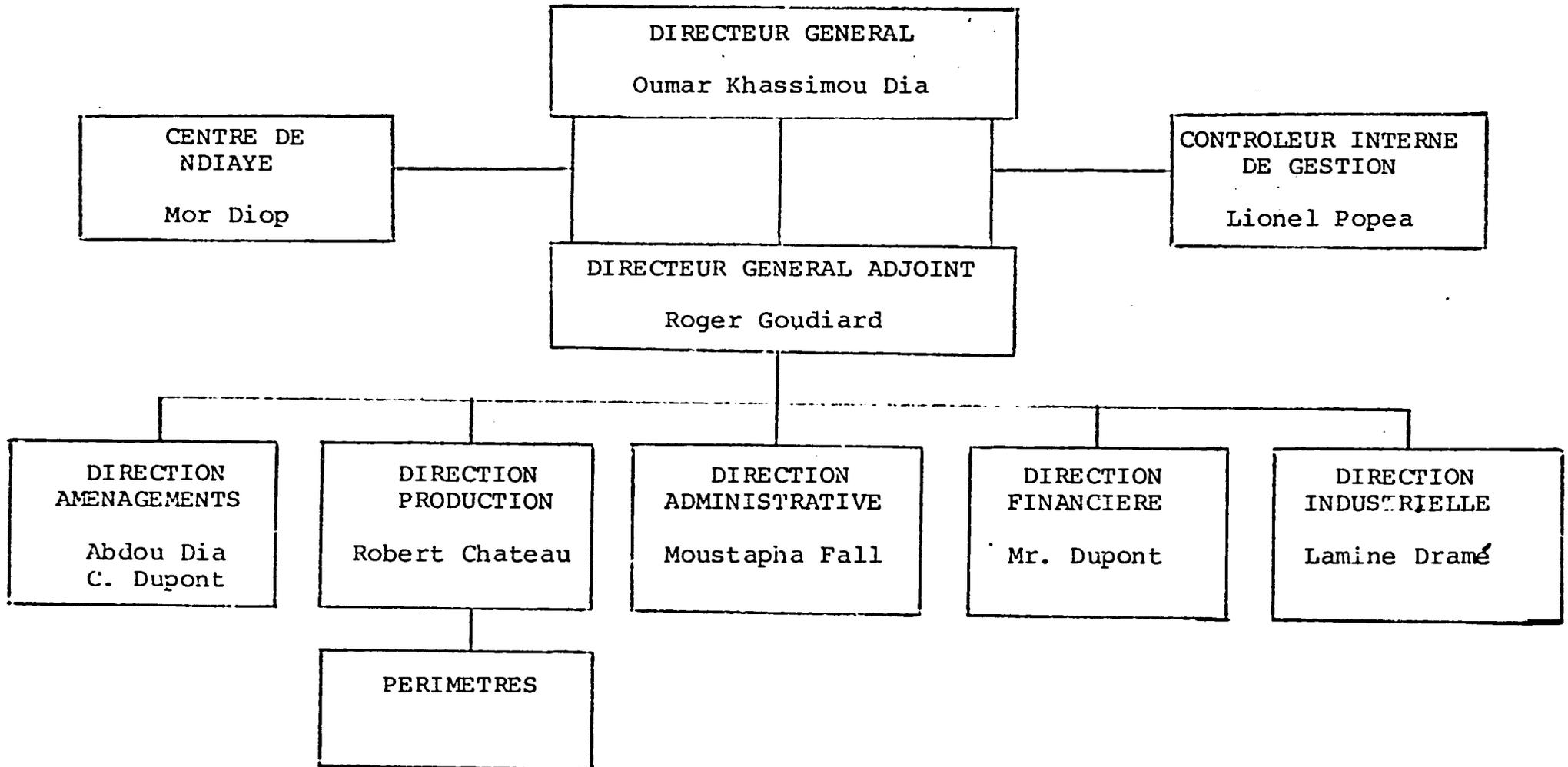
\*For example, the AID Project Manager estimates that the Director has missed over 50% of the meetings scheduled with AID.

follow-through. The nature of that planning and follow-through and the kind of participation expected from SAED personnel needs to be communicated more thoroughly.

A number of persons interviewed by the Mission recommended that SAED's management of the project could be improved if the project were moved out from under the Industrial Division and attached to the Director General's office by being incorporated into the Ndiaye Training Center. (The organizational charts on the next two pages show the present structure of SAED and the Industrial Division). According to project documentation, the present placement of the ORT team was decided upon in December, 1981 only after lengthy discussion within SAED and with ORT after which it was decided to create the Cellule de Formation Intégrée (CFI). The Evaluation Team concluded that the organizational placement of the project was not an important constraint on project activities and we are reluctant to suggest further reorganization. The proposed reorientation of the project, (See IV, B5) does not tamper with the basic structure. The project remains within the Industrial Division, SAED complies with the Special Clause of the project agreement calling for appointment of a Training Coordinator by naming the Division's Deputy Director to that post and the CFI is renamed mostly to permit an expanded capability in research and production of training materials and to distinguish between those personnel who are directly part of the Bureau d'Etudes and those who report to the Training Coordinator directly from the perimeters.

Finally, there were frequent complaints that the need for

S.A.E.D.



DIVISION INDUSTRIELLE

DIRECTEUR

Lamine Drame

DIRECTEUR ADJOINT

Kader Lo

SECRETARIAT  
COMPTABILITE

CELLULE FORMATION  
INTEGREE (CFI)

Picasso/Pirani/Godet  
Coppolino/Conrad

SERVICE APPUI  
ET CONTROLE (SAC)

Mamadou Ba

UNITE INDUSTRIELLE  
RIZERIE  
(UIR)

DIVISION  
INTERVENTION  
(DI<sup>T</sup>)

Wally Senghor

DIVISION  
ELECTRICITE  
INDUSTRIELLE  
(DEI)

DIVISION  
ATELIER  
CENTRAL  
(DAC)

Yaram Diallo

DIVISION  
MAGASIN  
CENTRAL  
(DTK)

Issalaye Seck

RIZERIE  
ROSS-BETHIO  
(REE)

RIZERIE  
RICHARD TOLL  
(RRT)

SECTION  
MECANIQUE  
GENERALE

Diam Ba  
William Barra

SECTION  
MECANIQUE  
AUTO

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tax exoneration from the GOS caused delay in securing spare parts and equipment in a timely manner. Improved management in this area could lessen this difficulty by ordering parts in advance, through proper stockpiling and through improved administrative efficiency.

### 3. Management and Administration by ORT

In brief, ORT/London would benefit from strengthening its pre-arrival staff orientation program, it could provide more standardized training materials to project personnel to reduce the amount of original material being produced and it could monitor the project more closely to avoid the kind of delay which occurred in the preparation of the training plan. ORT also should insist on the timely preparation of quarterly and annual reports from its field staff. (See Parts III and IV for a summary discussion of these points).

The major management issue to confront ORT in Senegal has been the question of leadership and the limits of authority. ORT usually prefers to have a team leader who is responsible for the technical services being delivered as well as the administrative tasks which are necessary for internal ORT project execution. The SAED Training Project was confronted with a SAED administration which insisted that technical coordination is the responsibility of the SAED hierarchy. This implies that ORT personnel have less authority and initiative. ORT seems to have accepted this role, at least in part. Consequently, there have been several instances where SAED has waited for ORT to take an initiative and ORT has waited for SAED to take the initiative on the same issue. For example, SAED stated that ORT should

identify the six trainers since ORT specialists were better qualified to select candidates from among SAED personnel. ORT, however, insisted that SAED should select personnel since they were responsible for their organization. On the whole, the ORT team leader was placed in a difficult situation but could have taken a greater leadership role than he did.

## B. CURRENT STATUS AND ASSESSMENT OF PERSONNEL

### 1. ORT Personnel

Through numerous discussions with SAED, AID and ORT personnel, it became clear that, with the single exception of the first Supply Management Specialist\*, individuals recruited by ORT are technically proficient in their respective disciplines. The Evaluation Mission was impressed with the understanding ORT team members had with respect to the nature of SAED's organizational and training needs and with the collective experience the team brought to the project. For example, several SAED staff noted the exceptional level of organization of and the high quality of materials produced by the Organization and Methods Specialist. Similarly, the Agricultural Machines Specialist was praised for his work in determining the appropriate makes and models of machines to be ordered and for the assistance he provided in preparing requests for bids.

The newly arrived Supply Management Specialist was also complimented by several SAED staff for his diligence and grasp of organizational problems affecting equipment and supply management. Two of the people participating in this evaluation have had considerable experience in supply management and they have agreed that the system proposed by the Specialist is relevant and feasible.

Unfortunately, technical competence is necessary but not sufficient for the success of a development project. A willingness and ability to work with host country nationals as colleagues, a commitment to transfer knowledge and skills to counterparts,

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\*Mr. Yziquel occupied the post of Supply Management Specialist from October 1980-January 1982. His removal was requested by SAED.

a conscious effort to institutionalize the programs and systems developed (in this case within SAED), and a plan to disseminate the output of the project to the intended beneficiaries are equally essential. In too many instances, the members of the ORT team individually and collectively failed to address these issues. (For a discussion of each ORT team member's performance, see Part III Findings and Conclusions, Section B,1).

The current status of project personnel is uncertain. Two team members (J. Picasso, Team Leader and U. Pirani, Agricultural Machines Specialist) contracts expire in September and SAED has indicated that they do not wish them to be renewed. SAED has asked for a one year extension of the contract of the Organization and Methods Specialist, F. Conrad. The other two team members have only recently arrived (Godet in November, 1981 and Coppolino in March, 1982).

Their status is further complicated by the housing issue. Originally, project personnel were expected to live in Richard Toll near the central repair and supply base which was to be renovated as part of the project. Housing was to be upgraded and ORT personnel would have had access to a recreational facility in the town which is also used by employees of a sugar factory. The housing was not ready for occupancy when the ORT personnel arrived in Senegal so AID rented houses for them in St. Louis for one year. During that year, ORT proposed that the site of the repair base be shifted to Ross Bethio from Richard Toll. Their recommendation was accepted (See Part F for a discussion of the circumstances surrounding this recommendation)

Consequently, AID then decided to construct four houses at Ndiaye, the site of a training center for SAED personnel located about ten minutes by road from Ross Bethio. The houses were built at a cost of \$208,000 and were ready for occupancy in June, 1982. The ORT team had informed AID that it would resign rather than move to Ndiaye. AID constructed the houses anyway and instructed ORT to inform new personnel (i.e. Godet and Coppolino) precisely where they would be expected to live and under what conditions. ORT claims to have informed the new personnel fully and they agreed to live in Ndiaye when they signed their contracts in Europe. Upon arrival in Senegal, they claimed that they were misled by ORT regarding the conditions at Ndiaye and they joined the other ORT personnel who were already in country in refusing to move to Ndiaye.

At the time the Mission left Senegal, the ORT team was still refusing to move, AID was still insisting that they must live where they were assigned and the issue had become a matter of principle for all concerned. AID then decided to extend the leases for the team's houses in St. Louis until August 30th to give SAED and AID time to examine the findings of this Mission since recommendations made in this report might have a bearing on where ORT personnel should live. The Evaluation Mission was not asked to address the housing issue directly and has refrained from doing so. There are, however, clear implications for housing within the suggestions for reorienting the project as presented in Part IV. If these recommendations are adopted and the ORT team resigns, the absence of staff during the transition to new ORT

personnel and the likelihood that new staff will have different ideas and approaches will serve to delay the project further. On the other hand, the issues raised above regarding the non-technical requirements for ORT recruited personnel may be able to be addressed more fully if there are more vacancies to be filled at this point.

## 2. Counterpart Personnel

There is clear disagreement regarding the status of counterpart personnel in terms of (a) who is officially designated as counterpart to whom, (b) the nature of the hierarchical relationship which is and should be present between Specialist and Counterpart, and (c) the amount of time that the counterpart should spend with the Specialist to whom he is assigned. (See III, B2 for discussion). At present, the situation appears to be as follows:

Specialist	Counterpart	Date Assigned as Counterpart	Function at SAED	Comments
PICASSO	Y. DIALLO	informal	Chief Central Workshop	Resp. for light vehicle
CONRAD	-	-	-	-
PIRANI	W. SENGHOR	since 1980	Chief Mechanic/ Public Works	Director of DIT (Div. Intervention Techniques)
	M. BA	since 1980	Chief Agricultural Machines	Director of SAC (Service Appui e Control

Specialist	Counterpart	Date Assigned as Counterpart	Function at SAED	Comments
MOREILLON/ GODET	W. BARRA	informal	Chief Machine Tools Section	
YZIQUEL/ COPPOLINO	M. GUESSE	June, 1982	Supply Management	Hired on three month trial basis

a) Y. Diallo, Counterpart to Auto-diesel Specialist (Team Leader)

Mr. Diallo estimated that he spent about one percent of his time with Mr. Picasso and stated that he did not have regular meetings with him nor did he know in advance of Mr. Picasso's work plans, trips and other activities. He claims to have a satisfactory personal relationship but no professional relationship. Mr. Picasso did discuss the testing program with him on one occasion but never discussed preparation of a training plan or program. Mr. Diallo has more than twenty years of experience with SAED and has attended several courses in Europe where he received certificates as a trainer in his field.

Mr. Diallo is eligible for retirement in two years which is one reason given by Mr. Picasso for the limited contact he has had with his counterpart. SAED believes that he will work three to four more years and that he could, in turn, transfer his experience and knowledge to others in the Central Workshop. Mr. Diallo's case is a good example of the missed opportunities mentioned elsewhere in this report. Rather than worrying that his counterpart was assigned informally (i.e. without a formal letter from the Director of the

Industrial Division) and dismissing the chance to work with Mr. Diallo because of the nearness of his retirement, the Specialist should have made every effort to involve his counterpart in his work, shared information and, at the same time, asked SAED to provide an additional counterpart who was younger. A good faith effort in this instance would also have had a positive effect on overall inter-personal relations between ORT and SAED personnel.

b) W. Senghor, Counterpart to Agricultural Machines Specialist

Mr. Senghor was in France for training in agricultural machinery from October 1980 - February 1981 and, again, from May-December, 1981. From February to late April 1981, Mr. Senghor was available full-time to the Specialist, however, Mr. Senghor has stated that he never worked on the machinery and was not informed by Mr. Pirani of his activities. Since January, 1982 he has worked as assigned full-time as the head of the Public Works Section. He estimated that he spent less than ten percent of his time with Mr. Pirani during the past six months but could have made more time available if there was a reason to do so.

Although trained in agricultural machines, upon his return from France he was assigned to Public Works (heavy machines) and Mr. Mamadou Ba was assigned to agricultural machines. Consequently, Mr. Senghor would like to get another scholarship to return to France to study heavy engine maintenance and repair.

c) Mamadou Ba, Counterpart to Agricultural Machines Specialist

Mr. Ba stated that he wants to work as a trainer in his field and is convinced that an "on-the-job" training approach which

integrates production with training is both feasible and preferable so long as it is well planned. He believes that he requires additional training in teaching methods (pedagogy) and the use of audio-visual aids with non-literate trainees since his two month training course in France in mid-1981 was purely technical in nature.

In January, 1982, Mr. Ba was appointed the Director of the SAC (Service d'Appui et Controle) but stated that he still had ample time to serve as a counterpart since the work of SAC and that of the Agricultural Machines Specialist are complementary in nature. It is clear that the ORT Specialist in question made little or no effort to transfer his skills to his counterparts or to develop satisfactory personal relationships with them.

d) Mr. William Barra, Counterpart to Machine Tools Specialist

Mr. Barra has worked as a counterpart to the Specialist in Machine Tools since March, 1982. During the past four months, Mr. Barra spent one month in Dakar for training with "MATFORCE" in injection pumps. His training program was to have been for three months but it was curtailed in order to make him available for work in the perimeter workshops in the months prior to the main plowing and planting period. It is planned for Mr. Barra to return to Dakar for a further two months to complete his training during the second half of 1982. The training in Dakar is intended to provide a foundation for further training for a two and one half month period in Denmark and elsewhere in Europe. Both Mr. Barra and his ORT counterpart, Mr. Guy Godet, stated that they

had a good working relationship and a cordial personal relationship. Mr. Barra stated that he has regular meetings with Mr. Godet, that they go on field trips together and that he is informed in advance of Mr. Godet's activities. So far, he has not received individual instruction on new equipment because it is still in crates awaiting suitable installation sites.

Mr. Barra was also the counterpart to Mr. Godet's predecessor, Mr. Moreillon. Primarily, they worked together on production activities and there does not seem to have been much organized transfer of skills.

e) Mr. Guesse, Counterpart to the Supply Management Specialist

Mr. Guesse was recently recruited by SAED and is employed on a three month trial basis. The Specialist has already indicated his belief that Mr. Guesse is not qualified to be his counterpart. Most of his background in supply management was in the Senegalese army. Since his employment is dependent upon his performance in the initial period, the Specialist should provide Mr. Guesse with every opportunity to learn supply management procedures and provide an evaluation to SAED to assist SAED to determine whether Mr. Guesse's services should be retained.

f) Counterparts to the Specialist in Organization and Methods

Mr. Conrad has had two counterparts assigned to him, Mr. Mansour Mbaye and Mr. Kader Lo. In each case, conflicts of personality and temperament appear to have resulted in an inability to continue the counterpart relationship. Mr. Conrad was recently

asked to prepare a profile of the person he believes could serve as his counterpart. SAED and ORT are now reviewing the description and will seek to identify a counterpart. As mentioned elsewhere in this report, a full-time counterpart for this position is one of the most important for the entire project.

On the whole, the above list of counterparts shown next to the names of the Specialists is misleading since, with the exception of Mr. Barra, they have been counterparts in principle. They have spent little or no time with the Specialists in question and have, therefore, gained little from their association. While SAED can be faulted for assigning the counterparts to production functions in addition to the counterpart function, it should be recalled (a) that SAED is short staffed at the higher levels and (b) ORT personnel showed little willingness to work with their assigned counterparts in any event.

SAED was also supposed to identify six trainers for the perimeters. Although the Director of the Industrial Division maintained that they had been identified for some time as the "Chefs de Colonne" of the perimeters, other personnel in SAED and the ORT team did not seem aware of this. Nothing in writing could be found that this was ever decided officially. There does not seem to have been any attempt to contact or test the "Chefs de Colonne" in this regard. These personnel still need to be identified and will be even more important if the project is reoriented as recommended to place three personnel directly at the perimeter level.

Profile for Counterpart to Organization and Methods Specialist

Responsable de la programmation et des formations du CFI

Exigences du poste

- 1 - Formation requise
- Ingénieur - technicien en  
- machines-outils
  - ou - mécanique automobile
  - ou - mécanique générale
- 2 - Aptitudes extra  
professionnelles
- Excellentes connaissances de la  
langue française écrite, parlée
  - Bonnes connaissances de l'anglais
  - Aptitudes à la rédaction
  - Excellentes dispositions pour le  
dessin technique et libre
  - Dispositions à l'organisation/pro-  
grammation
  - Aptitudes à la dactylographie et  
à la mise en page
  - Esprit communicatif
- 3 - Qualités person-  
nelles
- Ordonné et soigneux
  - Créatif et chercheur
  - Intéressé par la formation techni-  
que et les problèmes de création  
de matériels didactiques variés.
  - Caractère organisateur et actif.

Période de préparation prévue

- 1 / 3 mois - Connaissance des activités de ce poste au sein du  
CFI de la Direction Industrielle.  
Cette période est sélective et le candidat devra  
faire la preuve de l'intérêt aux exigences du poste.
- 2 / 18 mois - Stages à l'étranger (en cours de programmation)  
environ qui comporteront:
- a) un stage de pédagogie générale
  - b) un stage de création de matériels didactiques  
maquettes, documentations, photo, prise de vues,  
etc....
  - c) un stage en utilisation des matériels de  
reproduction, dessin technique de documentation  
pour la formation.
- 3 / 3 mois - Réintégration au CFI, mise en pratique des con-  
naissances et adaptation au service de la Direction  
Industrielle.

Prise en charge du Poste.

C. CURRENT STATUS AND ASSESSMENT OF TRAINING

1. Background and On-The-Job Training

The most obvious and serious failure of this training project to date is the minimal amount of training which has been undertaken during the first twenty-one months in which ORT technical personnel have been assigned to the project. The ORT prepared Annual Report for the period October 1980 - December 1981 lists the following training as having been completed during this period:

	Courses	Specialty	Number Trained
a.	Overseas	Agric. Machines	2
b.	Dakar	Diesel Trucks	2
		Tractors	1
c.	On Site		
	Mechanical Cultivators	Operators	80
	Engines (Public Works)	Drivers & Mechanics	14
	Threshers VICOM	Operators	11
	Tractors 4 types FIAT	Drivers Mechanics	39

The report points out that virtually all of the on-site on-the-job training was conducted without charge by the equipment suppliers (Fiat, Huard and Massey-Ferguson) who sent a technician to the project area to conduct the training. This was organized by the ORT team. The two personnel trained overseas in agricultural machinery were identified by SAED prior to the arrival of the ORT personnel and one, Mr. Wally Senghor, was in

France for most of the period from October 1980 to December 1981.

The inadequate amount of training of SAED personnel in general and of counterparts was evident to all concerned. The ORT Team Leader stressed this in a confidential report to AID/Dakar dated March, 1981 in which he stressed the inability of the team to conduct training and his belief that training, in the context of the project's objectives, was at least as important as production activities. According to the ORT team, this inability was a direct consequence of the changes in their job descriptions which were made by SAED in their "note de service" number 4112 of October 6, 1980.

By modifying the job descriptions, SAED effectively assigned ORT personnel to production functions and assumed that ORT would conduct on-the-job training as an adjunct to their daily activities. The state of disrepair of SAED's equipment and vehicles and the level of disorganization in the workshops and in the supply stores was such that ORT personnel found themselves spending virtually all their time reacting to emergencies and, to use an oft repeated phrase, acting as firemen on an ad hoc basis.

In a meeting held on June 24, 1981 between SAED, AID and ORT (including representation from ORT/London), it was decided that the principal objective of the project remained training. The ORT Team Leader was removed from his production responsibilities as Chef de la Division Technique, and requested to prepare a training plan. The training plan was to be developed in cooperation with

Mr. Moussa Sow of SAED and was to be submitted for review and approval within a period of three to six months. During this transition phase, the other ORT personnel were to progressively remove themselves from production responsibilities in order to devote full-time to training once the training plan had been completed.

During the meeting, various participants indicated specific training needs and concerns which the training plan should address. Among these were the need for literacy training for lower level personnel, upgrading of the heads of various divisions of SAED, training for irrigation pump operators, selection and training of trainers who will eventually take over the work of the ORT team and exploration of the possibility of using Peace Corps Volunteers to assist in organizing the perimeter workshops and training programs. The training plan was also to contain revised job descriptions for each ORT team member. The last half of 1981, therefore, was devoted to a definition of a training plan (annual leave also consumed at least a month during this period).

A meeting was convened on January 18, 1982 in order to review the proposed training plan and revised job descriptions. The participants in the meeting (AID, SAED and ORT) agreed in principle to the revised job descriptions presented by the ORT Team Leader and requested that a work plan be elaborated for each ORT specialist. The only "training plan" shown to the Evaluation Team as being the one presented to this meeting could better be described as a work plan since training was only one

element in the presentation. Given the importance of this exercise, the length of time it took to prepare and the unimpressive results, ORT/London would have been well advised to send a short term consultant to Senegal to draft a comprehensive and detailed training plan which would have addressed the concerns raised in the June 24, 1981 meeting and which would have established specific training targets in terms of numbers and level of personnel to be trained in each relevant discipline.

The workplans requested January 18th were presented in a meeting on January 26th in the form of a series of charts which, with minor modifications, were accepted by SAED and AID.

## 2. Counterpart Training

A follow-up meeting on January 28th presented a plan for overseas training of counterparts and this information was also presented as a bar chart showing times of departure, length of training, location, etc. The chart portrayed the training which was to occur in the following six months (i.e., February - July, 1982). Unfortunately, as of mid-July, 1982, no trainees had begun overseas training and the Evaluation Team was told that the project now expected some trainees to begin their training in September, 1982.

This delay was caused in part by lengthier administrative procedures than the ORT team had anticipated, delays in overseas mail, faulty assumptions regarding the courses offered in a training center in Lome, Togo, and the fact that many courses in Europe are not offered in the summer months. Regardless of the reasons, the result is further delay in training and a

corresponding erosion in SAED's confidence in the ability of the ORT team to deliver on its promises as presented in a training schedule which has proved to be utterly unrealistic.

Although the Evaluation Mission did not have sufficient time to review the substantive aspects of the training proposed abroad for each counterpart and this is outside the scope of work of the Mission, it should nonetheless be noted that SAED has a written policy\* on overseas training of its personnel which emphasizes that staff should not be sent abroad (a) merely as a response to an opportunity offered or (b) as a reward for meritorious service. It is also preferred that personnel be trained in Senegal if equivalent training is available since it is less costly and avoids cultural dislocations. Every effort should be made to be certain that the training recommended for SAED staff in Europe is not available in Dakar. The Evaluation Team has not seen evidence that this effort has been made and would urge that a review of the proposed overseas training be made from this perspective and that the results be submitted in writing to AID and SAED.

The present organizational structure of the ORT team was adopted on December 31, 1981 with the creation of the Cellule de Formation Intégrée (CFI) as a training unit under the Director of the Industrial Division. The CFI structure was agreed upon as a means of emphasizing the training function of the ORT team and of maintaining cohesiveness of the ORT personnel who have inter-

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\* See "Formation a l'Extérieure du Personnel de la SAED," June 2, 1981.

related functions. Counterparts, to the extent they have been available, were expected to work with the ORT personnel and receive informal training from them.

Counterpart training within the CFI, on the whole, has been disappointing and, in too many instances, virtually non-existent.

This has been caused by:

- o Failure to identify counterparts for some positions;
- o Assigning counterparts full-time duties in addition to the requirement to work alongside a specific ORT specialist;
- o Counterparts more often than not were physically separated from their ORT colleague by occupying a different office or wing of the office block;
- o With one exception, ORT personnel generally did not advise their counterparts in advance of their work and travel plans and did not seek ways to involve their counterparts in them;
- o For the most part, ORT specialists did not arrange regular meetings with their counterparts to discuss their work and to review the nature of their counterpart relationship and identify methods and occasions for the transfer of skills and knowledge;
- o ORT personnel, in some instances, were unwilling or unable to establish good inter-personal relations with their counterparts;
- o Movement of counterparts (overseas training in two cases, change in position within SAED, hiring of new employees, etc.)

It is clear that SAED has had difficulty in identifying and retaining counterparts with a suitable educational and technical background to permit them to learn from the ORT personnel and eventually replace them. On the other hand, SAED has nominated and assigned several counterparts who were then not integrated into ORT activities. ORT personnel did not make a satisfactory

effort to make optimum use of the counterparts who were available and did not try to transfer skills and knowledge to them in any systematic way. The one exception to this which was reported to the Mission is the case of Mr. William Barra who has been working with the Machine Tools Specialist since March, 1982.\*

A particular concern of the agricultural machinery specialist who participated on the Evaluation Team is that both counterpart personnel and personnel in the perimeters receiving largely on-the-job training, in addition to learning specific technical skills in operation, repair and maintenance, should also have some familiarity with the techniques and practices required for efficient, economical, mechanized agricultural production. Specifically, understanding the economic consequences of everything from layout and design of fields and irrigation ditches to routine daily maintenance of farm tractors is important in creating a deeper understanding of the context within and the reasons why certain decisions are made in these areas.

For example, a good farm irrigation system design requires a knowledge of soils and techniques of water application. As an example, the farm irrigation system designer desires to have a length of run that will allow for uniform application of water all over the area being irrigated from one field canal,

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\* The Mission was informed that Mr. Barra spent a month in Dakar on a training course for injection pumps with MATFORCE. He will return for two more months to complete the course after the peak agricultural season has passed. Mr. Barra has worked alongside the Machine Tools Specialist and they have made field visits together and meet regularly to discuss their joint work.

but he knows that he needs to consider the fact that the longer the row or the field, the less turning time that will be required for the tractor at the end of the field. The tractor driver should be aware of and do his best to leave the field level after he plows or offset disks an area. Low spots caused by poor plowing collect irrigation water and kill crops because of smothering the root system. The person responsible for scheduling equipment needs to be fully aware of the fact that each hour the tractor loses by traveling too long a distance to the field and back and turning at the ends of the field is lost or non-productive time. He needs to be aware of the costs of owning and operating a tractor and the machine being used.

As an example, if one calculates the cost of owning and operating a Massey Ferguson 2640 tractor and reversible plow, one would make calculations as follows:

Known information:

Purchase price of M-F 2640	CFA	14,613,000
Purchase price reversible plow	CFA	2,500,000
Drivers wages	CFA	45,000/mo.
Diesel fuel	CFA	150/liter
Engine oil	CFA	650/liter

Assumed information:

- 1) 5 year life for the tractor
- 2) 10 yr. life for the plow
- 3) Tractor works 80% of time available
- 4) There are 313 working days per year

Therefore, the hours that the tractor works is:

$$\frac{313 \text{ days}}{\text{year}} \quad \times \quad \frac{8 \text{ hrs.}}{\text{year}} \quad \times \quad 80\% \quad = \quad 2,003 \text{ hrs.}$$

or assume 2,000 hours per year. Assume the plow is used half of the time that the tractor is used or 1,000 hours per year.

Cost calculations:

Depreciation cost per hour:

Tractor:  $14,613,000 \div 5 \text{ yrs. or CFA } 922,600/\text{yr.}$   
or  $\frac{2,922,600}{\text{year}} \times \frac{\text{year}}{2,000 \text{ hrs.}} = \text{CFA } 1,461.3/\text{hr.}$

Plow:  $\text{CFA } 2,500,000 \times \frac{1}{10 \text{ yrs.}} = \text{CFA } 250,000/\text{yr.}$   
or  $\text{CFA } \frac{250,000}{\text{yr.}} \times \frac{\text{year}}{1,000 \text{ hrs.}} = \text{CFA } 250/\text{hr.}$

Wages:  $\frac{6 \text{ days}}{\text{week}} \times \frac{8 \text{ hours}}{\text{day}} \times \frac{4.34 \text{ weeks}}{\text{month}} = 208 \text{ hrs}/\text{mo.}$

$\text{CFA } \frac{45,000}{\text{mo.}} \times \frac{\text{mo.}}{208 \text{ hours.}} = \text{CFA } 216/\text{hr.}$

Repairs: Under ideal conditions assume repairs to be 10% of the depreciation per year, or

$\text{CFA } \frac{2,922,600}{\text{year}} \times .10 \times \frac{\text{year}}{2,000 \text{ hrs.}} = 146/\text{hr.}$

Fuel: M-F 2640 is a 110 hp tractor and will use .25 kg. of fuel per horsepower hour. Diesel fuel weighs approximately 0.781 kgs. per liter. Therefore:

$\frac{0.25 \text{ kg.}}{\text{HP-hr.}} \times 110 \text{ hp} = 27.5 \text{ kg.}/\text{hr.}$

$\frac{27.5 \text{ kg.}}{\text{hour}} \times \frac{\text{liter}}{0.781 \text{ kg.}} = 35.2 \text{ liters}/\text{hr.}$

$\frac{35.2 \text{ liters}}{\text{hour}} \times \frac{150 \text{ CFA}}{\text{liter}} = \text{CFA } 5,280 \text{ per hour for fuel}$

Cost summation per hour:

<u>Depreciation</u>	
tractor	1,461.3
plow	250
<u>Wages</u>	216
<u>Repairs</u>	146
<u>Fuel</u>	5,280
<u>Oil and Grease</u>	
assume 1% of fuel costs	<u>52.8</u>
Total Cost/Hr.	7,353 CFA per hour

Calculations for Owning and Operating Costs  
for Plowing per Hectare:

Tractor speed: 4 kms. per hour  
Width of cut for plow: 1.37 meters  
Area covered per hour:

$$\frac{4 \text{ kms.}}{\text{hr.}} \times 1.37 \text{ M} \times \frac{1000 \text{ M}}{\text{km.}} = \frac{5480 \text{ M}^2}{\text{hr.}}$$
$$= 0.548 \text{ Ha. per hour}$$

or: cost per hectare:

$$\frac{\text{CFA } 7353}{\text{hr.}} \times \frac{\text{hr.}}{0.548 \text{ ha.}} = \text{CFA } 13,417 \text{ per hour}$$

All chiefs of perimeters should be able to make the above calculations. All chefs de colonne should have instruction in ways to increase efficiency of operation for tractors and machinery.

The Bureau d'Etudes that is proposed should initiate a study to determine what the operating costs are and to develop a recordkeeping system for each tractor and piece of machinery to determine repair costs, fuel used, hours worked, etc., so that an accurate cost can be acquired.

There was in most perimeters an obvious lack of good management of the tractors and machinery. SAED and ORT need to identify deficient areas of management and develop training for staff to alleviate those weaknesses based on a sound knowledge of real costs.

### 3. Creation of a Permanent Training Structure

Although the amount of training conducted under the project thus far is unacceptable, this is somewhat mitigated by the fact that some progress has been made in the establishment of a permanent integrated training structure. In order for training to be conducted intelligently, trainers must first know who is to be trained, what their current level of training is, what training needs exist for each individual, what training methodology and which training materials may be most appropriate and what training approaches may have succeeded or failed in the past among the trainee target group.

Annex 4 provides examples of the training structure being devised by illustrating the personnel dossiers for each employee, which include a record of the education and training levels; by showing the kinds of tests which have been prepared to determine the skill levels and training needs of employees; and by providing examples of instructional materials which have been developed in response to the training needs which have been identified. A master personnel file with this information will be kept at Ross Bethio and copies will be provided to each Perimeter Chief for SAED employees at the perimeter in question. When these tests and instruction materials are assembled and an accompanying explanatory text is provided for trainers, SAED will have a teaching/training manual for the reference of its perimeter level trainers and for use by anyone else who is to provide instruction in these areas in the future.

A similar system of dossiers has been established to monitor the use and location of equipment. This is not only important for the efficient use and maintenance of the equipment, but it also allows trainers to know what equipment might be available at which perimeter and when for training purposes. Training can then be scheduled more effectively and without fear of interrupting production activities or finding out that the equipment is not available for instructional purposes.

The greatest weakness in this area is the almost complete lack of transfer of knowledge and skills to Senegalese at Ross Bethio where the system has been developed and the inadequate distribution of the documentation at the perimeter level. The fact that the six Senegalese trainers mentioned in the Project Agreement have not yet been identified let alone trained to use these materials would indicate that it is likely to be some time before the materials are widely used.

There is a very real possibility that the O&M Specialist may carry out his threat to resign rather than live in the housing at Ndiaye in which case the one person who has a thorough knowledge of the system, how far developed the system is and precisely what remains to be completed could suddenly leave the project. Should this happen, a replacement will have to be identified and the progress made thus far will have to be reviewed by someone else after a probable gap of a few months. This will further retard the progress of the project in this area. The present O&M Specialist has had two counterparts assigned to him thus far

but in each case there were personality and other conflicts. Given this history, there may be no option but to find a replacement who is able to work closely with Senegalese and who can continue the work of his predecessor. The resignation threat, however, points up the vulnerability of the project, its dependency on expatriate personnel and the urgency of resolving the counterpart issue to assure the proper transfer of skills.

Finally, to provide a permanent structure may require not only a training methodology supported by materials and audio-visual aids but also a physical environment in which training may occur. Much training is supposed to be conducted in the existing workshops, in the open air, and in the conference room at the Ross Bethio base, however, the training facilities listed in the SAED-ORT contract which SAED promised to make available have not been provided. Some training may need to be in a formal classroom setting even if on-the-job training is the preferred and usual training approach. The Center at Ndiaye has limited training facilities but these are often used by their students. The issue of what training facilities are needed should be resolved with the eventual reconstruction of the base at Ross Bethio but, for now, this acts as a further constraint on the project.

D. CURRENT STATUS AND ASSESSMENT OF AID PURCHASED PROJECT WORKSHOP EQUIPMENT AND HANDTOOLS

The basic handtools and workshop equipment necessary for project implementation have been ordered and received. There remains one order of machine tools which is yet to be received. Shop equipment and handtools have been distributed to the perimeter workshops, but most of the tools and equipment have not yet been put to use.

An inventory prepared by the ORT team of all handtools and workshop equipment is attached in Annex 2. This inventory shows an assigned inventory number and location if the item has been distributed.

If the item has not been distributed, the location is not shown as it is still in the central warehouse in Ross Bethio. Most of the items that have been distributed to the perimeters are still in the perimeter storeroom. When questioned as to why the tools and shop equipment are not being used, the ORT team replied that the tools will disappear before training of workshop staff is scheduled to begin. According to ORT, the training of workshop staff should not start before the workshops are constructed and/or renovated. In fact, some handtools which were received before the ORT team arrived were distributed by SAED and are already lost. Annex 2 contains a list of supplementary or replacement tools which was prepared by the ORT team.

A few pieces of equipment, micrometers, were supplied in the English rather than the metric system. The USAID Supply

Management Office will rectify this problem as soon as it receives the English system micrometers from ORT. Some electrical test equipment that was ordered is considered by ORT to be too sophisticated and some electric motor driven equipment was supplied for 110 volt use, but transformers were supplied. There are very few problems with the equipment.

The biggest problem with the purchase order for equipment has been that no satisfactory record was kept relating to the purchase order and PIO/C numbers. Receiving reports as of the date of the evaluation have not been signed. Some of these are dated in late 1978. ORT and the USAID/Senegal liaison office in St. Louis are having difficulty in reconciling equipment and tools received to purchase order and PIO/C numbers. Early in the project, the AID project manager insisted that SAED had an adequate record of goods received. At that time, USAID/Senegal did not have a Supply Management Office and the project manager was able to convince those concerned that receiving reports were unnecessary.

Until an audit is made of Purchase Orders issued and shipments received, it will be difficult to determine the balance remaining in each PIO/C. The Supply Management Office should not de-obligate funds in a PIO/C until it can be determined that all goods intended for purchase have been received.

Eventually, a reconciliation of equipment received in relation to what was ordered will have to be made. The longer it is delayed, the more difficult the task will be

The delay in initiating training has delayed the utilization of AID financed purchases for handtools and shop equipment. If ORT had been put in training positions on their arrival, probably training would have already been started which is the intended purpose of the project. Conceivably, formal and on-the-job training could have begun within six months of the arrival of the team had SAED not utilized the ORT so extensively in production assignments.

It was originally intended that the machine tools at the workshop in Richard Toll were to be renovated for use of the workshop there. Renovation would have required a thorough cleaning and inspection, making necessary repairs, checking for missing attachments in workshop storerooms and procuring of missing attachments from the manufacturers of the machines. The Project Paper contained a waiver for purchasing the attachments necessary. When it was decided that the workshops at Richard Toll would not be renovated, reconditioning of the machine tools was also cancelled. The budget item for the renovation of the workshop and renovation of equipment was changed to purchase new machine tools locally. This was done without amending the Project Agreement to change the purpose for which the budgeted money was to be used and without obtaining a waiver. SAED placed an order for the machine tools with a local supplier. The supplier failed to deliver within the specified delivery date. SAED cancelled the order. In the interim, the order was already on the way to Senegal. It has been delivered to Ross Bethio but title or ownership still remains with the supplier

as SAED has not accepted delivery. This problem remained unresolved at the time of the evaluation.

E. CURRENT STATUS OF THE SUPPLY MANAGEMENT SYSTEM

The original ORT team member to serve as the Supply Management advisor accomplished little toward improving the system of supply management. Apparently, his primary area of interest was in the purchase of spare parts and he had little interest in stock management. Therefore, nothing was accomplished in improving the stock management system during his tenure. ORT was asked to replace him late in 1981.

The incumbent supply management advisor of the ORT team has been in St. Louis since about April 1982. During his brief tenure he has had time to make substantial progress toward formulating a system of stock management of spare parts. In addition, he would like to develop a system of machinery management for determining costs of using agricultural machinery, vehicles, heavy construction machinery, and irrigation pumps and engines or motors. This would incorporate a phased depreciation system which would allow SAED to implement a rational system of machinery replacement.

Upon his arrival in St. Louis, the stock management advisor made a survey of the warehouses in Ross Bethio and the larger perimeters to determine short-term actions needed to alleviate problems requiring urgent attention. The primary need was to acquire some sort of rational stock bins system as very little had been done by SAED to solve this problem. Sketches of bins were made and a contract was written with a metal shop in St.

Louis to produce the required shelves and supports. These have not been completely assembled as the new warehouse has not been constructed nor the renovation in the perimeters completed. Instructions on the assembly, erection and use of the new bins have been developed. An example of this is in Annex 3.

The new system of stock management proposed a coding system that will allow the stockman to more readily identify parts for a particular machine. Examples of coding system cardex cards, etc. and instruction on the use of the system are in Annex 3.

Priority will be given to the warehouse in Ross Bethio. It is proposed that the "Division Magasin Central" will have some jurisdiction over stock management in the perimeters. (The perimeter warehouses are under the management of the perimeter chiefs who report to the Production Division of SAED. In order to rid the perimeters of "dead" stock, that is, spare parts for machines no longer in use by SAED, the parts in the perimeter stock room will be identified, coded according to the new system, and put in parts bins. Parts for machines which are no longer used in that perimeter will be moved to Ross Bethio for issue to other perimeters where needed or sold to public bidders if no longer needed by SAED. Disposition will be determined after all perimeter warehouses have been inventoried.

Since the perimeter chief is in charge of all vehicles and machinery at the perimeters, and since all perimeter personnel work for him, there is no guarantee that the system proposed

will be adopted. It would be in the best interests of SAED management to require its adoption.

There are several constraints that hinder change in SAED stock management and procurement procedures. The supply management advisor has to have the approval of the Director of the Industrial Division before he can carry a proposal to the Financial and Administration Divisions. This includes routine spare parts orders. Before the proposed system of stock management is installed even though the Industrial Division has approved, it will have to be approved by the Financial, Production and Administration Divisions. Another bottleneck to efficient stock management is that purchase orders for spare parts do not necessarily go through the "Division Magasin Central" of the Industrial Division as the Perimeter chiefs have the authority to make direct purchases of spare parts and bypass the "Division Magasin Central."

Another constraint has been that the post of division chief of the "Division Magasin Central" has been vacant for several months. Recently someone has been appointed to the post on a trial basis for 3 months. If it is determined that he has the necessary qualifications and ability to function in the position, the appointment will be made permanent.

The incumbent supply management advisor does not feel that the time remaining in project funding for technical assistance is sufficient for the training required to leave behind an adequately trained staff. An appraisal of accomplishments in stock management at the end of his present contract needs to

be made by AID and SAED.

Training of workshop foremen at the perimeters will be done by ORT staff responsible for advising in workshop management but training of the warehousemen in the perimeters will be done by the stock management advisor. Training proposed in stock management may be found in Annex 3.

No progress has been made in improving stock management at the perimeter level as there has not been time to solve all of the problems in the Central warehouse in Ross Bethio. As problems in Ross Bethio are solved the solutions will be adapted and applied at the perimeter level. The workshop management advisors for the perimeters will assist in introducing the new stock management system after the perimeter warehousemen are trained.

So far, the warehouse staff in Ross Bethio has been receptive and willing to learn the new coding system. There are a few suggested changes for which the need is not readily apparent to the warehouse staff. As an example, good stock management requires not only a cardex file, a similar device, on each part stocked but also a log or record of all parts in and all parts out by part number. So far, the log has not been kept as it should be.

One of the problems faced is the difficult process for the purchase of spare parts. The system needs simplification. The process of purchase was described as follows.

The person bringing in the order from the perimeter frequently comes in for the part without full details on the piece

of equipment for which the spare is needed. Sometimes he has to return for more information. Once the part needed is identified, the Central warehouse will send someone to St. Louis for a pro forma invoice for the needed part. It is preferable to get three pro formas to satisfy the Direction Financière. The purchase order is then typed, the pro formas are attached and sent to the Director of Industrial Division for signature. Following his signing, the order comes back to the warehouse after which it is taken to the purchasing office in D.F. which is in St. Louis. The purchase order is registered. It then goes to the budget office in D.F. for designation of the budget item to which the purchase is to be charged. It then goes to the Director of D.F. for signature. Following his signature, the purchase order comes back to the Central Magasin for purchasing the item. This can take from three days to four weeks by which time the supplier may have sold the spare part before the Central Magasin sends someone to make the purchase.

Spare parts equivalent to 10 percent of the value of the new machines are ordered with each purchase of machinery. The local supplier has a tendency to send spare parts in which he has an overstock rather than fast moving spares. There has been some success in getting a list of spares supplied before the purchase is consummated but this has not been 100% successful.

There has not been time for the present supply management advisor to devise a system of phased depreciation of equipment but as soon as time permits he plans on initiating action.

The present supply management advisor seems to have things well in hand. In a short period of time he has developed a system that seems to be workable and acceptable to SAED. Changes have been made. Every effort should be made to keep the man in his position for the balance of the time for which financing of technical assistance is provided.

F. CURRENT STATUS AND ASSESSMENT OF CONSTRUCTION

There has been considerable delay in the construction and renovation of a central supply base from which the project can operate at optimal level. This has been caused, in part, by the recommendation of the ORT team to shift the location of the base from Richard Toll (the site identified in the Project Agreement) to Ross Bethio and, in part, by lengthy procedures and the sometimes inefficient handling of accompanying paperwork.

In November, 1980, about one month after the arrival of the ORT team, they presented a proposal\* for the reorganization of the Industrial Division which included a recommendation to establish the principal repair base at Ross Bethio. This proposal was accepted by SAED and AID in a joint meeting held in December, 1980.

As of July, 1982, construction had not yet begun for the following reasons:

- building plans had to be drawn up and approved;
- bids had to be solicited and reviewed and one had

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\* See "Réorganisation de la Division Industrielle: Proposition de réaménagement de la Base centrale de ROSS BETHIO," Mission ORT, 11/80, pp. 14-15.

to be selected ("appel d'offres");

- insufficient coordination among the various actors resulted in slow processing of paper work;
- the lack of a "Maître d'Oeuvre" to oversee developments leading to the beginning of construction for the period prior to August 27, 1981 also contributed to delays;
- final approval by the USAID Engineering Officer was required (received in February, 1982);
- release of funds is required from AID's regional office (REDSO/West Africa) in Abidjan (pending as of mid-July 1982).

The first regular meeting of the Construction Committee on August 27, 1981 helped to speed up this process by naming the ORT Team Leader as the construction supervisor (Maître d'Oeuvre") and by facilitating regular communication among the various bureaus and organizations concerned with the construction. Construction plans were completed in October, 1981, bids were solicited with a deadline for submissions of February 27, 1982, and one of the two firms which submitted proposals was retained in March, 1982 for the sum of 125 million CFA (US \$477,000). The agreements were then reviewed by SAED and submitted to AID for approval on May 7, 1982. This approval was still pending at the time the Evaluation Mission left Senegal (July 6, 1982).

During the Evaluation Mission's visit to Senegal, the AID project Manager based in St. Louis stated his belief that the recommendation to move the base to Ross Bethio may not have been sound and may have been motivated by a desire on the part of the ORT team to reinforce its claim to live in St. Louis rather than in the more difficult conditions of Richard Toll.

The Project Manager asked the AID PDO/Engineer to visit the base at Richard Toll and provide a written opinion on this issue. The Engineer provided a written report that raised serious doubts about the soundness of the ORT recommendation, pointing out that nine different studies completed between 1973 and 1978 formed the basis for the placement of the base at Richard Toll and emphasizing that the ORT project proposal itself stated that "Richard Toll is obviously, therefore, the ideal site for the future center. Both the general design and the capacity of the existing buildings meet the present needs of SAED. . ."

The Engineer stated his belief that the ORT team was not aware of the work done previously in selecting Richard Toll or that they may have preferred Ross Bethio simply because of its proximity to St. Louis. The Evaluation Team can only conclude that there are serious doubts about the wisdom of shifting the base to Ross Bethio and that many of these doubts appear well-founded. Unfortunately, the moment to address this issue was in December, 1980 at the joint SAED-AID-ORT meeting when this proposal was considered and accepted by all parties rather than eighteen months later when the use of Ross Bethio is a virtual fait accomplis.

Given the time which has elapsed and the progress which has been made in advancing the construction plans for the Ross Bethio center, the Evaluation Mission believes that reopening this issue at this stage would be more harmful to the overall goals of the project than any benefit which could be derived from shifting the site back to Richard Toll and beginning over again.

The delay in construction has caused delays in adopting the stock management system and in the training of workshop staff. Further delays in construction (possibly one to two years if a decision were made to return to the Richard Toll site) would result in the inability of the project to deliver needed technical assistance to SAED for that period in an efficient manner. Technical personnel should, under such circumstances, probably be withdrawn altogether until the site at Richard Toll and the housing was ready. Should that occur, AID might be better off terminating all but the construction aspect of the project and starting over with a new contract in 1984. Such drastic measures do not seem warranted since SAED believes it can work from the Ross Bethio base and the project can be decentralized in other ways through the assignment of Mechanical Trainers to the perimeters as recommended elsewhere.

### III. FINDINGS AND CONCLUSIONS

#### A. MANAGEMENT, ADMINISTRATION AND FINANCE

##### 1. A.I.D. Management, Administration and Finance

- a. Purchase of Commodities. AID ordered equipment in a timely manner so that it was available for use upon the arrival of the ORT technical assistance team.
- b. Suitability of Equipment. The equipment which was purchased, on the whole, was suitable and appropriate for the project.
- c. Purchase of Machine Tools. Nine machine tools at a cost of over \$200,000 were ordered locally without a proper waiver being obtained. Due to delay from the supplier, the local contract was cancelled by SAED before the actual arrival of the equipment. Shortly thereafter the equipment was delivered. Although it is irregular, the Mission concludes that it would be advantageous to the project to request a waiver and keep the delivered tools rather than return them and then reorder from the U.S. The delayed arrival of this equipment and the current uncertainty regarding whether the equipment now in hand will be kept is one factor which has delayed the beginning of training in the use of machine tools. Reordering from the U.S. could result in a further delay of several months.
- d. Receiving Reports. During 1980, the then AID Project Manager persuaded AID that SAED had an effective system for receiving equipment. As a consequence, receiving reports were not required from SAED/ORT. Receiving Reports are designed to keep track of commodities received on each

purchase order. The absence of these documents led to uncertainty regarding which commodities were actually received and whether any were missing. (During 1982 an inventory of AID equipment was completed and AID has satisfied itself that about 95% of commodities were received. See Annexes 2 and 6.)

- e. Project Manager/Coordinator Turnover. From October 1978 until June 1982, the project has had four project managers/coordinators (Yellot, Worthington, Skapa, Jepson and Carvin). Although the Mission recognizes that this was unavoidable in some cases, it nonetheless concludes that the frequency of personnel turnover in this position had a deleterious effect on the effective management of the project.
- f. AID/St. Louis Liaison Office. The Mission concludes that the opening of a Liaison Office in St. Louis was an important factor in the improvement of project management and resulted in a reduction of the time lost from administrative delays. It also promoted more effective monitoring of project activities by AID. The office appears to be well equipped and documentation was well organized.
- The Project Manager in St. Louis has provided generally efficient support from AID to the project and is to be commended for the improvement in project administration from AID which was observed by the Mission. However, the position requires an individual with greater maturity and objectivity who is able to maintain a sense of perspective and balance with regard to the strengths and weaknesses of all parties involved. It is essential to maintain a positive atmosphere of

collaboration which will foster the resolution of project problems and promote effective communications.

- g. Orientation of Evaluation Mission by AID Project Manager in St. Louis. The Project Manager made basic documentation available to the Mission well in advance of its start up and was cooperative in arranging meetings and transport and in providing additional documentation as requested. The Mission concludes, however, that the project manager failed to provide an objective and unbiased analysis of project constraints. This resulted in misleading initial impressions of the nature of project constraints and the degree of project progress.

2. SAED Management, Administration and Finance

- a. Need for an Effective Management Style. The Mission notes that there appears to be a very informal and inconsistent style of management within the Industrial Division of SAED. Decisions are sometimes communicated informally and then not confirmed in writing. Decisions communicated in this manner are then sometimes modified and the modifications are not always communicated to the persons concerned. This results in confusion, frustration and inefficiencies. Effective management requires timely decision-making and appropriate follow-up to ensure that decisions which have been made are implemented.
- b. Need for the Interpretation of Project Objectives by SAED Project Management for SAED and ORT Personnel. The Mission concludes that the objectives of the project and the means to achieve them could be more fully communicated to SAED and ORT

personnel by the SAED management. For example, the nature of "production" as opposed to "training" responsibilities and the degree of on-the-job training which is or was expected to be linked to production does not seem to have been clear to several SAED and ORT personnel. Although there was a general preference expressed in September 1980 by SAED to place a priority emphasis on reorganization and there was a clear shift to a priority on training after December, 1981, the precise tasks to be accomplished and the degree of informal training expected as a component of reorganization was never spelled out. The Mission believes that SAED management ought to define its expectations more precisely and completely and ought to define in more detail the expected role and responsibilities of counterparts.

- c. Appointment of a Training Coordinator. Under the terms of the Project Agreement (p. 23), a Special Covenant was included which required SAED "to appoint a Training Coordinator and a training staff adequate to continue the training program after the termination of the project." As of July 1, 1982 no coordinator has been appointed. The Director for the Industrial Division serves as the SAED Project Manager and as such has overall responsibility at his level for the project from SAED, however, he cannot be considered to be functioning in this capacity.
- d. Exoneration of Senegalese Taxes. The Mission has noted that the process of obtaining an exoneration from the payment of Senegalese taxes on purchases made locally with AID funds for project equipment and supplies is lengthy. Such exoneration is a requirement under the 1961 bilateral agreement

signed between the governments of Senegal and the United States for all purchases in excess of US \$500 or the equivalent in local currency. The procedural requirements for exoneration regularly result in the delay of acquisition of needed project materials. This adversely affects, in particular, the maintenance and repair of agricultural machinery.

3. ORT Management, Administration and Finance (ORT/LONDON)

- a. Orientation of Staff. The Mission concludes that ORT failed to provide satisfactory orientation to its personnel prior to their arrival in Senegal. ORT personnel did not have an accurate idea of the environment in which they would be living and working and were not prepared in a way that could permit them to have a clear sense of their job responsibilities.
- b. Provision of Training Materials. An effective manager in London should have observed that a large number of the tests and training materials required by the project are for relatively standard types of tests and courses in vocational institutions. The Organization and Methods Specialist has spent considerable time and effort developing such materials for SAED. The Mission believes that ORT could and should have provided materials from previous projects which could be used or adapted. The content and format of training materials need to be localized to be as relevant as possible to project conditions but this does not require the development of wholly new materials in most circumstances.

4. ORT/SENEGAL Management, Administration and Finance

a. Initiative and Leadership from ORT Personnel.

The Mission has found through numerous interviews that there was an inadequate degree of initiative and leadership taken by ORT personnel in instances where specific actions could have advanced project objectives. The lengthy delay in preparing a training plan, a work plan and a budget during 1981 and the failure to be more aggressive in taking optimum advantage of the limited time of counterparts which was being made available by SAED to the project are examples of lost opportunities. It is recognized that these basic project working documents were to have been prepared jointly by SAED and ORT, however, ORT could and should have been more active in encouraging SAED to participate in a process leading to their formulation.

b. Timeliness of Reports. The Annual Report from ORT for January-December, 1981, was completed in late June, 1982. Some Quarterly Reports were late in being prepared. The "training plan" requested in 1980 was never prepared and the work plan asked for in late 1980 was finally prepared in December 1981 for the first six months of 1982. Regular project reporting and follow-up of points raised in reports is an important component of project management for all parties.

c. Training Equipment Orders. Funds budgeted in the yearly allotment for training aids were spent for other items (e.g., office furniture) or were not spent when planned. Training equipment will be needed as training proceeds and ORT should have made its needs known in this area in a timely manner and encouraged the purchase of this equipment.

- d. Working Hours. The question of working hours has been a point of irritation between SAED and ORT personnel. For several months, ORT personnel were working a "continuous day" and leaving around 3 p.m. for the day. This practice was halted when SAED's Director General learned of it. Subsequently, ORT personnel decided to arrive at work later and leave earlier than their SAED colleagues and they also refused to work on most Saturday mornings; a regular work period for SAED. ORT personnel should be required to work a forty hour week (at present we are told they work 35 hours per week compared to SAED's 48 hours).

B. CURRENT STATUS AND ASSESSMENT OF PERSONNEL

1. The ORT Technical Assistance Team

- a. Team Leader/Diesel Mechanic Specialist (J. Picasso)  
The Specialist was recruited to assist in the reorganization of the central repair shop and those of the perimeters, to provide on the job training to the staff of the workshops and to participate in the production process. The priority established by SAED in September, 1980 stressed production even at the expense of training. Within this framework, the Specialist was required to spend the majority of his time on production activities and found himself being used as a "fireman" (a phrase used by SAED's Deputy Director General in February 1982) to resolve urgent problems on an ad hoc basis. The Mission has found that the organizational and manpower constraints within SAED which led to a work pattern of this sort seriously hindered the Specialist's ability to realize the objectives outlined in his job description. The Specialist

noted this problem in a report to AID dated March 1981 in which he stated ". . .new SAED priorities have required the ORT team to set aside the principal objective of the project which is training even though we have advised that training is at least as important as other objectives and deserves the same priority."

The Mission believes that the Specialist is technically competent and made a good faith effort to respond to the shifting demands placed upon him by SAED. For much of the time, the Team Leader was required to act as team leader only with respect to administrative requirements of ORT and SAED and did not function as a Team Leader in the sense of being someone responsible for the coordination of ORT personnel professional activities and for policy development.

On the other hand, the Specialist failed to take initiatives and exercise a leadership role within the constraints imposed upon him. The share of responsibility which was ORT's for the preparation of training and work plans and annual budgets was not met in a satisfactory manner. This contributed to the sense of drift which comes from the long term absence of precise work plans enumerating tasks and setting deadlines. Further, the Specialist could and should have made a more serious and sustained effort to involve his counterpart in the work in which he was engaged and to provide on-the-job training in connection with his production responsibilities.

b. Specialist in Agricultural Machinery (U. Pirani)

The Mission concludes that the Specialist is technically competent, that he made an important contribution to SAED in the preparation of bids

and the proper selection of agricultural machinery and spare parts. He also received equipment in a proper manner and ensured its distribution to the perimeters.

Unfortunately, the Specialist made almost no effort to transfer his knowledge to his Senegalese counterparts and was unable to establish meaningful professional or personal relationships with his Senegalese colleagues. The Mission notes that this failure to plan for and invite counterpart participation has acted to constrain the achievement of project objectives. His overall attitude is reflective of a cultural insensitivity and negativism which is inappropriate for personnel assigned to this project.

c. Specialist in Organization and Methods (Conrad)

The Mission concludes that the Specialist is technically exceptionally competent and has made a significant contribution to the overall organization of the Industrial Division through the establishment of personnel and equipment files, the preparation of tests and training materials and established a framework for the conduct of an equipment inventory. He also created a system to use the information gathered in the inventory.

During the first year and a half on the project, the Specialist was unable to work with either of the counterparts assigned to him. A combination of personality conflicts and uncertainty about lines of authority and assignment of job tasks contributed to this. The major deficiency has been the lack of transfer of knowledge to Senegalese and the insufficient distribution and use of the materials which have been prepared at the

perimeter level. Recently, some Senegalese have stated they have noticed a more positive approach by the Specialist in his relations with his colleagues.

d. Specialist in Machine Tools (Moreillon/Godet)

Mr. Moreillon was a specialist in diesel mechanics and workshop management and was replaced by Mr. Godet who is a machine tools specialist and workshop manager. The Mission found that Mr. Moreillon was a well organized trainer in diesel mechanics who resigned because he said he was unable to carry out training in an environment where production was pre-eminent.

Mr. Godet arrived in October, 1981 and has conducted an inventory of AID purchased equipment, distributed tools to the perimeters and is developing workshop reorganization plans. The Specialist works closely with his colleagues. The Specialist could and should take more initiative in his areas of responsibility. The Mission does not agree that training must await the completion of the workshop reorganization effort and believes that, with more initiative, some on the job training activities could be identified and executed.

e. Specialist in Supply Management (Yziquel/Coppolino)

Mr. Yziquel did not perform satisfactorily in this position and was replaced by ORT with Mr. Coppolino who arrived in March, 1982. The present incumbent of this position, in a very short period, has designed a supply management system, ordered stock bins, initiated actions in the central supply warehouse to implement the system and has studied SAED purchasing procedures in order to suggest ways to improve efficiency. He has been unable to work with a counterpart until very recently.

During the visit of the Evaluation Mission, a Mr. Guisse was designated by SAED as his counterpart on a trial basis. The Mission believes that the Specialist needs more cooperation and support from the other Divisions within SAED.

2. SAED Personnel

- a. Counterparts. There have been several difficulties with respect to counterparts on this project:
- o there are conflicting definitions of the role and responsibility of counterparts,
  - o there are conflicting understandings regarding the share of time that a designated counterpart should spend as a counterpart as opposed to having independent tasks and responsibilities within the SAED framework and,
  - o the identification and selection process for counterparts is not clear.

With respect to these issues, the Mission has found the following:

- 1) Conflicting Definitions. The Director General of SAED has concluded that a counterpart should serve in a subordinate position since it is difficult if not impossible to have two individuals on the same level making decisions jointly. Therefore, he prefers the term "adjoint" (assistant) to that of "homologue" (counterpart). The usual definition of the relationship between technical assistants and their host country national colleagues from an AID perspective is one of equality. It is normally preferred that the host country national occupy the position in question and that the technical assistant should act as an advisor. The role of advisor is often found at the technical as well as policy level on AID financed projects. Technical guidance in decision-making is often critical to the achievement of project objectives and it enables the host country national to remain in a position of authority even while receiving assistance on technical matters.

There is a serious discrepancy between these two views. As a consequence, the role and the level of responsibility of Senegalese counter-

parts (assistants?) has been unclear. Different Senegalese in these positions and different ORT personnel have interpreted their roles differently resulting in frustrations and resentment in some cases.

- 2) Conflicting Understandings. The share of time that a designated counterpart or assistant is to spend working directly with an ORT technician has been a matter of dispute. The Mission noted that from one to a maximum of 25% of the time of various Senegalese seconded to the project is actually spent on activities related to the project or with the ORT technical personnel. Most of the Senegalese in question are assigned other duties on a full time basis by SAED. These duties are in production which is considered to be the highest priority of the organization. AID, on the other hand, usually requests and prefers that counterparts be assigned on a full-time basis to work with technical personnel. As a result, expectations vary regarding the degree and kind of work which should be undertaken jointly by the counterpart (assistant) and the technical specialist. This has also caused frustration and disagreement.
- 3) Identification and Selection. ORT personnel believe that they should be more fully associated with the process of identification and selection of counterpart personnel. ORT personnel also have a specific idea of the qualifications which counterparts should have at the time they are named to this role. As a consequence, ORT personnel have sometimes been dissatisfied with the personnel assigned to work with them. On the other hand, it is to be expected that counterparts will not necessarily be qualified. What is important is that they be trainable; that is, that they have the potential to learn the jobs of the technical advisors in order, eventually, to replace them. The degree to which those identified are trainable is in dispute, however, the Mission concludes that, with few exceptions, the ORT team has not made the necessary effort to work with those people who have been selected.

- b. Trainers. The Mission notes that the six trainers called for in the Agreement between SAED and ORT (p. 8) have not been provided. SAED believes that the "Chefs de Colonne" (Agricultural Machinery Work Foreman) should also function as trainers, however, the "Chefs de Colonne" now in place have not been named to these positions or reviewed for their potential to assume these positions.
- c. Provision of Support Personnel. The Mission notes that under the terms of the SAED/ORT Agreement, SAED was to provide a support team to the project consisting of a secretary/typist, drafting technician, operator for reproducing machines, chauffeur and an orderly. As of July 1, 1982 only one support person has been provided.

### 3. Reorientation of the Personnel Component

As noted elsewhere in this report, the Evaluation Mission has concluded that the basic objectives of the project remain sound and the need for assistance in the areas identified in the project paper and project agreement remain as great as ever. The project, during the twenty-one months since the arrival of the ORT technical assistance team, has failed to provide significant amounts of training of any sort and has failed to make a significant difference in the perimeters in the areas of repair or reorganization. Although there are numerous reasons why this is so and these are discussed elsewhere, the overall character of the project reflected a movement away rather than towards direct and sustained involvement in the perimeters. This movement is evident (a) from the shift away from use of the repair facility at Richard Toll in favor of the base at Ross Bethio, (b) the

insistence of ORT personnel that they would only live in St. Louis, and (c) the fact that the ORT personnel spent a very minimal amount of time in the perimeters. While there may be arguments in favor of each of these points and while SAED and AID may have agreed to some of them for a variety of reasons, the overall effect was to shift the project toward the regions closest to St. Louis and away from the perimeters where the *raison d'être* for the project continues to lie.

Therefore, the Mission has concluded that the present composition of the technical team does not represent the most effective combination of skills or placement of personnel. Similarly, the placement of counterparts, the identity and level of the six trainers and the nature and level of support personnel which is required is also in doubt.

### C. CURRENT STATUS AND ASSESSMENT OF TRAINING

#### 1. Amount of Training Conducted to Date

The absence of any significant amount of training during the first twenty-one months constitutes the major failure of this project to date. A primary reason for the lack of training during this period was the modification of the job descriptions of the ORT personnel in September, 1980, which resulted in production responsibilities taking precedence over those of training. SAED believed at the time that ORT personnel would be able to engage in production activities while also providing much more on-the-job training than turned out to be the case. ORT personnel found themselves engaged full time in a variety of production activities, often on an ad hoc and as needed basis. After it was observed

in mid-1981 that little training was being accomplished, the ORT Team Leader was removed from his production responsibilities and was requested to work full time on the preparation of a training plan. After his return from annual leave in late August, he developed a draft "training plan" which was accepted by SAED in December, 1981.

The six month "Training Plan" was for the period January to June, 1982. In fact, the "Training Plan" was more of an overall work plan in which the training component remained a minor part of the plan's content. The Mission concludes that ORT failed to provide a "Training Plan" and SAED and AID failed to object to the minimal role of training in the erstwhile "Training Plan". During the past six months, therefore, there has been only minor improvement in the volume of training being provided.\*

## 2. Training of Counterparts

The Mission's conclusions regarding the counterpart question are also presented in Section B.2. (SAED Personnel) so that comments here are confined to the training provided through ORT initiatives. As noted in Section B.1., with the single exception of the Machine Tools Specialist, the ORT team has provided little or no training. The Mission believes that responsibility for this failure should be shared between ORT

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\* During 1982 five people were sent to Dakar for training (two electricians and three machine tool personnel and 167 people are recorded as enrolled in courses organized by ORT and conducted by the suppliers (Fiat, Huard and Massey Ferguson). Some people took more than one course so the total number of people involved was less than 167.

and SAED (which failed in some cases to provide counterparts at all and in other cases to assure that the designated counterparts had a job profile providing sufficient time to permit adequate interaction between the Specialist and the counterpart), however, the major burden for this failure must be borne by the ORT team which repeatedly did not take advantage of opportunities to develop both personal and professional relationships with those counterparts who were made available. The Mission believes that much more counterpart training could have occurred if ORT personnel had taken the initiative to request regular meetings to share information, had informed counterparts in advance of their travel plans and invited them to accompany the ORT team members to the perimeters, had requested them to assist in the preparation of training materials and in the design of personnel and equipment control systems and so forth.

Similarly, in the case of the six trainers ("formateurs") who were supposed to be counterparts to the Specialist in Agricultural Machinery, ORT could and should have made an effort to assist SAED in identifying these personnel and in making a beginning towards the development of a training program for them.

### 3. Overseas Training of Counterparts

A schedule for overseas training was prepared by ORT in which SAED personnel were to begin training abroad during the first six months of 1982. As of July 1, 1982, no one has begun this training. The delay in overseas training has been caused by unexpectedly long delays in correspondence with European training centers, by the fact that some training courses will

begin only in September (W. Senghor and M. Ba are scheduled to depart for training in September, 1982), and by poor initial estimates of the time it would take to organize overseas training programs. In addition, ORT found that the training center it had planned to use in Lome, Togo, was no longer of a suitable quality, thus necessitating contact with other training centers.

4. Progress Toward the Establishment of a Permanent Training Structure

The Mission has concluded that there has been limited progress toward the realization of this central project goal. Personnel files have been established and information about the present educational profiles of all SAED employees has been entered into this system, agricultural and construction equipment files have been set up permitting trainers to know what equipment may be available for training purposes in which perimeters, standardized tests have been established to measure current knowledge and what has been learned and training materials have been prepared for a number of short-term training courses.

The Mission was given the impression that some SAED personnel do not fully appreciate the importance of a "permanent structure" as a necessary pre-condition for the type of training effort which is required. Understandably, some people tend to look excessively at the amount of training achieved to date as virtually the sole measure of project progress. In fact, the training needed within SAED is a permanent need. Training must be seen as an ongoing process in which new employees are trained, current employees are upgraded and selected employees have their

skills broadened into new areas. The Mission has concluded, therefore, that although the absence of any significant amount of training is the major failure of the project to date, this fact is mitigated somewhat by the progress made in the area of training structure. The principal failure in the effort to establish such a permanent structure has been the almost total absence of Senegalese participation in its development.

There does not seem to be a general consensus between ORT and SAED on the exact form training should take. On the one hand, there is a general opinion amongst SAED personnel that nearly all training should be OJT which does not require any formal training. On the other hand, ORT personnel who are the professional trainers are of the opinion that there should be a blend of OJT and formal training. This difference of opinion has also hindered the development of an effective training structure.

##### 5. Relations with the Training Center at Ndiaye

As a result of the Mission's meeting with the Director of the Center and discussions with SAED and ORT personnel, we have concluded that possibilities exist for cooperation between the Center and the project but that these are limited by the Center's own needs for its classrooms and workshop. The project personnel are welcome to use Center facilities to the extent that can be scheduled in harmony with Center programs. The workshop at the Center is equipped for training in most basic areas of agricultural machinery.

6. Provision of Training Facilities by SAED

The Mission has found that the training facilities which are listed in the SAED/ORT Agreement have not been provided by SAED. (These include a demonstration workshop, two classrooms, a building to house 20 to 25 trainees and space for audio-visual apparatus.)

D. STATUS AND ASSESSMENT OF PROJECT EQUIPMENT

1. The necessary AID project documentation (PIO/Cs) was prepared and processed in a timely manner. Most hand tools and workshop equipment necessary for project implementation have been received. The equipment has also been distributed to the perimeters, however, most of it has never been used since very little training has been conducted thus far.

2. An inventory of project equipment purchased by AID was prepared by the ORT team with the assistance of SAED (see Annex 2). It shows inventory numbers and indicates the location of the equipment which have been distributed.

3. Most equipment now located in the perimeters is in storage pending the beginning of training activities. The Mission has found that they are stored to prevent loss or theft. This is an important precaution since some hand tools which were received before the arrival of the ORT team have already been lost. Annex 2 also contains a list of supplementary or replacement tools prepared by ORT.

4. The only significant problem regarding equipment was that no satisfactory records were kept relating orders to the purchase orders and PIO/C numbers. The present AID project

manager has done a creditable job in reconciling most orders and, therefore, largely resolving this problem. A few pieces of equipment (micrometers) were supplied in English rather than metric measurements, some electrical test equipment is considered by ORT to be too sophisticated for SAED's needs and some electric motor equipment was supplied for 110 voltage and had transformers enclosed but, on the whole, the accounting, condition and choice of equipment is remarkably good.

E. SUPPLY MANAGEMENT SYSTEM

1. The system of supply management now in use by SAED does not allow for the acquisition of information on the most commonly required spare parts for a particular machine, it only keeps a record of parts in and out of the warehouse. A system of supply management that will allow for the above as well as information on the availability of spare parts at the perimeter level is necessary for an effective system of supply management.

2. The most common problem mentioned to the Evaluation Mission by the perimeter chiefs is the unavailability of spare parts. This is due largely to the fact that a system of spare parts management at the perimeter level is virtually non-existent.

3. There was no basis for the establishment of a system of equipment management until the ORT team arrived and made an inventory of equipment which lists the machine and model number, serial number, date of acquisition and condition at the time the inventory was conducted. This inventory will permit the development of a system of equipment management that will allow for the phased depreciation of equipment.

4. The incumbent ORT team member responsible for Equipment and Supply Management has devised a system of management that will establish:

- a. A common codification system for the central and perimeter warehouses that allows identification of the machine a part is made for, the factory part number and the bin in which the part should be placed,
- b. A cardex system in the central warehouse that lists approximate acquisition cost for a spare part,
- c. The possibility of advance planning of spare parts supplies,
- d. A system for determining the interchangeability of common spare parts between machines, and
- e. A record of spare parts at both the perimeter and central base levels.

5. The present spare parts purchasing procedure is also cumbersome and time consuming since several separate steps are required to make a purchase. This system is still in place partly because the delay in construction at Ross Bethio has hindered the adoption of the system described above.

F. CONSTRUCTION

1. The Mission has concluded that it would not be in the best interests of the project for us to make a recommendation to attempt to reverse the decision made in December 1980 to place the central workshop at Ross Bethio rather than at Richard Toll. Whether the shift to Ross Bethio which was recommended by ORT and accepted by SAED and AID was the correct one in

terms of the achievement of the project's objectives is an open, but academic, question. There is substantial information to suggest that a number of the original reasons given for the shift to Ross Bethio might not have withstood careful scrutiny. Unfortunately, it does not appear that the technical or managerial assumptions implicit in ORT's recommendation received such scrutiny.

2. The change to Ross Bethio required additional building plans and the preparation of bids. A series of delays within SAED and insufficient communication among SAED, ORT and AID resulted in the final decision to approve the bids and begin construction being delayed until June, 1982. They are now awaiting the approval of AID.

3. The delay in construction has, in turn, delayed the renovation of workshops which, in turn, has delayed workshop reorganization and the start of training for workshop staffs.

IV. RECOMMENDATIONS

A. MANAGEMENT, ADMINISTRATION AND FINANCE

1. A.I.D.

- a. Local Purchase of Machine Tools. The Mission recommends that USAID/Dakar seek to obtain a waiver to permit retention of the delivered machine tools (see Conclusion A, 1, a)
- b. Project Manager/Coordinator Turnover. In view of the fact that the contract of the present project manager for AID expires in October, 1982, it is recommended that whoever occupies this position thereafter should be required to make a commitment to remain in this position for a minimum of <sup>two</sup> ~~three~~ years. (see Conclusion A, 1, e)
- c. Qualifications for AID Project Manager. The Project Manager should 1) be thoroughly familiar with AID regulations and procedures, and 2) have a sufficient amount of experience and maturity to assure the effective support of the project from AID and to be able to intervene as required to promote positive collaboration among all parties. (see Conclusion A, 1, f)
- d. Orientation of Personnel. All newly arriving personnel should be provided with a systematic and thorough briefing on the project. A briefing of this sort is more than an impromptu discussion with a few USAID/Dakar officials over a few hours. The orientation should be planned in advance with a written orientation schedule indicating who is to be met, what aspects of the project are to be discussed in each meeting and what documentation should be read in preparation for the meetings. Upon arrival in the project area, the orientation should continue with a minimum of three days of

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meetings with SAED and ORT personnel and an initial trip to selected perimeters to meet perimeter chiefs and other local personnel. Again, these meetings should be planned in advance so that the new personnel are prepared to ask specific questions and engage in an overall review of project progress and constraints and the role envisaged for the new personnel in this context.

2. SAED

- a. The absence of effective management is partly the result of deficiencies in the management capabilities of SAED staff located in the Industrial Division, however, it is primarily the direct result of the absolute shortage of qualified personnel at the supervisory level within the Division. The Director and Deputy Director both appear to have more tasks to perform than they can reasonably be expected to do well. Significant amounts of time are also consumed in travelling to and from meetings in the various perimeters, in St. Louis and in Dakar.

Therefore, the Mission recommends that SAED seek to reinforce the staff of the Division by hiring a minimum of two well qualified personnel to assist in developing and carrying out overall division policies. For example, SAED could consider hiring a mechanical electrician and irrigation and pumps specialist who would both have enough training to share in management.

- b. Throughout the findings and conclusions presented in this Evaluation Report, a recurrent theme has been the lack of effective communication among ORT, AID and SAED and the absence of a common

understanding of such concepts as the role and responsibilities of counterparts, the content and nature of training and the precise elements required to establish a permanent training structure. Consistent with the Mission's recommendations concerning a reorientation of the personnel component, the Mission recommends that a new beginning be made in the overall area of communication in order to build a new consensus regarding how, precisely, project objectives are to be achieved.

To accomplish this, the Mission recommends that a seminar be convened a few weeks after the receipt and distribution of this report. The seminar could be held over three full days or five half days and should have a written agenda which would include a thorough discussion of the major issues raised and recommendations made in this report. A rapporteur should provide a summary of the findings of the seminar which should be made available to higher level personnel.

The objective of the seminar would be to allow those who are closest to the project to exchange views among themselves and to present those views to policymakers. Perimeters personnel and personnel within the sections of the Industrial Division could present their findings to policymakers.

A subsequent meeting or series of meetings could then be held among the PDG and DG Adjoint, the AID Mission Director and, perhaps, an ORT/London representative to assure that the views of the

various staffs are understood by the policy-makers who could then make decisions regarding the Mission's recommendations.

The Mission believes that it is important that the involved parties "buy into" the recommendations, understand the premises on which they have been made and have an opportunity to express their expectations and frustrations to one another in an environment which encourages consensus building on the points mentioned above.

- c. The Mission recommends that SAED should appoint the Deputy Director of the Industrial Division to serve as the Training Coordinator.

### 3. Finance

- a. Exoneration of Senegalese Taxes. Although the exoneration process cannot be eliminated, the Mission believes that the adverse effect of the exoneration procedure can be greatly lessened if SAED would schedule regular purchases in advance and establish a system to maintain minimum stock of frequently needed materials. An effort in this regard is an aspect of the work of the ORT provided Supply Management Specialist. In addition, AID has obtained the approval of the Ministry of Finance to proceed directly to the Customs Service in order to obtain exonérations for AID. SAED should investigate the possibility of making a similar arrangement since this speeds up the exoneration process.
- b. Financial Control. In order to increase the efficiency of SAED's management of AID funds under its control, the Mission recommends that SAED appoint one person to be responsible within SAED for the monitoring and control of financial

matters. This person should assure that accurate accounts are kept, that receipts are preserved and organized properly and that SAED has an accurate picture of project finances at any given point in time.

B. PERSONNEL

1. The Mission recommends that ORT examine the recruitment and interviewing system which it uses to identify personnel for service in Senegal. The Mission believes that technical competence is necessary to perform the tasks in question, but it is not sufficient. Without a positive attitude, at least minimal cross-cultural skills and a willingness to work with Senegalese as colleagues, even the best technician is likely to have a negative effect on the project's objectives. Evidence of deficiencies in inter-personal skills can--at least in some instances--be identified through reference checks and carefully constructed interviewing techniques in which the potential employee sees more than one ORT interviewer and in different settings.

2. The role and definition of a counterpart is rather different in SAED and AID. It is recommended that AID and SAED meet to discuss the counterpart question and that a joint statement be prepared which could be signed by the SAED PDG and the AID Mission Director defining what is meant by "counterpart" on the project, what hierarchical relationship should exist with the ORT specialists and what percentage of time each counterpart will be expected to spend with the specialist in question. At a minimum, the Mission recommends that AID insist

that SAED personnel be assigned as counterparts on a full-time basis to the specialist in Organization and Methods and the Specialist in Supply Management. The counterparts in question should have a level of formal training which will permit them to take over the functions of these two specialists upon the termination of project activities. This requirement should be made a Condition Precedent for the further disbursement of funds if SAED continues its practice of naming as counterparts people who have only minimal time to spend in this capacity. Failure to resolve the counterpart problem will result in the failure of this project to achieve most of its objectives. Without counterparts in place at the termination of project activities, there will be no SAED capability to continue project initiated activities and, hence, the training structure established by ORT will collapse at ORT's departure as will the essential systems to maintain order and efficiency in an organization in great need of just these qualities. The Mission cannot emphasize this point enough: AID must act on this issue if this project is to succeed.

3. The Mission recommends that AID also ask SAED to identify the six trainers who are to be trained at perimeter level by name within the next four months in order to assure that they have been selected and are ready to be trained upon the arrival of the Perimeter Mechanical Trainers.

4. The Mission notes that the SAED/ORT agreement commits SAED to provide support personnel to the ORT team. Five persons were to be provided under the agreement, however, as of June, 1982

only one has been provided. To prevent costly expatriate specialists from continuing in their role as part time secretaries and messengers, the Mission recommends that AID either insist that SAED provide suitable support personnel or that AID urge that the SAED/ORT Agreement be amended to increase project funds available to ORT so they can hire their own support personnel.

5. Reorientation of Personnel Component. In order to move toward the achievement of the project's objectives, the Evaluation Mission recommends that the size and composition of the technical assistance team be modified and that the organizational structure in which project personnel work be changed. The various elements of this recommendation (outlined below) are intended to facilitate the achievement of the original objectives of the project by promoting two central concepts: integration and decentralization. Both are consistent with SAED's stated policies and priorities.

To summarize, the proposed new project orientation will:

- Maintain the same number of long term personnel but place three of them directly at the perimeter level;
- Require each long term perimeter level trainer to have a counterpart in each perimeter for which the trainer is responsible. These six counterparts ("formateur") should have both a production and a training function;
- Convert the present Integrated Training Unit (Cellule de Formation Intégrée - CFI) into a technical studies and production center (Bureau d'Etudes);
- Assign one of the two long term personnel remaining at Ross Bethio to the new Bureau d'Etudes (the Organization and Methods Specialist);

- Assign the other long term person remaining at Ross Bethio directly to the "Division Magasin Central" in the Industrial Division (Supply Management Specialist);
- Require SAED to identify and select counterparts to the two long term personnel remaining at Ross Bethio who will have no other responsibilities within SAED besides working with the technical specialists in question;
- Call for a short term consultant for at least six months to work on the reorganization of the Central Repair Workshop ("Division Atelier Central") Machine Tool Division;
- Call for a short term consultant for at least six months to work on the reorganization of the Central Repair Workshop auto-diesel division;
- Call for personnel assigned to the perimeters to have technical and mechanical skills plus a willingness and demonstrated ability to live in rural environments with difficult climatic conditions;
- Modify slightly the Industrial Division's organization chart by placing the new Bureau d'Etudes directly under the Deputy Director's control and making the Deputy Director the Training Coordinator called for in the Project Agreement;
- Strengthen support to the "Division Magasin Central" and "Division Atelier Central" by thorough coordination and feedback efforts of the Senegalese Training Coordinator;
- Define more precisely the role of the ORT team leader in terms of the new structure and his substantive responsibilities relative to other ORT personnel.
  - a. Long Term Personnel in the Perimeters. During numerous interviews with Perimeter Chiefs, SAED personnel located in Ross Bethio and in St. Louis and with others, it became clear that the greatest need for training and reorganization is at the perimeter level. The Mission was repeatedly told by SAED personnel at the perimeter level that project personnel rarely spent much time at the perimeters and that they could benefit from the

long term presence of appropriately skilled individuals. The Mission recommends the following living and working pattern:

Residence

Podor or Nianga

Richard Toll

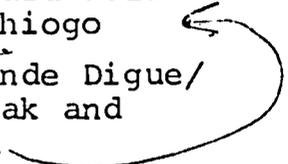
Ndiaye

Perimeter Coverage

Nianga and Guede

Dagana, Richard Toll  
and Ndombo Thiogo

Lampsar, Grande Digue/  
Tellel Kassak and  
Ndebe Bundum



SAED experience with a technical specialist from UNIDO at the small perimeter of Aréalao has demonstrated the utility of this approach and proved that personnel can be found to work in the areas mentioned if a proper recruiting effort is made.

Revised job descriptions for all positions have been proposed in Annex 7. In addition to technical qualifications, the Mission recommends in the strongest terms that personnel be selected who are relatively young, who have worked in rural Africa previously with some type of volunteer program (Peace Corps, U.N. Volunteers, CUSO, Dutch Volunteers, etc.) and who already have a good working knowledge of French.

Although it would be preferable to recruit persons with teaching or vocational training experience, individuals with the technical skills who also meet the other criteria set forth above could be sent to ORT's Training Center in Geneva for a two month program in teaching methods. It would also be most useful if the Training Coordinator could participate in some of the ORT/Geneva training program both as a resource person to

brief newly recruited personnel and as a participant involved in discussions on training methodology.

Housing at Richard Toll and Podor/Nianga should be modest but comfortable. Housing already exists for the third perimeter based trainer at Ndiaye.\*

- b. Conversion of the CFI into a Bureau d'Etudes. The present organizational structure of the CFI was established with the expectation that on-the-job training and some classroom training would be integrated into the production activities of the Industrial Division and the other relevant Divisions within SAED. In fact, the existence of a separate unit housing the entire ORT team and the minimal participation of counterparts in the CFI has resulted in a training unit which is both physically and practically isolated from the rest of the Industrial Division. The offices of the ORT team are in one wing of an office block while counterparts--to the extent they exist--are mostly sitting in different offices. The physical separateness of these offices may have contributed to the sense that the ORT team may be technically quite competent but contents itself to engage in its own work with only a limited awareness of the context in which that work must be performed.

The Mission believes that the technical specialists should be moved to where the needs are both physically and organizationally, that they should

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\* Four houses were built at Ndiaye by AID for a cost of \$208,000 and were ready for occupancy on June 4, 1982. Two of the houses could be used for the long term personnel based at Ross Bethio, one could be used for the perimeter based technician covering Lampsar, et al, and the fourth house could be used for short term consultants.

work much more directly and regularly with counterparts and that they should be supervised by a Training Coordinator of Senegalese nationality.

To accomplish this, the CFI can be converted to a Bureau d'Etudes, retaining the Organization and Methods Specialist and recruiting (from outside SAED if necessary) a well-qualified Senegalese counterpart. Initially, the Bureau d'Etudes would be an office designed to provide support to training efforts through the production of training aids, standardizing tests and other curriculum materials. The Bureau would also maintain records of training through the use of the personnel files already established by the ORT team, and will provide documentation for the reorganization of the Industrial Division generally. Later, the Bureau d'Etudes might be expanded to provide the Industrial Division with a technical research/analysis capability in substantive areas of concern.

The Bureau d'Etudes would be placed directly under the supervision of the Industrial Division's Deputy who would be named Training Coordinator. This measure would help to provide a more clear division of responsibilities between the Director and Deputy Director and lessen the burden of work on the Director by emphasizing his policy role and reducing the time he must spend on routine matters affecting the training effort. This step would also fulfill the terms of the Special Covenant in the Project Agreement which requires that a Training Coordinator be appointed.

- c. Long Term Technician in the Bureau d'Etudes. This technician will report directly to the Training

Coordinator and have a counterpart assigned full time who will have a background which will permit him to be trained to take the place of the ORT specialist by the end of the contract. The Specialist will be responsible for the support of training efforts at the perimeters and at the central base at Ross Bethio and will produce documentation needed to carry out such training. He will also liaise and assist the Training Coordinator in the supervision of the work of the three long term perimeter trainers. The Bureau will also maintain accurate records concerning trained personnel and will assist the Training Coordinator in the supervision of the training efforts being conducted at perimeter level.

- d. Long Term Technician at the Supply Management Division. The technician will establish an efficient system of supply and equipment management. This will involve development of a file supplying regular information on the numbers and condition of mobile equipment, on the situation of stocks and supplies at Ross Bethio and the perimeters and on the status of orders in progress. A copy of the job description for this post can be found in Annex 7. The technician will work together with a counterpart whom SAED will appoint to work full-time with the ORT technician. The counterpart should be assigned no other duties.
- e. Short Term Consultant to Reorganize the Machine Tools Division of the Central Workshop. While the basic thrust of this reorganization is to strengthen the training capability and reorganization efforts at the perimeter level, the importance of the central base at Ross Bethio must not be overlooked.

This base is the essential backup to the perimeter repair facilities and it provides coordination, higher level repair capability and machinery repair assistance to the perimeters. For these reasons, the Mission has retained the objective in the original project agreement to reorganize the main base (originally at Richard Toll but now moved to Ross Bethio) and proposes a short term technician for at least six months to focus on the machine tool division. (See job description in Annex 7). The consultant's counterpart should be the present counterpart to the specialist in machine tools (Mr. William Barra).

- f. Short Term Consultant for the Auto-Diesel Division of the Central Workshop. Working with the consultant in machine tools, this consultant will focus his efforts on the reorganization of the auto-diesel division. The consultant's counterpart should be the head of the Central Workshop ("Chef de la Division Atelier Central", Mr. Yaram Diallo).
- g. Provision of Counterparts for the Long Term Perimeter Mechanical Training Specialist. During the first twenty-one months of the project, the six trainers which were to be provided by SAED as counterparts to the project were not selected. It has been agreed among most SAED and ORT personnel that these trainers ("Formateurs") should be located in the perimeters and should be involved in production and in implementing on-the-job training. One trainer should be located at each of the six large perimeters covered by the Perimeter Technicians. Thus, for example, the trainers at Nianga and Guede would be counterparts to the Perimeter Technician assigned

to these perimeters, the trainers at Dagana, Richard Toll and Ndombo Thiogo would be the counterparts to the Perimeter Technician based at Richard Toll and so forth.

The "Chefs de Colonne" and "Chefs d'Exploitation" have been suggested as possible counterparts to serve in this training capacity. The Mission believes that it is less important to define the position at the perimeter level which will be named the counterpart position than it is to identify the individual in the perimeter structure who, as a result of interviews and testing, appears to have the best potential for becoming a trainer. Therefore, it may be that in some perimeters the "chef de colonne" is selected while at another perimeter the "chef d'exploitation" or some other person may be selected. Once the six trainers ("Formateurs") have been chosen, the Training Coordinator and the Bureau d'Etudes working together with the Perimeter Technicians will establish a written Training Plan which will identify specific training measures to be undertaken at the perimeter level, at Ross Bethio, at the Ndiaye Training Center and, if necessary, elsewhere.

- h. Provision of Counterparts for Long Term Technician Trainers at Ross Bethio. The Mission cannot over-emphasize its conviction that counterparts are needed on a full-time basis to work with the Supply Management Specialist and the Organization and Methods Specialist. Counterparts should not, as at present, be assigned technical and supervisory duties in addition to their counterpart roles. Failure to heed this recommendation will result in the indefinite continuation of a need for

external assistance to the Industrial Division in these areas. Although the Mission is recommending elsewhere in this report that the project should be extended to December 31, 1984, this extension should be contingent upon a Condition Precedent: that full-time counterparts for these two positions be officially designated and that ORT and AID have been satisfied that the counterparts so designated are of a calibre sufficient to permit them to take over the work of the ORT personnel as of January 1, 1985.

- i. Appointment of Training Coordinator. The Mission recommends the appointment of the Deputy Director of the Industrial Division to act as the Training Coordinator. As mentioned above, this will sharpen the division of responsibilities between the Deputy and the Director and will make the lines of authority more clear. The Training Coordinator should also monitor and help to coordinate the training efforts in the perimeters of non-ORT personnel (for example, the UNIDO specialist at Aréalao) in order to assure an optimum training effort and the effective delivery of training support from the Bureau d'Etudes to all training efforts emanating from the Industrial Division.
- j. Definition of the Role of the ORT Team Leader. Finally, in order for this reorientation to function properly, the role and responsibilities of the ORT Team Leader must be made more explicit than has been the case thus far. SAED seems to prefer a system in which the ORT Team Leader acts as a leader only on questions relating to ORT administrative concerns whereas ORT usually prefers that its Team Leader lead the team in the sense of

supervising and coordinating the work of ORT personnel. The Mission recommends that, in this instance, the team leader role be confined to the administrative concerns of ORT in order to assure that the Training Coordinator has both the responsibility and authority for the overall supervision and direction of the training effort. The ORT Team Leader (Specialist in Organization and Methods) will be available to advise the Training Coordinator as required but the Coordinator should not be viewed as the counterpart since a) the Training Coordinator is hierarchically above the Bureau d'Etudes and b) the work of the Specialist in Organization and Methods is a full time job requiring a full time counterpart located in the Bureau d'Etudes.

C. TRAINING

1. Plan and Conduct Training Now

There have been continuous demands by AID that a training plan be formulated which would set out the specific training activities which the project would undertake in both on-the-job and more formal training. The Mission can only recommend that such a training plan be prepared.

The training plan should include only training activities (unlike the so-called "training plan" of January 1982 which was, in fact, a work plan with a training element). The plan should establish a specific timetable and indicate who will conduct how much training in which perimeters and with what focus. It is imperative that the project conduct training activities and be seen to be conducting training activities at the earliest possible date. The project is called a "training project" and training

is its raison d'être. For this reason, the Mission also recommends that ORT personnel not wait for all structures to be in place or all workshops to be reorganized before beginning training. Some accommodation must be made to the realities of SAED's organizational and managerial situation or there will be reasons into the indefinite future as to why other actions must be completed before any training can begin.

2. Increasing Agricultural Machinery Efficiency.

The Mission recommends that SAED and ORT initiate a training program in the management of agricultural tractors and machinery to increase their efficiency of operation. Trainees should be taught how to decrease nonproductive time in the use of the machinery. (For example, a hectare of land which is 50 X 200 meters requires half the turning time at the end of the field as it would be for a hectare of land which is 100 X 100 meters.)

3. Use of Supplier Provided Training

The Mission commends the project for its initiative in organizing the free training provided by machinery manufactures such as Fiat and Massey Ferguson. This type of training should be continued, expanded and institutionalized as a regular feature of training at SAED for all newly arrived machinery.

4. Counterpart Training

Although some counterpart training occurs naturally as the result of a working relationship, counterpart training should not be left primarily to osmosis. Each specialist must have an identified counterpart and should develop a written,

individual counterpart training plan in collaboration with his counterpart. This plan should include a schedule of work to be undertaken jointly, an indication of when field trips are planned and whether the specialist and counterpart will undertake the trip jointly, and should include regularly scheduled meetings between the specialist and the counterpart which are specifically to review counterpart training and the value to the counterpart of the joint activities completed in the previous monthly planning period. A copy of this monthly training plan should be submitted to the SAED Training Coordinator and to the AID office in St. Louis.

5. Overseas Training

A training schedule for overseas trainees was prepared in January which showed training beginning for several people in the first half of 1982. Since none of this training was realized, the Mission recommends that the training schedule a) be revised and b) that justifications for the revised training schedule estimates be required by AID. In those cases where it has not yet been done, ORT personnel should forward curriculum vitae and details of training requirements to ORT London without further delay. (The one exception to this would be the two counterparts for the Organization and Methods Specialist and the Supply Management Specialist who have not yet been selected for certain.)

D. EQUIPMENT RECOMMENDATIONS

1. Purchase of Machine Tools

Since the machine tools bought without a waiver are still technically in the possession of the supplier, it may be possible

to obtain a waiver at this point on the grounds that they have not yet been accepted and will not be pending the grant of waiver. The Mission recommends this course as preferable to reorder because of the further delay which will inevitably be involved.

E. SUPPLY MANAGEMENT SYSTEM RECOMMENDATION

1. The Mission believes that the proposed supply management system is sound and recommends its implementation as soon as possible.

2. The Mission recommends that ORT personnel in close cooperation with SAED initiate action to provide for the effective use of the equipment inventory by establishing a system of phased depreciation of equipment.

3. Initiate a more accurate system of records management at the perimeter level so that costs for the agricultural machinery component can be determined.

4. Expedite construction of the new warehouse so that the new system of stock management can be installed as soon as possible.

F. CONSTRUCTION RECOMMENDATIONS

AID should expedite the construction of the facilities at Ross Bethio to prevent further delay which can only have a negative impact on the achievement of other project objectives.