

5210074-10

PD-APB-707-A

120

521 0074 10 17 1

FINAL REPORT

EVALUATION STUDY OF HAITI AGRICULTURAL
FEEDER ROADS PROJECT

A. I. FIKS
E. A. DAVIDSON
J. HODSON
J. W. DARISME
F. J. CONWAY
S. A. LA BELL

CONTRACT AID/OTR-C-1387
WORK ORDER 12 (HAIFER)

USAID MISSION TO HAITI
PORT-AU-PRINCE

JUNE 1979

GROUP SEVEN ASSOCIATES, INC.
815 KING STREET, ALEXANDRIA, VIRGINIA 22314 USA (703) 548-1878

CONTENTS

	<u>Page</u>
EXECUTIVE SUMMARY	1
INTRODUCTION	4
METHODOLOGY	7
EVALUATION RESULTS	
External Factors	
GOH Support	14
Tenability of Assumptions	21
Inputs	
Project Design	26
Technical Consultant Services	32
Training	43
Equipment	53
Administrative Support	55
Immediate Objectives (Outputs)	
Road Reconstruction and Improvement	57
Equipment Leasing Service	72
Labor-Intensive Pilot Project	76
TPIC Institutional Capacity	80
Principal Reasons for Delays	83
Intermediate Objectives (Purpose)	97
Ultimate Objectives (Goal)	102
Beneficiaries	103
Unplanned Effects	107
RECOMMENDATIONS/LESSONS LEARNED	109
DEFINITION OF TERMS	114
APPENDIX	116
FIGURES	
1. Work Schedule	8
2. Photos: Reconstructed Roads	68
3. Chronology	96
TABLES	
1. Interviews	9
2. Informal Interviews	10
3. Field Trips	12
4. Project Personnel Assignments	33

EXECUTIVE SUMMARY

1. The aim of this study was to evaluate the performance of the AID/GOH Agricultural Feeder Road Loan/Grant against program objectives as of April, 1979.

2. Our findings and analysis would support the following statements:

a. Though most of the stated assumptions in the design are tenable, some unstated ones are not.

b. GOH support has ranged from good to inadequate.

c. The design appears uneven in its standards and somewhat over-ambitious in that it embodies too many different types of objectives.

d. The Consultant seems to be stronger in direct execution of engineering projects than in technical assistance for organizational development. Overall, the technical consulting services rendered rate less than adequate.

e. The training input has been notably weak, both in design and implementation.

f. Delays in obtaining equipment have been a major factor in the lack of physical accomplishments.

g. TPTC administrative support for the Project has been checkered. Institutional priorities do not seem to favor the Feeder Road Project.

h. Of the 940 kms planned, only 87 km have been completed to date; 371 km should be completed by now, a remarkable 76.5% shortfall.

i. The Equipment Leasing Service, though not carrying out its planned function, is one of the positive accomplishments of the Project to date.

j. The labor-intensive "Pilot Project" has not yielded the policy guiding information that was sought.

k. Without baseline information, it is not possible to determine to what extent, if any, Consultant services have augmented TPTC technical and managerial capability.

As of now, 55% of the project term has elapsed, about 50% of all funds have been expended, and 9.2% of the roads have been reconstructed and improved. Start-up costs and the incremental production factor cannot fully explain this preponderant imbalance.

l. Inordinate delays have occurred because on each major track of the project the problems proved more baffling, frustrating and difficult than planners or managers anticipated (e.g., regarding contractors' attitudes, arcane offshore transactions, administrative pace in the tropics, tightly coordinated ETAs for technical assistants). Institutional factors tend to demand optimism, perhaps. But it must be resisted in the light of foreign aid history which has always been deflating. Difficulties must be discounted, prepared for, by the designer's or the manager's expectation of being denied, puzzled and otherwise thrown off balance. Such healthy skepticism would have armed the managers to challenge the designers, for one thing. But we do not retreat to the high ground of history and aid philosophy simply to level criticism. (By and large, individuals assigned to the project worked conscientiously and normally, in day-to-day situations.) It is only from that

perspective that we can ourselves fully grasp the dilemma the project has become. And it is in that perspective and in the adherence to present realities and probabilities that our recommendations (which see) can be effectively applied to the balance of the project.

m. Despite the above problems and based on very abbreviated informal field research by our Creole-speaking social scientists, it appears that the few completed segments of improved road may already be having some positive socio-economic benefits for local residents.

INTRODUCTION

1. Orientation of the Evaluation in Time

The present Group Seven evaluation of the Feeder Road Project, coming after nearly 3 years of loan implementation, is the first evaluation to be undertaken.

By original plan (the Project Paper schedule), an evaluation was to have been done after the first project year, in July, 1977. Revisions of the project schedule (that is, the principal PERT items) and of guidelines to contractors were to have been done soon thereafter, as well as a review of the Consultant's ability to carry out the Pilot Project.

Meanwhile, base-line data were to have been collected during the first year so that during a second scheduled evaluation in July, 1978, a preliminary quantitative appraisal of the project's socio-economic effects could be made.

In sum, this "mid-term" evaluation was to have been a sequel to others as

in each successive year the annual review will evaluate the success and progress of the project in the light of the sampling base-line data on hand and in view of the revised information that will be compared and revised from year to year. (PP, p. 97)

Our task, then, was to evaluate without benefit of two prior evaluations or base-line data. Finally, since no PERT-item revisions have been made along the way, making them all the more important now, our own suggested revisions have had to be quite far-reaching.

2. Terms of Reference

Our work order stipulated that we:

a. Evaluate implementation against project objectives, that is,

- reconstruction of 940 kms of feeder roads;
- establishment of an Equipment Leasing Service;
- conduct of a labor-intensive pilot (research) project; and
- provision of technical assistance to improve TPTC capabilities.

b. Evaluate specific achievement questions (USAID instructed us as to the degree of emphasis to give the following items, a priority reflected in the order in which they are presented) regarding:

- road reconstruction, noting post-project assistance required (heavy emphasis);
- delays and identifying causes, suggesting how to avoid future delays and how to accelerate the project to meet completion deadlines (heavy);
- pilot project results, that is, provision of productivity and other data on the subject, a related training manual, (Consultant) suggestions as to an expanded GOH labor-intensive program, and (Consultant) observations on pertinent social factors (medium);
and
- ELS-provided service to contractors, together with (our) suggestions for strengthening it (low).

3. Format

We have followed the requirements of AID's Project Evaluation Summary, form 1330-15 Part II. But we have not confined ourselves to its limitations.

4. Remarks

a. Given that less than 10% of the 940 kms of targeted roads have been reconstructed, it is premature to more than hint at purpose and goal achievement. Clearly, it is also impossible for the project to reach its target of 940 kms on time.

b. We indicate above in the Executive Summary and below, in the body of the report, that perhaps the outstanding project problem was in adjusting to contingencies. As a consequence, a great pressure has built up for recovery, and for vigorous action now to put the project back on an agreed course through which realistic new targets can be reached.

METHODOLOGY

Four discernible stages comprised this evaluation activity:

- (1) background reading and planning; (2) data collection; (3) analysis and synthesis; and (4) write-up and submission.

Background Reading and Planning

1. The Group Seven team met in the home office to discuss the project and generate the methodological framework and timetable. It is given in Figure 1.

2. Orientation meetings were held with the Mission's Chief Engineer, his assistant and other staff members upon arrival in Haiti.

3. We prioritized the tasks stipulated in our Statement of Work (see Appendix) in discussions with Mission Staff. There was general agreement on the relative importance of the various elements. This information is presented in the Introduction.

4. A series of specific tasks had been identified in the Consultant Agreement. In order to answer the general question of Consultant performance, we sought to establish whether, how, and how well the various inputs were being performed.

Data Collection

1. Information was gathered by one or a combination of the following methods: file searches, personal interviews, and direct observation.

2. With all methods, objectivity was carefully adhered to. Accepting offers of personalized service or fraternization by Group Seven personnel with either the Consultant or TPTC staff was discouraged.

3. Documents in English and French from the files of AID/Haiti, TPTC, or the Consultant firm were examined. These were readily made available on request.

4. Eighteen formal, mostly private, semi-structured interviews were held in the Port-au-Prince area with the 13 persons listed in Table 1. Interviews ranged in duration from 15 minutes to 3 hours.

March 28 April 4 11 18 25 May 2 9 16 23 30

Planning/
Literature Review



Data Collection:

Technical Aspects
Management Aspects
Socio-Economic Aspects



Analysis/Synthesis



Report Writing and
Submission

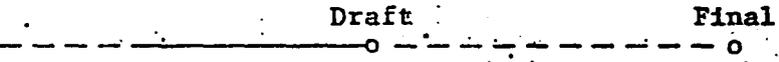


Figure 1: WORK SCHEDULE - HAITI FEEDER ROAD EVALUATION

TABLE 1
INTERVIEWS

Date	Name	Title	Place	Interviewers
4/10	Roger Milfort	Program Manager	TAMS/TPTC Bldg.	Fiks & Davidson
4/10	F. M. Rawson	Team Leader	" " "	Fiks & Davidson
4/16	R. Miot	Field Engineer	" " "	Davidson
4/16	M. Marra	Transport Engineer	" " "	Davidson
4/17	R. Miot	Field Engineer	" " "	Davidson & Hodson
4/18	F. M. Rawson	Team Leader	" " "	Fiks, Davidson & Hodson
4/19	M. Marra	Transport Engineer	" " "	Davidson & Hodson
4/19	F. M. Rawson	Team Leader	" " "	Fiks, Davidson & Hodson
4/20	E. Ligonde	SLELC Director	SLELC Bldg.	Davidson & Hodson
4/20	J. Capalbo	Heavy Mechanic Advisor	TAMS/TPTC Bldg.	Davidson
4/20	N. Ziegler	Field Engineer	" " "	Davidson & Hodson
4/23	R. Milfort	Project Manager	" " "	Davidson & Hodson
4/24	W. Richard	Budget Advisor	" " "	Hodson
4/25	M. Luangkhot	Adm. Advisor	TPTC Bldg.	Hodson
5/2	G. Jospritre	Program Officer TPTC	TPTC Bldg.	Hodson
5/3	W. Rhoads	Program Officer AID	AID Bldg.	Hodson
5/3	Vorbe & Fils	Owner	Vorbe & Fils Office	Davidson & Hodson
5/4	Ing. A. E. Hyppolite	Partner, HANCO	Contractor's Office	Davidson & Hodson

5. Other less formal interviews and meetings were held in the St. Raphael-Pignon Barriere Battant areas and in the La Vallee-Blockauss areas as shown in Table 2.

6. We attempted to maintain a neutral stance at all times. If any controversial or contradictory statements arose, they were doublechecked for accuracy later.

7. With one or two exceptions, all interviews were done in private. Exceptions were permitted where privacy was not germane, or impossible to attain (as in the villages). This allowed the interviewee to speak freely without fear of attribution, retribution or social pressure. Tape recorders were not used. When appropriate, anonymity was assured. Interviewees in general replied to questions candidly and offered their opinions freely.

8. Where appropriate, each Consultant & TPTC respondent was asked about his area of work, his estimation of various aspects of his own organization and that of his counterparts. This afforded a view of both organizations for opposing perspectives, invaluable for understanding the features and interaction of the Consultant and TPTC.

9. To minimize subjectivity, whenever possible, quantitative and factual data were sought in order to increase the rigor of reported data. Questions were formulated to avoid leading the interviewee and stated neutrally.

10. With five French-speaking members of the Group Seven team and the fact that some TPTC staff speak English, language was not a problem. Whenever needed, our only non-French-speaking team member was accompanied by another member of the team for translation.

11. Field trips were made to St. Antoine-La Vallee-Blockauss-Bainet and to Pignon-St. Raphael-Dondon-Barriere Battant by some members of the team to observe construction and by others at different times to interview local residents. A trip to Thomazeau was also made. (see Table 3)

Analysis and Synthesis

1. Data, impressions, tentative conclusions, and potential recommendations were all discussed and analyzed within the Group Seven team to get consensus and thus increase the reliability of our reported findings and suggestions.

2. With the absence of quantitative data, no occasion for statistical hypothesis testing arose.

3. We sought to verify all of our information before reporting it.

TABLE 3
FIELD TRIPS

Date	Observer	Place	Purpose
12 April	Fiks Davidson Conway	St. Antoine La Vallee Blockauss Bainet	Inspection of Pilot Project
11 - 14 April	Conway	P-au-P, La Vallee Ternier, Ridore Blockauss	Pilot Project History & Socio- economic Effects Interviews
13 - 14 April	Fiks Davidson	Pignon, St. Raphael Dondon Barriere Battant	Inspection of Construction Projects
16 - 17 April	Darisme	Barriere Battant Dondon, St. Raphael Pignon	Socio-Economic Effects Interviews
29 April	Davidson Hodson	Thomazeau	Inspection of Contractor Project

Write-Up and Submission

1. Appropriate members of the Group Seven team took primary responsibility for drafting particular sections.
2. Various other members then reviewed, edited, amplified and/or commented as necessary.
3. We sought to separate facts from interpretations. Accordingly, wherever appropriate, the evaluation results are presented under headings of Finding(s) and Commentary.
4. The report went through two typings in Haiti. The third was done in Alexandria, Virginia before submission of this final.
5. The Draft Final Report was delivered to USAID/Haiti on May 10, 1979.
6. A meeting was held on May 14, 1979, in the USAID Mission Office to present the major findings and recommendations, and receive comments.

EVALUATION RESULTS

EXTERNAL FACTORS

GOH Support

The Feeder Road Project is, in principle, a creature of a permanent department of the Haitian Government, not a separate entity to receive external support, except from the U.S. Government.

The project is in fact an entity during the period of the loan. It is a limited and self-liquidating arrangement combining TPTC personnel with locally-hired employees and U.S. technicians in a building of its own. Hence, the question of support can be seen from three standpoints: that of the Government as a whole (external); that of the TPTC Department in its relationship to the project; and that of the TPTC presence within the project.

In all relationships at all levels, the Government retains the executive authority de jure; and although the U.S. consultants take pains to respect that authority, they exercise unmistakable de facto authority within the project (but less in relations with TPTC proper, and none in the Government as a whole).

FINDINGS:

A. External Support

1. The Government took legislative action to establish the Equipment Leasing Service rather later than planned but in ample time to receive delayed imported equipment. Its legislation reorganizing the TPTC was both timely (July, 1978) and highly responsive to the Project Paper's (and to Berger's) recommendations. Moreover, the present Secretary of State for the TPTC is fully committed to the reorganization and supports implementation of the law vigorously. This major undertaking will provide in the future for a sounder general frame

of reference for the administration, e.g., feeder-road construction. And it will prepare for effective use of TPTC project personnel upon their return to the Department (in such new or revamped units as the Program Unit, the ATS, the O & M Unit, Construction Service, and others). Finally, the Government's views on rural development and its recent promotion of the development planning function to the department level, indicate a policy environment compatible with the project goals.

2. With its decree raising the standard road a minimum of five meters, however, the Government put itself slightly at variance with the project's four-meter standard, a departure with probable cost effect on the achievement of project objectives.

3. There is also potential divergence in implementation policy if the project, through force of circumstances, abandons the use of private construction contractors while the TPTC maximizes their use--as is the reported premise of the Reorganization (and of TPTC's "new vocation," as one official put it).

4. There is what might be called lack of support in the matter of GOH finances and budgeting. A general shortage of budget revenues injects an element of doubt as to the flow of all capital and developmental investments. And diversions have been made, reportedly, from development programs to other sections of the budget, in the anticipation that PL480-III local currency generations will cover the gap.

B. Departmental Support of the Project

Most of the issues, reflecting well or poorly on TPTC's project support, have to do with personnel.

1. The TPTC's assignment of some 14 regular employees to the project was no minor achievement, given the possessiveness of bureaucracies.

2. On the other hand, it did not fulfill all expectations in personnel assignments. The project had to hire from the market some 10 professionals and eight clerical and service employees whom TPTC could not supply. TPTC nevertheless pays for them (or would be paying for them under its nonproject account for support of the project headquarters office, if it were not in arrears in that account; see below).

3. Against 19 consultant advisors, 6 counterparts were in place before or simultaneously with the arrival of the corresponding advisor. These 6 were among the key people, it must be said. But of the 13 others, 4 came up to a month late; 5 were 3-to-5 months late; and (contemplated or not), 4 were not assigned at all--against the Consultant short-term advisors.

Given that the advisors were themselves at least 6 months late, allowing ample lead time (against the PP schedule), the 13 delay cases perhaps indicate weak GOH commitment or backing for the activity--bearing in mind the relative ease of making cross-town transfers as against international recruitment. And since the Consultant role was advisory, in principle, to a TPTC project group responsible for the project, the lack of counterparts at the start required the advisors to step in and take the initiative--a situation that appears to have endured.

4. One TPTC official rates the quality of technicians and operators assigned to the project as inadequate; others thought the level to be average.

5. Cases:

a. TPTC provided an inexperienced supervising engineer to supervise the one private contractor doing project work--a sensitive issue, as the contractor is far behind schedule;

b. The funding of soils technicians was a TPTC responsibility, but has fallen to the project by default;

c. Field work of survey crews has been delayed for lack of TPTC financing and transport.

6. The broader funding problem -- GOH deposits to the project account were:

a. often delayed;

b. in part (to the extent of \$254,000) diverted to the General and Administrative account which the GOH is supposed to fund from budget outside the project over and above its project contributions.

7. TPTC has not given the impression of interest in the Pilot Project, nor in the future of labor intensive road construction, nor in researching the question, within the context of the Feeder Roads Project.

8. TPTC delayed the transfer of the Southern Brigade from the Cavailon-Barraderes section to project-approved work. In its effect, this means a GOH

departure from the originally-agreed criteria for selection of roads for project action. (The issue has now been resolved by incorporating this section into the program.)

9. Consultant performance in the training task is criticized elsewhere; the GOH for its part must share some of the criticism for not having pressed the Consultant or held it to its plans for both in-country and home-office training. Nor has TPTC initiated exchanges related to its own training activity or sources.

10. GOH support to the project might well include planning for the post-project period. Three potential problems arise: (1) the reintegration of TPTC employees; (2) the future of those hired for the project; and (3) the transfer to TPTC of systems and methods developed by advisors and counterparts. The project has become somewhat a distinct entity, intentionally or not. Systems--budget, accounting, contracting, and procurement--cannot be carried back to TPTC by individuals, but only under institutional sponsorship. We are unaware of other than indirect TPTC plans (those associated with the Reorganization) to that effect.

C. Support Within the Project

TAMS and TPTC interviewees freely expressed their feelings and opinions of each other, often with a group, or we-they, outlook. This is disconcerting in a project premised on close cooperation. (Perhaps some of the stronger views can be discounted precisely because the relationship is so

intimate--in shared offices, etc.--and because the evaluation gives occasion to let off steam.) In any case, important questions have been highlighted:

1. General derelictions or shortcomings laid to TPTC include "moon-lighting" and absenteeism.

Low pay may explain this in part. But with low pay, the differential as against Consultant salaries caused resentment, especially when advisors prodded the counterparts for greater effort, tedious follow-up, more managerial responsibility, etc. In consequence, advisors felt the TPTC project attitude was, "You get the money, you do the donkey work."

Finally, among the generic problems, politics or "friends in high places" was said to undermine discipline in the project's chain of command.

2. Irrespective of such attitudes, TPTC did not seem to bring outstanding management ability to the project. The ability or, more likely, the will to "grasp the whole," look ahead, issue clear instructions, follow up, and move the program ahead efficiently; appears to be lacking--or, at least, it has not shown up to date in the context of this particular project. Nor are the senior TPTC people wont to use helpful supervisory tactics such as praise where due and site visits. Such views are shared even by some TPTC people.

3. TPTC has been associated with poor administrative handling of current tasks at the project headquarters level. Production of an organization chart--a symbolic as well as practical instrument--lagged for weeks. Field requisitions for materials and supplies were or are processed at leisure, etc.

(see Appendix)

4. To be fair to both parties, and not to derogate the Consultant-Counterpart relationship unduly, it should also be noted that working relationships at job sites--among engineers and mechanics, for example--have generally been cordial and supportive, each allowing for the other's weaknesses and trying to bring out his strengths.

COMMENTARY:

GOH support within the project suffers from some problems of larger scope than the project itself, that are insoluble in the project context.

It also suffers from problems that could be solved with greater dedication and leadership--managers setting the standard of regular hours, for example.

Nerves are on edge on both sides due to shortfall in the project's physical output. This aggravates other problems and complicates collaboration. The result in terms of productivity is an unsatisfactory situation at the present time.

At the departmental level, support that has been of mixed to poor quality in the past has some chance of improving as the Reorganization is put into effect. Not only can it improve services on which the project depends, it can also help gradually to reintegrate the project function into regular departmental operations--which is the ultimate purpose of the project.

At the national level, support has been generally good--except in the matter of prompt funding.

Tenability of Assumptions

The Project Paper's Logical Framework lists nine assumptions on which we comment briefly.

A. Assumptions for Achieving Goals

1. There have been no major natural disasters during the project period.
2. Prices continue to be favorable for small-farm producers.
3. The availability of rural labor is approximately what it was 3 years ago.
4. In the matter of whether the "GOH pursues a consistent agricultural development strategy," we are inclined to regard the GOH's position with respect to agricultural development as a policy, with a broad plan, rather than a "strategy." We know of no major inconsistencies in that policy--whatever its effects may be--and we consider it to be compatible with the project's rural goals.

B. Assumptions for Achieving Purpose

1. AID and other complementary programs designed to increase agricultural productivity are not on schedule. We have not appraised the delays because the Feeder Road Project is itself so far behind (achievement of "purpose" country-wide is well in the future).
2. Internal taxes on movement of goods have not been reinstated.
3. Truck and bus fleets may have increased to some extent where they travel completed roads, but we have no reliable figures. We are certain, however, that the number of trips made by these vehicles per week has increased.

4. Road maintenance under SEPRRN was rated rather ineffective in an AID-sponsored evaluation of the Road Maintenance Phase I Program, done in late 1976, that is, some months after completion of the Project Paper. Hence the assumption that "road maintenance remains effective" was false to begin with. We think maintenance has somewhat improved since 1976. We will have more definitive views on the matter when our Phase II evaluation is completed in early June, 1979.

C. Assumptions for Achieving Output

1. (See below.)

2. Normal weather obtained; and labor disputes which have occurred during the project period scarcely affected the project.

.....

We discuss here at greater length Output Assumption #1, the important matter of TPTC Reorganization (The Berger recommendation assumption), which is proving valid.

Legislation providing for the Reorganization was enacted and TPTC is implementing the law with "all deliberate speed," with technical assistance from a former Consultant advisor.

Active preparations for the Reorganization began in early 1978, the organic law was passed July 18, 1978; and implementation began immediately, accelerating in January, 1979. The new system can scarcely be in place for another 2 years, that is, about the time the project ends. Hence, the major Reorganization's impact on feeder-road administration will be felt not by the

separate project but later by the TPTC in its regular operation. It should also facilitate the return to TPTC, in useful positions, of temporarily-seconded personnel to the project.

Without having examined the Reorganization in depth, we are favorably impressed and think it has some prospect of becoming a model of its kind. Analysis of the Reorganization per se is not our purpose here, however, and we conclude with mention of those aspects that bear on AFR operations, current and future.

1. The "strategy" of the exercise is to make the most effective use of the Department's most effective officials and technicians--by transfers, job upgradings and function redefinitions, in new or reorganized units.

2. A case in point is the introduction of a prestigious high-level programming unit--as staff to, and exercising the authority of the Secretary of State. This will make possible the better use of technical and organizational resources as it is likely to improve planning and scheduling of operations and coordination among services, to eliminate conflicts and overlaps among various plans and to increase the service the several services render to each other (including the project in its present form).

3. Thoroughness, clarity and step-by-step care are going into the position and unit definitions. There will be a rationalizing effect on the units and the Department overall.

4. Decentralization of operational authority and responsibility to the nine TPTC regional offices is an important goal of the plan. Dispersed as they are, feeder-road works and the project are likely to benefit.

5. The services undergoing priority reorganization are the ones that have much to do with AFR plans and works:

- a. Programming Unit
- b. Autonomous Transport Service
- c. Construction and Supervision Service
- d. Organization and Methods
- e. Administration and Accounting

6. The Secretary, Ing. St. Come, personally encourages both the Reorganization and the Feeder Road Program--an auspicious combination.

Assumptions not stated in the Project Paper that we nevertheless draw attention to include:

1. That the GOH and TPTC genuinely desire to increase their capacity to plan, organize and execute feeder-road construction. Yes, we think they do. No, they have not cleared away obstacles in their own administration to give effect to this intent. With the Reorganization, the prospect of that brightens.

2. That the Project Paper's schedule was soundly conceived and would prove reliable: No. Especially in the time allowed for offshore procurement, and in other respects, the schedule did not prove useful.

3. That private Haitian contractors would want to expand their business in rural road construction. So far, this has not been the case or, rather, such an intent has not surfaced in project dealings to date. Moreover, the TPTC Reorganization tenet that it should leave the main bulk of rural and other road construction to contractors in the future has in mind foreign contractors, particularly. This assumption, crucial to the Haitians, has yet to be established as true or not. And it is an important task of the project in the next few months to test it further and more probingly than has been done so far (that is, to attempt to find a formula of terms and conditions that would bring Haitian contractors into the picture competitively).

INPUTS

Project Design

(For the purpose of this evaluation, we view the project design, as conceptualized in the PP, as an input of fundamental importance to the total picture.)

FINDINGS:

1. While we consider the stated goal of improved rural standard of living and societal integration as apt and cogent, we question several elements of the design on technical grounds as well as logical and psychological ones.

2. The technical standards of the design are uneven. Some standards in the PP are too low (e.g., no new drainage, 5cm surfaces); some others are too high (e.g., the specification of "crushed rock surface").

3. In greater detail, "all weather service" means a road that is serviceable under all weather conditions. It must support the design loads without interruption. Strictly speaking, this would apply to stream crossings as well as to the road surface. To provide such service, the PP envisions an average width of 4 meters (6 meters for the 12% with heavier traffic) and improvements not exceeding the following restorative tasks:

--Repair of base and subbase failures (removal of unsuitable base/subbase, placement of selected material). (Note: There is no general provision for providing a base throughout, but only where failures have occurred.);

--Repair of slopes;

--Repair of damaged drainage structures. (Note: There are no provisions made for the installation of additional drainage, only correcting existing drainage;

- Restoration of lateral ditches;
- Repair of surface failures and placement of 5cm (average) layer of crushed rock surfacing. (Note: Stabilized run-of-bank or aggregate-soil mixes are not mentioned);
- Widening of the traveled way in some sections where limited sight distances or traffic considerations make this mandatory (turn-outs);
- Clearing of ditches and embankments.

4. In our view, a fundamental, logical weakness of the design as conceived in the PP, is that it attempts to achieve too many objectives simultaneously, thus dissipating the available pool of: time, physical resources, and human will and energy over too wide a field. The major of these diverse objectives are:

- a. An improved land transportation network in agricultural areas;
- b. Institution building of TPIC;
- c. Capability augmentation of private contractors;
- d. Controlled experimental research results; and
- e. Increased rural employment on road work.

Respectively, these concerns are: physical, organizational, entrepreneurial, investigative and labor-economic. They cannot all be served, much less maximized, simultaneously. Indeed, some of the tactics used to accomplish one objective deter the achieving of others. For example, there are numerous logical conflicts between objectives, (a) and (e) above; (b) and (c); and (d) vs. all the rest.

5. Smaller undesirable design features are:

- a. The repetition of Output #4 (that is, improved institutional capacity of TPIC) at the Sub-Purpose level;

b. Internal inconsistencies in various design documents, e.g., Project Execution Schedule shows audits in CY 78, 79, 80, and 81 whereas the PERI chart has them as CY 77, 78, 79, and 80; and the PPTS shows only one "Mid-Project Audit";

c. Similarly the Project Execution Schedule shows five evaluations (from 77 to 81) whereas the PERT chart has three (78, 79, 80).

6. The logic and tenability of design assumptions have already been dealt with in an earlier section of this report.

7. We found no good reason for the PP to divide basic equipment for the two brigades, and ELS, into two separate orders.

8. On a more psycho-logical plane, the Feeder Road Project embodies the dualism of physical and organizational objectives often present in AID projects. However, the "log-frame" clearly makes the physical result--940 km of all-weather roads--the principal intermediate objective ("purpose"). Increasing TPTC and private contractor capability is listed as secondary. Yet, an informal poll of five members of the Mission Feeder Roads Committee resulted in 4-to-1 for the institutional capacitation objective as primary.

a. The Consultant, too, when asked what the principal objective is, opts for institutional improvement. Presumably, these responses were forthright and genuine and were not prompted by the dismal progress toward the 940 km objective.

COMMENTARY:

Concerning the technical points:

A. The Consultant staff of the project understandably finds itself in a dilemma. On the one hand, the Project Paper calls for roads to be built to provide "all weather service" while, on the other, the standards it proposes would not, in their opinion, provide that level of service. They perceive that the improvements as described in the PP are more in the nature of "maintenance upgrading" than reconstruction and improvement and that, if followed, they would result in washed-out roads which would bring criticism and ridicule on both the roads and their planners and builders.

B. The thickness of surfacing required to provide "all weather service" is a function of the type of base and subgrade and the kind of traffic, but its lasting qualities are strongly affected by displacement by vehicle tires and by the amount and intensity of rain. Determining the exact amount needed is based on empirical formulae, the values for which are determined by sophisticated procedures too involved to justify in the present type of construction. Experience and good judgment must therefore be substituted. The "Guidelines for Roadway Base and Surfacing Courses" attempts to provide guidance and in doing so specifies a surface-base combined thickness far greater than the 5cm average noted in the Project Paper. This, of course, adds considerable cost to the construction beyond the original estimates.

C. The concern expressed by the field engineers, the project director and the Consultant staff that building any less thickness would soon result in

impassable or washed-out sections of road is due (in part) to the fact that they do not have confidence that road maintenance could respond quickly enough or often enough to correct localized deficiencies which could be expected with such standards.

D. It is Group Seven's opinion that in some respects the standards proposed in the PP to achieve the stated objective are unrealistically low and therefore that total costs may have been underestimated. The requirement to provide "all weather service" implies higher standards with commensurate costs. Such higher standards are justified because underestimating thickness requirements with resultant local failures will reflect adversely on the project and interrupt what is conceived of as an "interruption-free" level of service. On the other hand, calling for "crushed rock" is unnecessary and too costly.

E. With regard to drainage, it is not enough to repair existing structures. A road which ignores the need for adequate drainage is doomed to early failure. If errors in judgment are to be committed in drainage, they should be committed on the conservative side. Once a washout occurs, a road no longer provides "all weather service."

Concerning the Logical Points:

F. Unless and only unless GOH is fully committed to the project and unless the right counterpart staff are assigned to it, the stated short-range objective (output) of "improved TPTC institutional capability" is incompatible with the stated intermediate range objective (purpose) of "improved land transportation network."

G. If GOH is less than fully ego-involved, or if unsatisfactory counterpart staff are assigned to the project, it puts the Consultant (TAMS) in a "no-win" situation. They cannot achieve both objectives: institution building and direct services on road reconstruction/improvement.

Regarding the Psychological Points:

H. We submit that the lack of a clear sense of direction is not limited to the Haitian implementing side or the Consultant's technical assistant efforts, but can also be seen in the AID design documents themselves as well as in the Mission.

I. If, as the Consultants state, their Haitian counterparts do not really need any technical engineering help, but rather lack management skills, and if the primary objective is indeed to be institution building, then the type of engineering advisory services furnished have been largely inappropriate, in our view.

Technical Consulting Services

1. A contract between the Consultant Firm and GOH was signed March 18, 1977. Under its terms, the Consultants are to provide services to the Government relating to the improvement of the management, design, and construction of the Feeder Road Program and establish training programs for the training of Government personnel.
2. The Consultant Firm's Proposal, on the basis of which the Contract was presumably awarded, mentions:
 - preponderant experience in the U.S., largely in direct construction of airports, tunnels and subways;
 - little background in development technical assistance work;
 - familiarity with labor-intensive construction approaches; and
 - two proposed training experts.
3. To supply these services, 12 long-term and 3 short-term staff were to be furnished as shown in Table 4. Additional specialized short-term assistance was to be provided as found necessary (12 months).
4. The Team Leader arrived in Haiti in May, 1977. June 1, 1977, was the official starting date for the consultant services. Six other members arrived during May and June. Others followed subsequently. The arrival schedule corresponds roughly with the "Estimated Work Schedule" shown in the Consultant agreement. Two heavy equipment mechanic-advisors were furnished to help in maintenance of equipment. One arrived in June, 1977 and is still in Haiti. The

TABLE 4. PROJECT PERSONNEL ASSIGNMENTS

TAMS (in order of arrival)						TPTC	
Name	Title	Arrived	Specified Contract Time	Departure	Actual Time Months	Counterpart	Assigned
F. W. Rawson	Sr Transp Engr	May 77	48	present	24 (to date)	R. Milfort D. Dauphin	Oct 76 June 77
W. Richard	Budget Advisor	May 77	20	present	24 (to date)	A. Rosemond	Aug 77
I. Cohen	Field Engr	May 77	24	June 78	12 mo (R)	M. Michel	Sept 77
M. Laungkhot	Adm Advisor	June 77	20	Jan 79	20 mo	R. Edouard	July 77
R. Bartolo	Transp Engr	June 77	30	Dec 77	6.5 mo (R)	E. Perpignand	May 77
J. Capalbo	H. Mechanic	June 77	24	Present	23 (to date)	L. Magloire	July 77
P. Bartlett	Leasing Spec	June 77	12	June 78	12	E. Ligonde	May 77
G. A. Potter	Socio Anthro	July 77	9	Nov 78	17	--	--
W. Preece	Equip Spec	July 77	20	Jan 79	18 (R)	W. Clement	Aug 77
J. Bernier	Account Spec	July 77	7	Feb 78	19	K. Gauthier	Nov 77
T. Forbes (TDY)	Agronomist	July 77	--	July 77	0.5 (R)	H. Louis- Jeune	Aug 77
R. Miot	Field Engr	July 77	24	Present	21 (to date)	S. Duplan	July 77
M. Tolme	H. Mechanic	July 77	12	Mar 79	20	J. Lanose	July 77
K. Roberts	Agro Economist	Sept 77	N.S.	Oct 77	2	--	--
B. Grigsby(TDY)	Agronomist	Sept 77	--	Oct 77	1.5	(H. Louis Jeune)	--
X. LeBourgeois	Transp Econ	Nov 77	19	Apr 78	5.5 (R)	--	--
A. D. Gennaro	Field Engr	June 78	24*	Present	11 (to date)	(M. Michel)	
M. Marra	Transp Engr	June 78	30*	Present	10 (to date)	(E. Perpignand)	
N. Ziegler	Field Entr	June 78	24**	Present	10 (to date)	S. Duplan J. St Louis	Nov 78 Nov 78

N.S. = Not specified
R. = Resigned
* = replacement
** = addition

other arrived in July, 1977 and departed the end of March, 1979, following an apparent extension of his tour by 8 months. Neither of the training specialists mentioned in the Proposal ever arrived.

5. To date, there have been five resignations of consultant staff prior to completing their terms. Reasons given vary, but they are generally associated with personality problems or working conditions. Staff replacements were made without undue delay.

6. Seven consultant staff members are now present in Haiti. Except for the Senior Transportation Engineer, the terms of the others are due to expire on or about the end of the current fiscal year.

Is the Feeder Road Consultant Firm providing the services called for in their Scope of Work and, if so, how effectively?

A. Assistant to TPTC Management: Including assistance in planning and implementing the necessary reorganization in the basic structure of TPTC as well as to advise and assist TPTC Management relative to actions and procedures for insuring the timely implementation of all elements of the program.

FINDINGS:

1. The Consultant's files and records indicate a flow of communications in this regard, including weekly staff meetings with the TPTC top staff counterparts of the program. There are also references to meetings with other TPTC officials usually in company with the Project Manager.

2. The Consultant designated the Administrative Advisor to act as Consultant to the TPTC ad hoc committee which was established to evaluate and implement the reorganization of TPTC. The necessary legislation has been enacted. The reorganization is in process and is gradually being implemented.

3. The Administrative Advisor's term of employment with the Consultant was completed and he has since been employed by TPTC.

B. Assistance in Planning and Design

FINDINGS:

1. General assistance has been provided to the TPTC project personnel in the planning and design for brigade and contractor construction. This assistance has more often been required in encouraging initiative and bringing together the various functions necessary to assemble a complete set of contract documents rather than in providing design expertise, i.e., plans, specifications, special provisions, contract estimate, bidding proposal, etc.

2. Weaknesses were more evident in the anticipation of the various requirements than in performing the technical tasks. It should be mentioned that very little leadership was apparently provided in this area even though the responsible counterpart was adequately qualified technically. It is said that continued absence often made it necessary that the advisor assume direct supervision in order to provide needed direction.

Standard designs have been developed which are slated to become a basis for future construction.

3. Prequalification for the selection of engineering consultants was completed before the arrival of Consultant Team and was not participated in by them.

4. It should be kept in mind that as of this date, no complete project has been designed for brigade construction and only one project has been awarded to a private contractor for construction. The design and the plans for the work were very basic. One set of contract plans completed by an Engineer Consultant has been prepared for contract construction but has not yet been authorized for advertising.

C. Assistance in Contract and Construction Management

FINDINGS:

1. Contract management and Construction management are closely inter-related. Procedures are well standardized and have been experienced previously by TPTC.

2. The Consultant assisted and advised on matters pertaining to the one project awarded to the Contractor to date. This is illustrated by the fact that the original proposals received on the one project were rejected and the project was modified and then readvertised.

3. Assistance in Construction Management is evidenced by the presence of the three Field Engineer Advisors in the field with the brigades and the

Contractor and by the various records being maintained for the control and measurement of quantities and costs.

D. Assistance in Economic Studies and Evaluation

FINDING:

There has been no development of procedures to date on this task.

E. Implementation of Labor Intensive Pilot Project

FINDINGS:

1. Neither Consultant Team Leader nor any of his staff had had any prior experience with labor intensive construction methods (contrary to the claims in the Proposal).

2. The Consultant nevertheless assisted in the organization and operation of a labor intensive pilot project. A report consisting of five volumes has been prepared and furnished in draft form. While the draft report provides some information which is useful, it fails to provide any explicit comparison between different mixes of labor-equipment construction techniques. We concur with the October, 1978 Report of the AID-World Bank Team that this Consultant task did not yield the intended information.

F. Assistance in Developing an Equipment Leasing Service

FINDING:

The Consultant does not appear to have been of appreciable assistance in this task primarily because the terms of the advisors expired too early in relation to the arrival of the equipment. This does not, however, seem to have adversely affected the formation and operation of the Leasing Service (SLELC).

G. Assistance in Cost Analysis, Budgeting, Accounting Systems, etc.

FINDING:

Discussions with the Budget Advisor indicate the considerable depth to which these subjects have been entered into. The monthly reports provide summary information on expenditures, budget and current status. Included in the Appendix are samples of forms, reports, etc.

H. Assistance in Equipment Procurement and Maintenance

FINDINGS:

1. The mechanic advisors' arrival preceded by almost a year the arrival of the IFB #1 equipment. They are thought to have contributed heavily to keeping the old equipment operational.

2. The remaining mechanic advisor alternates weekly between the two brigades. It is reported that the TPTC chief mechanics are technically capable, but require active support from the Consultant to be effective.

I. Management Information System

FINDING:

No formal system has been established apart from the various individual reports.

J. Detailed Work Program

FINDING:

A detailed work program entitled "Inception Report" (undated) has been prepared by the Consultant. This report consists of 55 pages and 8 annexes. It covers the Scope of Work, work program scheduling, organization, staffing, etc., for the various aspects of the project. It is included in the Appendix for reference.

K. Quality of Consultant Inputs: With regard to the 12 tasks as listed in the Consulting Agreement, we rate the extent of compliance as follows:

Task	Extent of Compliance		
	Full/ Complete	Adequate/ Partial	Inadequate/ Minimal
Assistance to TPTC Management	X		
Assistance in Planning & Design		X	
Assistance in Contract Management		X	
Assistance in Economic Studies & Evaluation			X
Implementation of Labor Intensive Pilot Project			X
Assistance with Construction Management		X	
Assistance in Developing an Equipment Leasing Service			X
Assistance in Cost Analysis & Budgeting			X
Assistance in Accounting System		X	
Assistance in Equipment Procurement & Maintenance		X	
Management Information System			X
Detailed Work Plan	X		
TOTALS:	2	5	5

Assigning weights of 10, 5.7, and 2^{1/2} for full, adequate, and inadequate performance respectively, the overall rating for the Consultant inputs to date becomes 49% (where 100% = "perfect" and 68% = "adequate").

COMMENTARY:

A. Consultant has had to operate under difficult conditions on a project whose design characteristics are, in part, questionable. Consultant services overall are judged by us to have been somewhat less than adequate to date. The latter fact is probably related in some measure to the former.

B. In retrospect, it appears that some of the team arrived too early in the program to be fully effective (while in terms of the Project schedule, they arrived late).

C. To date, five members have resigned before completing their assignments. This may raise a question, however, about adequacy of consultant personnel selection, orientation, and incentivization methods.

D. With but few exceptions, consultant staff and counterpart staff appear to have enjoyed a satisfactory working relationship. Corrections were made when required.

1/ Averages of values independently assigned to categories by three senior members of the Evaluation Team. All tasks are weighted equally here. As in all rating scores, there is some "error of measurement" involved, so that the "true" score (which is indeterminate) might well be a few points higher or lower.

E. Frequent top staff meetings (almost weekly) have been held between the two staffs (see Appendix). Some contacts are made almost daily. Headquarters staffs are housed in the same building, making contact easy. Consultant field personnel generally stay in the field and operate in close coordination with their counterparts.

F. The advisors feel that most counterparts are technically qualified for their assignments but lack the necessary managerial and organizational skills and the initiative to continue at the desired pace without continued assistance. A stated exception is SLELC.

G. Language has not been a difficulty. Five of the present seven consultant team members do speak adequate French, some fluently.

H. The Consultant's former "resident manager" was redesignated "project manager" effective January 1, 1979. Formerly, the project managership was in New York.

G7 learned of this too late to take into account in our separate topic analyses. We mention it now, even without having examined its effects and implications, because we think it potentially significant in the matter of sound management and optimal project reorganization.

We would say, in general, that it is a mistake to retain at a company's U.S. headquarters the authority to manage an overseas technical assistance project such as this. The practice may come from engineering-project execution contracts--which, however, ought not be confused with bilateral collaboration

in institution building in which the instruments are the advisory and training services we are evaluating.

While unfortunately this error was not corrected earlier, there may still be time for the new arrangement to prove its value.

Training

Requirements and Expectations

1. The Loan Agreement (p. 10) reads, "The Borrower shall cause to be provided qualified and experienced management for the Project, and it shall cause to be trained such staff as may be appropriate for carrying (it) out..."

2. The same responsibility is mentioned in the GOH Consultant Agreement under Duties, p. 2: "The Consulting Engineers shall (provide) engineering (sic) services relating to...the establishment of training programs and the training of Government personnel."

3. Despite these mandates, training per se is not one of 12 project tasks listed in the Consultant Agreement (pp. A4-6) and, in that listing, training is mentioned only in the case of economic studies and evaluation. On the other hand and with respect to "all tasks," they (the tasks) are to be implemented "in a timely manner" and, at the same time, implementation is to "maximize the training of local personnel."

4. In view of uncertain project performance in the matter of training, it is important to keep the formulation of these expectations or requirements in mind, along with the following:

a. One of four outputs scheduled in the Logical Framework of the PP is that "Institutional capacity of TPTC to plan, organize and execute feeder road programs (is to be) improved." This indirect reference to training is supplemented by a Project Execution Schedule in which 5 of the 41 items call directly

for training, using that word (ELS and budget-accounting, Construction Service, TPTC field staffs, and equipment operators and mechanics). Moreover the project agreement has \$36,000 set aside for training overseas. And, finally, in its project summary on p. 2, the Project Paper says that in the process of providing all weather access roads, "major improvements in TPTC and local private contractor capabilities are expected." (Emphasis added)

b. Thus, while in "all tasks," fuzzy wording gives training equal importance to physical work, the training function is not defined in any of the documents that obligate and guide the parties. No activity designs, specifications, output targets, suggestions or specific expectations are to be found. (Compare this with the rich detail of guidance for the physical goal which occupies nearly all of the 250 pages of text, charts, tables, statistics, etc. of the documents cited.) The passive voice used above to indicate the achievement of training ("...major improvements in capabilities are expected") is also indicative.

c. The explanation of the confusion between ends and means, in training, lies apparently in the meaning loosely attached to the term "technical assistance." Training, it implies, is more or less a by-product of technical assistance. Indeed, in a pinch, the terms can be used synonymously. And we are left (and we suspect the Consultant was left) with an open choice to believe either that whatever the technical assistants did would be thoroughly, continuously and exclusively training, or, that none of their work need be training per se.

d. Once having won the award, Consultant calls attention

to the firm's "extensive experience in establishing and conducting training programs...overseas...as well as in New York," (p. 54 of a 55-page Inception Report, ca. October, 1977). He goes on to propose:

(i) On-the-job training, with two "phases" (one, the daily working association of advisors with counterparts; the other, "review and analysis of considerations leading to major study decisions or conclusions" for whatever that may mean);

(ii) to "organize short courses on specialized subjects";

(iii) to bring TPTC employees to New York, "for work and training" in the Consultant's Highways, Planning and Economics, and Computer departments. And the Consultant hoped that as the specific result of these efforts, TPTC's "developed capabilities would take over (full project) responsibility," and the firm could then "phase out."

In short, the Consultant responds to the generalities of its contractual mandate with fairly specific work proposals. It also reserves a section of its monthly report for training (which is reported, regularly, to be proceeding very well).

FINDINGS:

Since training was said to take place as a function of all technical assistance work in the advisor-counterpart relationship, we attempted to classify the relationship in different activities according to the degree of conscious or explicit training that went into it (admittedly a subjective, but perhaps also a suggestive exercise). The scale of more-to-less explicit is 1-to-5, with 1 meaning most explicit and 5 meaning none at all. (The ratings have nothing whatever to do with the quality of the technical assistance itself.)

1. Budget and Accounting: Two counterparts are involved. A manual or collection of all financial documents used in the project has been assembled. The work is thought of and expounded as a coherent "system," but, to some extent, it is a system peculiar to this project and it is different from the TPTC system. Excepting to the degree that basic concepts were conveyed (which has not been a prime objective of this training, we infer), individual counterparts returning to TPTC proper would have difficulty applying the system, presumably. (Note: Accounting is the main subject, rather than budgeting, the latter having had a small part in project management and control.) Rating: 2.

2. Administration: (Administration, not including TPTC reorganization in which the Consultant had no training function, but did have an important technical assistance role.) The term is used to mean management at the project headquarters building, for which internal guidelines were prepared and local procurement arranged. The experience of setting up these functions may have "trained," but training in administration in any general sense was touched on only briefly. Rating: 3.

3. Surveying and Designing: The design and survey documents and materials can be used as training materials, in this case, and the drafting room experience is not so different from classroom experience. Included here is training in the task of appraising outside designs. In the interest of training, we were told (and clearly for other reasons, too) the design activity has been extended beyond the present need for designs (as "eyeballing" gains acceptance). Rating: 2.

4. Contracting: Documents and methods used in prequalification procedures, standard and particular contract conditions, specifications, and bid evaluation, have lent themselves to fairly systematic instruction in this topic.
Rating: 2.

5. Mechanics and Maintenance: A good shoulder-by-shoulder relationship exists in this function. And here, as anywhere, the journeyman learns from the master. But only a modicum of training took place in the sense associated with diagrams, drawings, sectioned machine parts and other training materials.
Rating: 4.

6. Field Engineer Supervision of Construction: A close relationship existed here too. Experienced Consultant engineers took what time they could from construction operations to instruct their counterparts who were already trained technically, but lacked field "savvy." But the difficulty of training during a hard day's work, that is, of drawing out the general lesson from the urgent task at hand, and then of driving that lesson home through discussion and instruction, is known to anyone who has actually tried that dual exercise.
Rating: 3.

7. Management Overall: Despite that this is the ability most notably lacking in the project, in the view of both Consultant and TPTC observers, it is the least teachable in a counterpart relationship in which the executive already responsible for management is the student. Recognizing that, the Consultant necessarily but unsuccessfully falls back on the "by example" approach, along with polite prodding and occasional exhortation. Rating: 5.

8. Whatever the learning fall-out of such relationships, they cannot be classified as training. There has, for example, been no attempt to measure or even rate the magnitude of the fall-out (such as would be standard in any more explicit training programs).

9. The project offers two instances of training as such, involving courses and the practical demonstration of principles. Neither of these involved the counterpart relationship: in one case, the trainers are Haitians (not Americans); in the other case, the trainees are workers (other than counterparts).

a. Equipment Leasing Service: Equipment operators are given practical training two or three times a week by the Chief Operator at the installation--for a week or more, varying with the trainee and the type of equipment concerned. Some 22 operators have benefitted. Mechanics, as well, receive informal, but explicit, training at the ELS site. In addition, four mechanics are attending courses 4 hours a week given by the Haitian Tractor Company nearby. By October, 1979, the ELS director expects to augment his in-house training capacity with audio-visual materials. The Consultant has not been involved in this program. (The rating in this program would be (1) by definition.)

b. Labor Intensive Light Brigade Supervisors: Ten workers and supervisors of the Pilot Project received training in 1978 during the halt between the end of the project and the start of light brigade work. (They are called "superintendents" on the project. They earn \$150/month, ranking at the third field echelon, under the field engineer and the general superintendent, and over foremen and subforemen.)

There were 3 days of classroom work, in Port-au-Prince, consisting of guided reading and explication by the TPTC field engineer of the Consultant's "Training Manual for Supervisors and Foremen of Labor Intensive Construction and Maintenance" (prepared in New York).

These training materials, not distinguishable in any way from operating documents, are further flawed because the illustrations accompanying every page of the English edition were omitted from the French version.

This was followed by field training, of about 1 month, on a road site near Blockauss. A Consultant engineer gave practical instruction through observation and counseling in the tasks these supervisors would oversee-- such as laying culvert pipe, drainage works, masonry of headwalls, shaping of road surfaces, and the use of string lines and levels. There was no work interference (as noted), but the site was realistic and authentically representative of roads with which this project is concerned.

Some improvement in the supervisors' performance is reported. Occasionally, they are seen at their work now with the manual in hand. The training has not changed their function or pay, as those who were promoted in moving from the Pilot to the light brigade project had achieved the supervisor rank before the training began. One evaluative view of this experience, with which we tend to agree, is that the field work was more valuable than the class work.

10. The staff recruited for the project did not include a training advisor; nor was anyone designated to look after that function.

COMMENTARY:

A. With two minor exceptions involving few people and little time (ELS and light brigade training), the advisors relied altogether on the spin-off from their working juxtaposition with counterparts to conduct "training." The result is haphazard.

B. The Consultant also misses a real distinction between technical assistance (in which you might say "this is what you do in the situation right before you...") and training, on-the-job or elsewhere ("this is why you do it, and the principles you abstract from that lesson will apply elsewhere").

C. Apparently, thought was given and no action taken in the direction of developing a training capacity in TPTC itself. Nor was there discussion of TPTC's present training activities and resources. So far as we know, discussions of training in any context have been incidental.

D. Regarding the opinion, widely and conventionally expressed here, that the Haitians were already technically qualified when they joined the project and that training was needed only in the practical application of technical skills, and in supervision and institutional skills such as coordination of each function with the others (that is, management), the Consultant was more successful in the matter of encouraging the practical use of technical skills than in any other, we believe. While he was also conscious of the need to encourage coherence and coordination in the workings of the project's organic whole--that is, of the need for management training and institutional development--he made no serious effort to fulfill that need. In part, we suspect,

the Consultant may have sensed the contradiction in working for TPIC's institutional development in a project institution that was somewhat independent of, and separate and distinct from, TPIC.

E. There is considerable evidence that in both technical and management skills, the average Haitian road engineer has a long way to go. Limiting its perspective to the need for and the potentials of true training, the Consultant neglected available training techniques and opportunities for introducing training programs that were suggested, in spite of everything, in the project's documentation. In the final analysis, the Consultant allowed the urgencies of the physical job to shove training aside. The reasons for this, we speculate, were:

- a. That in fact the Consultant group was not experienced in training (their training specialists never arrived):
- b. That the mandate to train was ambiguous and unclear; and
- c. That the GOH, for its part, failed to "cause" the activity to take place.

It can also be noted that the Consultants were themselves aware of and may well share these views. (See one advisor's discussion-memo of August, 1978, in the Appendix.)

F. Elements of what the Consultant developed here--such as accounting work specifications for contracts, field supervision techniques, and perhaps also, equipment maintenance--are salvageable and may lend themselves, with modification, to future codification and training use in a deliberate way and.

to a broader TPTC audience than the project itself commanded. If so, such could be done in the remaining months of the contract or thereafter. The ex post facto approach (rather than during the project's construction work) would have the advantage of incorporating what the advisors have learned about the needs and abilities of the potential trainees and about the problems they face. And it would skirt competition for the advisor's time between operations and teaching.

G. Beyond that, we take note of some constructive suggestions put forward by a former Consultant advisor, suggestions that illustrate low-cost training possibilities that could be conducted now or after the Consultant leaves:

a. "Participant" training: send a few TPTC field engineers to observe a rural U.S. county (or a small U.S. state) highway department at work. This has been successful in AID programs elsewhere.

b. Detach some headquarters and, in rotation, all regional, TPTC engineers for short on-site tours to observe the brigades at work under consultant advisors on the project roads. Involving regional engineers, by the way, would honor the Reorganization's precept favoring decentralization of the Department's structure and operations.

c. Use project money to appraise and perhaps augment TPTC's own, current, training programs.

Equipment

FINDINGS:

1. Before the Feeder Road Project started, the brigades were in possession of some equipment remaining from previous TPTC construction activities. It is recognized in the PP that additional equipment would be required for operations, IFB #1, soliciting bids which included equipment for both the brigades and the Leasing Pool, was prepared in May, 1977.

Bids were said to have been opened in July, but an award not made until October, 1977. The equipment apparently did not start arriving until May of 1978. (See Appendix for list of equipment and distribution between brigades and SLELC.)

2. IFB #2 for the remainder of the equipment was initiated in December, 1977, but a contract was not awarded until February, 1979. Delivery is not expected prior to August, 1979.

3. During this later interval, some needed equipment was leased by the brigades from SLELC.

COMMENTARY:

A. The late arrival of the IFB #1 equipment contributed materially to the continuing low production of the brigades. One brigade operated without adequate equipment for some 8 to 9 months and the other for at least 3 months.

B. The brigades are still restricted in their production pending the arrival of the IFB #2 equipment.

C. An examination of equipment down-time indicates it to be substantial, but not excessive. The effect of down-time on brigade operations should be materially reduced with the delivery of the IFB #2 equipment.

D. Heavy equipment maintenance is a continuing problem, but some progress is seemingly being made toward its control.

Administrative Support

FINDINGS:

1. Administrative support for the project by TPTC has been spotty, ranging from good to poor.
2. A Project Manager was designated prior to the Consultant's arrival. Adequate office space, utilities, etc. have been provided with space for Headquarters Counterparts in close proximity to advisors (in some cases, the same room). Counterparts were generally assigned on a timely basis.
3. Certain administrative and support personnel have been provided as has transportation and some other logistic support.
4. The link between technical planning or scheduling and administrative execution is more problematic. Illustrative typical delays and inactions that have been the subject of attention at staff meetings and represent the types of difficulties experienced in obtaining action on what would normally be considered routine problems and requests are contained in our Appendix.
5. One of the major deficiencies has been the reported continued absence and lack of attention by a senior counterpart. This created a void in that segment of the Advisor-Counterpart relationship and has resulted in some activities drifting without adequate direction.

COMMENTARY:

We regard the uneven administrative support furnished by TPTC to be an indicator and a reflection of existing GOH commitment to the project.

IMMEDIATE OBJECTIVES (OUTPUTS)

In this section, we present project accomplishments and shortfalls concerning the following specific objectives: (1) Road Reconstruction and Improvement; (2) Equipment Leasing Service; (3) Labor Intensive Pilot Project; and (4) TPTC Institutional Capability; followed by a summary treatment of (5) Principal Reasons for Delays.

Road Reconstruction and Improvement

To what extent has the road reconstruction been accomplished as originally planned? What further assistance to the GOH may be necessary in order to insure that the project is carried out as planned after the current technical assistance contract expires?

To properly answer the above, it is helpful to break the subject down into several of its components and examine them individually. These will be taken up as follows:

- A. General Situation
- B. Surveys and Design Plans
- C. Construction by Contractors
- D. Construction by the Brigades

A. General Situation

FINDINGS:

1. The Project Paper (PP) calls for the reconstruction of approximately 940 km of rural roads throughout Haiti to provide "all weather service." Approximately 620 km are to be built Force Account by GOH forces and 320 by private Haitian contractors over a 5-year period. While the PP envisioned GOH brigade

construction starting prior to mid-1976, the actual start of such construction was September 1, 1977. If, as presently conceived, the program ends September 30, 1981, this would require the brigades to construct an average 12.9 km per month and the contractor-built roads to average 6.6 km per month. As of the end of March, 1979, the actual km completed was 83.5 by the brigades (including the Pilot project) and 3.5 km by Contractor compared with the requirement based on monthly averages of 245 and 126.5 respectively.

2. The roads being constructed by the brigades exceed the standards in the PP appreciably. The standard surfaced width being built is 5m with 0.5-meter shoulders making an effective width of 6 meters from top of ditch to top of ditch. This standard 5m minimum has been established by law.

3. Drainage structures, retaining walls, etc. are being installed where considered necessary.

4. The 5cm of surfacing or surfacing plus base is commonly, if not universally, exceeded. In fact, the "Guideline for Roadway Base and Surfacing Courses" issued by the Consultant for guidance in the field (see Appendix) shows combined thicknesses for surface plus base of 10cm for the best of subgrades to 45cm for very poor subgrades.

COMMENTARY:

A. Our findings corroborate the very slow start that is already well known to USAID/Engineering.

B. The increased surface width, from 4 to 5 meters, apparently stems from a new GOH law. We believe this requirement to build a minimum of 5 meter surfacing to be adding costs which cannot be technically justified by the amount of traffic (either present or anticipated).

B. Surveys and Design Plans

FINDINGS:

1. Force Account Brigade Construction.

a. Most survey and design work completed to date for the brigades has been for the control of grades and drainage. It has been sketchy rather than completed surveys or completed design.

b. Until recently, there was little coordination between survey and design. That has now been recognized by placing both the survey and the design functions under the same supervisor. Since most reconstruction follows existing roads, survey becomes of importance only where grades are changed or where flat areas require close attention to drainage. Drainage requirements are obtained from top maps with additional verification of needs determined by field review. The field engineers are provided with a very basic plan-profile on which drainage requirements have been noted, but generally the field engineer "eyeballs" much of the engineering requirements.

2. For Contractor Construction.

a. All projects intended for Contractor Construction (except the Thomazeau Road) have been awarded to private Engineering Consultants for

development of engineering plans. Their agreements required that they perform all necessary surveys. Because contractor construction control methods require detailed measurement of quantities for both estimating and payment purposes, full and detailed survey as well as more detailed construction plans are more desirable.

b. TPTC, prior to the arrival of the advisors and through its prequalification committee, selected six Engineering Consultants who were each assigned a section of road to design. These varied in length from about 14 km to 40 km. It would appear that none were experienced at designing roads of this type and that initially they received very little guidance or instructions for standardization of the product to be produced. Delays up to 12 months in design submittals are being experienced. Three plans have now been submitted as final. The other three are said to be near completion.

COMMENTARY:

A. Brigades: For this type of construction, it is doubtful that surveys and design are making much of a contribution. Some survey is required to help provide design for smooth grades and to insure positive drainage. Similarly for design. Unfortunately, neither the survey crews in the field nor the designers in the office seem to be receiving effective supervision. Their production is low and it is difficult to say that they are receiving training. They appear to be technically qualified, but without strong direction they are marginally effective.

B. Design Consultants: Until contractors become more sophisticated and experienced, it is desirable that they be provided with a fully-engineered plan from which they can estimate quantities and build the project. This requires reasonably detailed surveys and plans.

C. Construction by Contractors

FINDINGS:

1. The project paper provides that 320 km of Feeder Roads be constructed by private contractors during the life of the program. To date, one contract for 7 km has been awarded for construction. It is now 50% beyond the scheduled completion date and is about 50% completed. This part of the project has barely made a beginning and is considered to be some 26 months behind schedule.

2. Initial design, specifications and contract documents were completed in September, 1976. This was a "straight line" plan, quite commonly used for this type of work in other areas. The contractors, probably because of inexperience in road construction, declined to bid the project with this abbreviated engineering plan.

3. It was then decided to provide a field survey and a more detailed plan for bidding purposes. Seven contractors were reportedly prequalified and the work offered for bid. Two contractors bid, but their bids were considered excessive. The plans were altered by reducing the profile and quantities, and by shortening the length. New bids were sought. One was received and eventually

awarded with work starting November 20, 1978. This sequence of events consumed about 2 years. There have been delay problems since the award involving adequate survey information and the quantity and quality of surfacing materials made available by the GOH. These, in addition to other lesser delays, have resulted in the completion date having been badly exceeded with the work far from completed.

4. An inspection of the project in the field discloses that some crossroad drainage has been installed, and about half the roadway has been formed. To date, no ditching or lateral drainage has been established. Ditches for inlets or discharge for crossroad culverts are poorly defined or nonexistent. Without ditching and defined runoff channels, a heavy rain during construction could cause considerable damage.

5. Crossroad culverts appear to be excessively large in diameter with excessive lines of pipe at the various locations. The large diameter requires a higher road profile, thus more material and greater costs. An effort has been made to lessen this increase by lowering the culverts into the ground. This, in turn, creates other problems by requiring deeper and more extensive inlet and outlet drainage. A more practical solution would have been to use lesser diameter culvert pipe.

6. The contractor claims to have been given four major changes in the road profile, thus adding to his delays. The Consultant confirms that major changes in profile were made.

7. The roadway placed to date appears well stabilized and presents a good riding surface. Equipment on site (Sunday, no work) consisted of the following: one bulldozer, one roller, one grader, one back hoe/front-end loader, and one water wagon. Trucks were not on site, but the contractor's storage yard is only 20 minutes from the project site.

COMMENTARY:

A. The Contractor claims that the initial reason for such limited contractor interest in the project was that the budget was known and was thought by the contractors to be unrealistically low. They also thought the project too small for the investment required. Some contractors were hesitant because of lack of experience in road construction.

B. The primary problems since the award of contract have been, first, the absence of survey data as a basis for construction layout and then the failure of TPTC to provide a source or sources of suitable material for base and surfacing as provided in the Contract. Approved sources did not contain adequate quantities. When quality material was exhausted, the Contractor was delayed while a search was made for new sources and testing completed to approve the quality. Other delays involved changes in drainage and changes in road grades. Since only one contract has been awarded, it is not practical to draw any definitive conclusions. However, the following observations can be made:

--Despite seven contractors having been prequalified, a total of only two have offered bids--only one, at the last bid offering.

--The successful contractor has not availed himself of equipment from SLELC.

- The low bid exceeded the Project Plan estimate by about 50% even though this project was (a) close to Port-au-Prince, and (b) probably among the least complex of the roads.
- The contractor is seriously behind schedule.
- The question must be raised as to whether the contractors will be interested in bidding and what the costs will be for projects which are far removed from the Port-au-Prince area and/or more difficult.
- It should be noted that, even had this project moved to construction on schedule, other projects could not have been let to contract because design consultants have only recently completed plans which could have been used for advertising.
- It should also be noted that TPTC apparently does not have engineers, quantity surveyors and the needed logistics to supervise more than the one contractor project at one time, according to Feeder Road Project staff.
- There is no indication at this time that the indicated target of private contractors reconstructing 100 km per year has been achieved or will be achieved in the near future.

D. Construction by the Brigades

FINDINGS:

1. The project provides that TPTC construction brigades reconstruct 620 km of feeder roads during the life of the program and that they reach the capability for reconstructing 150 km per year on a sustained basis.

2. Initially, there were two brigades, the North Brigade which commenced work on the program September 1, 1977, and the South Brigade which started on the program March 28, 1978. Prior to starting on the program, both brigades had been doing some work on road sections which subsequently were incorporated into the program. As of the end of March, 1979, the two brigades have been in operation 31 brigade-months and have completed 63.5 km or an average of just over 2 km per month per brigade. This is less than one half the rate which had been anticipated.

3. An important influencing constraint should be noted. Both brigades started under the handicap of operating without the equipment they were to receive from IFB #1 (some 8 to 9 months for the North Brigade and 2 to 3 months for the South Brigade). Apparently, as of this writing, neither brigade has yet received equipment which is to be provided under IFB #2. This is not now expected to occur before August, 1979. Although they were able to rent some key equipment, without their full complement the brigades are still operating under severe handicaps which will not be fully removed until the equipment from IFB #2 is received.

4. There has been a discernible upswing in the rate of progress a few months after the IFB #1 equipment became available. Part of this, however, is attributable to the incorporation of mileage completed by labor intensive work, but some improvement in their productivity is evident of late.

5. After the Pilot Project was completed and in an effort to improve progress, a "light brigade" was formed. This is an informal undertaking never officially approved by AID. It is primarily labor intensive with some light equipment aimed at assisting in the more lengthy hauling and in better compaction. This brigade has been engaged in finishing and improving work done under the Pilot Project and extending toward Bainet. Supervisors have undergone training in the various activities in order to provide a more effective operation. It is difficult to assess the progress rate because the work is intermixed with the work done under the Pilot Project. The Consultants have recommended that the light brigade be formalized and further equipped.

6. Each of the three brigades has an assigned field engineer advisor. They reside in the vicinity of the brigades and are available for assistance. TPTC engineers are in charge of the work and run the day-to-day operations. It would appear that the TPTC field engineers are technically qualified but weak in planning and management practices. Any absence from work (which occurs with some frequency) results in reduced progress. A heavy equipment mechanic advisor is available on a rotating basis between the two brigades. The TPTC mechanics are reported to be capable and accomplish acceptable results. In spite of this, equipment down-time is a factor and is reflected in the progress. A time sampling of down-time of key equipment for 3 months indicates a range of from 12% to 40%.

7. The brigades operate on a monthly budget that does not bear a direct relationship to the amount of work accomplished. The budget consists of

labor, maintenance of equipment, fuel and lubrication, materials and miscellaneous supplies. These costs tend to remain relatively constant from month to month regardless of work accomplished.

8. Costs of construction have reportedly greatly exceeded projected costs. Recorded costs for the North Brigade on three links have varied from about \$10,000 per km to over \$25,000 per km. For the South Brigade on two links, from about \$12,000 per km to over \$26,000 for an overall average of about \$18,000 per km. This compares with the projected cost of \$7,168 for the entire program.

9. A field inspection of some of the completed and partially completed North Brigade construction was made in early April. The quality of work appears to be consistent with professional standards for that type construction. The surface was well consolidated and rode smoothly. There were only minor indications of surface raveling and dusting was tolerable. The surface crown was graded to drain. The side ditches were well defined and were generally unobstructed. Cross drainage and drainage structures were well constructed with only minor indications of local erosion. The surface and base thicknesses were not measured, but there was little indication of local failures or potholes. Figure 2A is self-explanatory. Figures 2B and 2C show typical segments of completed roads in the north.

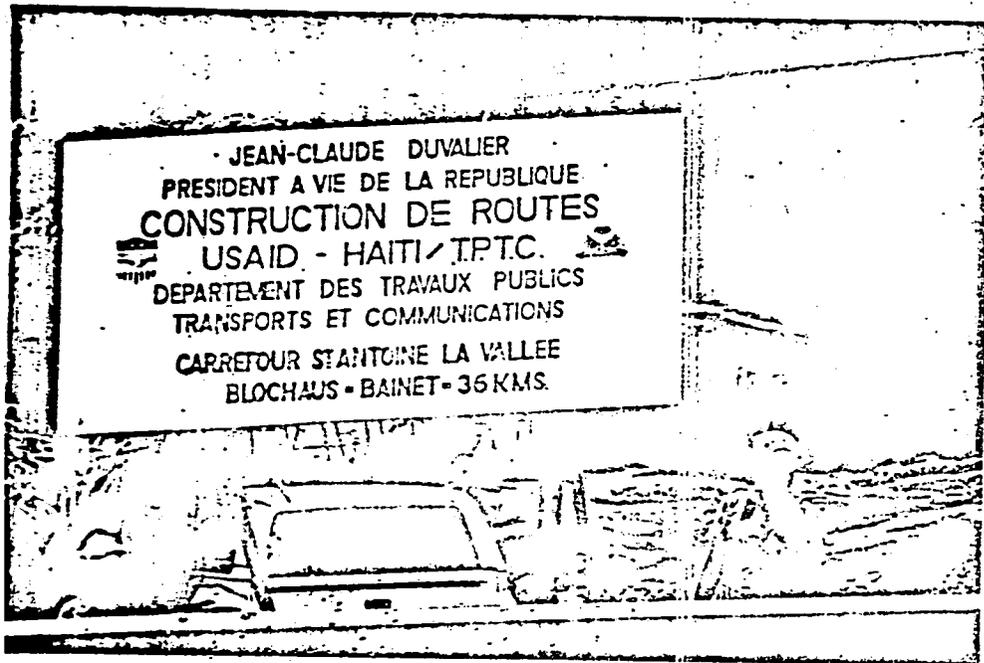


Figure 2A



Figure 2B

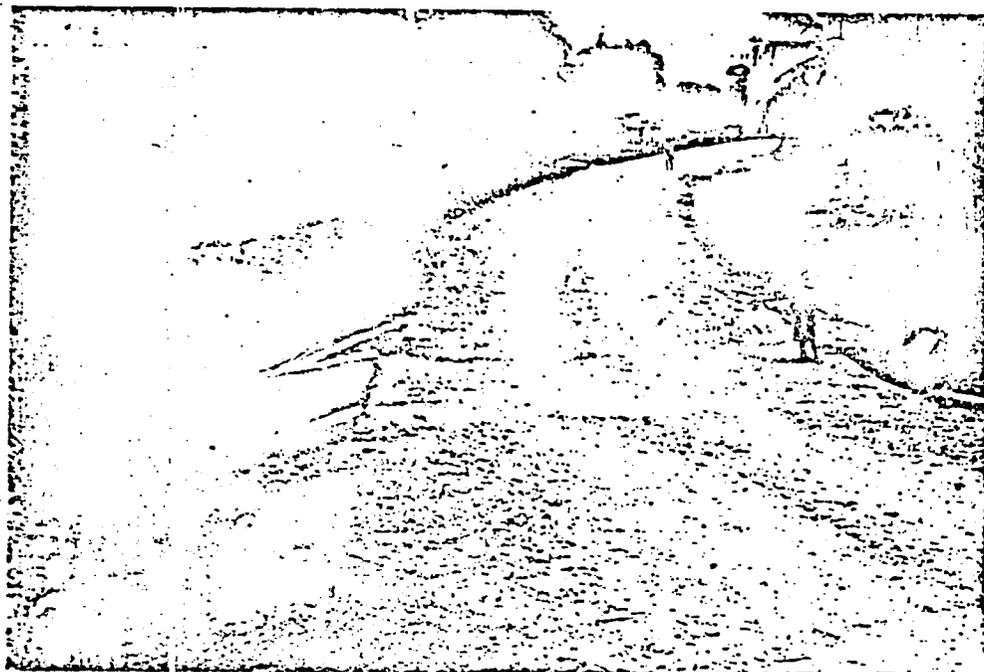


Figure 2C

COMMENTARY:

A. The brigade construction rate is obviously not living up to expectations and costs are exceeding projected costs by more than 200%. The brigades were late in starting and started under the handicap of old equipment in poor condition. New equipment did not reach them for many months. They have yet to receive their full complement, which is not expected for several more months. The delivery and utilization of the equipment is essential to continuing progress without interruption. It is difficult to judge fairly their potential until they are fully equipped.

B. The quality of finished roads observed in the north was good to excellent. If they are overdesigned for the actual traffic needs, it would seem to be in order to meet the requirement of "all weather service" with a resulting lessening of maintenance requirements.

We believe that some savings in cost (and incidentally, elimination of safety hazards) can be realized by less elaborate culvert headwalls which extend well above the road surface. (Not shown in photos.)

We also caution that there is a need to periodically regrade the road surfaces to prevent the wheel tracks from collecting water, thus causing potholes.

C. The addition of the light brigade would appear to be a viable addition to the heavy brigades although no substantiated cost comparisons are yet available. The advantages of reduced investment in foreign equipment and the impact of labor on the local community are obvious.

D. The brigades at this point are not capable of reconstructing 150 km per year, but they should improve appreciably with full allotment of equipment.

E. Budgeting based on operating costs rather than units of work accomplished does little to encourage better production rates or efficiency.

FEEDER ROAD PROJECT

Km Completed

As of March 30, 1979

From Appendix B2 = 87 Km. (Graph reading)

From individual Projects:

Completed:

Dondon-St. Raphael	12
Cor. Menard-Dondon	12
Houck-Port Salut	18.1
	<u>42.1</u>

Partially completed:

	<u>Km equivalent</u> <u>Weighted</u>	<u>Out of</u>
St. Raphael-Pignon	11.1	16.3
Cavaillon-Barroderes	10.3	36.1
Carrefour St. Antoine- Bainet	20.0	35.5
	<u>41.4</u>	
Contractor	3.5	7
	<u>44.9</u>	
	<u><u> </u></u>	

Total 87 km.

Equipment Leasing Service
(SLELC)

How effective does SLELC appear to be at present in providing the private contractors with needed equipment on a rental basis? What steps may be needed to strengthen SLELC's capacity in this regard?

FINDINGS:

1. The PP specifies that an equipment leasing service be authorized and placed in operation for the purpose of providing a leasing pool from which contractors desiring to contract for the construction of feeder roads could lease road building equipment for that purpose. The GOH authorized the establishment of a Leasing Service in March, 1977 and the staffing commenced in July, 1977. Equipment arrived July to October, 1978.

2. The Service was well enough established that some leasing occurred in the period August-November, 1978. SLELC had experienced a rapid growth in rentals during the period December, 1978 to March, 1979.

3. A visit to the new permanent site found equipment neatly arranged in an amply walled enclosure which also contains a temporary headquarters building. Operators and mechanics were undergoing training, the condition of the grounds was being improved and a new headquarters and shop facility are under construction.

4. The following were made available and are enclosed in the Appendix:

- a. Organigramme (Organization Chart)
- b. Tarif de Location d'Equipements (Rental Rates)
- c. Equipment List and Cost
- d. Rapport Trimestriel (including list of leasees)
- e. Memorandum Pertaining to Training
- f. Evaluation of Semester (October, 1978 - March, 1979)

5. The training of operators for this equipment appears quite effective. Not only is "in-house" training conducted, but arrangements have been made with Haitian Tractor for specialized training. Operators are also being crosstrained for more than one kind of equipment.

COMMENTARY:

A. It is important to note that the purpose for which the Leasing Service was created has had little opportunity for engagement. There has been but one contract awarded for the construction of feeder roads and as of this date, the Contractor has not availed himself of the Service. However, AID has authorized leasing to other private contractors and organizations on an individually approved (AID) basis. The considerable leasing which has occurred will have served as "shakedown" experience for leasing to Feeder Road Contractors when and if requests are received.

B. In reviewing the list of leasees on the March 22nd Rapport Trimestriel, it is noted that leasing was conducted with both the Feeder Road IPTC brigades and SEPRRN. This practice has since been stopped by AID directive. The value of the leasing to these agencies amounted to \$38,620 of the total \$92,853 for the period, some 41%. This raises the question of whether the Leasing Service

will do as well as they have, now that they can no longer lease to those two agencies.

C. The Thomazeau Contractor was interviewed for his views on SLELC and his reason for not leasing from that organization. He apparently had his own equipment and did not need to lease. In any event, in his view, the terms of leasing agreements from SLELC are not conducive to leasing. Some are perceived as economically and operationally unsound, others are annoyances. For example, the SLELC standard work week is 40 hours, compared to the standard of 48 for contractors. Working SLELC equipment beyond 40 hours is therefore at the rate of 1-1/2 to 2 times standard. This applies to both operator and equipment. Substantial payment must be made in advance of leasing which contractors find objectionable. An annoyance is the requirement that the equipment operator must be provided with food, lodging and entertainment. It is therefore likely that leasing will occur only as a last resort when no other equipment can be found.

D. SLELC does appear to be capable of providing private contractors with needed equipment on a rental basis. This is substantiated by the record to date of its leasing experience. Whether or not it can become self-supporting may well depend on other factors, not the least of which is the progress of the program for contracting out feeder road construction.

E. SLELC's leasing activities could probably be strengthened with the addition of a few trucks for lease. Contractors apparently are interested in working units which usually involve hauling. Otherwise, we believe the Pool

does not require strengthening beyond the continuing ability to service and maintain its equipment and to provide trained operators.

F. It is noteworthy that aggressive leadership has been a strong contributing factor in SLELC's progress to date. Even though the originally-intended lessors have not materialized (that is, TPTC Feeder Road Contractors), other clients were solicited by management. The necessary approvals were obtained to modify the project's originally-stated purpose, thus permitting a functioning organization. A training program has been instituted. With the experience being gained, SLELC is not only providing a socially useful service, but is becoming better qualified to perform the service it was originally designed for.

Labor-Intensive Pilot Project

FINDINGS:

1. We concur with the finding of the October, 1978, AID-IBRD Team that the Consultant Draft Report does not contain a satisfactory cost comparison for labor vs. machine-intensive technologies (but see our Commentary "B").

2. The following cost information is now available:

a. Projected cost of labor-intensive construction was \$9,500 per km.

b. Actual cost of ongoing labor-intensive construction is about \$14,900 per km.

c. Actual cost for machine-based construction based on work completed is almost \$18,300 per km and \$17,700 per km for North and South Brigades, respectively.

3. The "Pilot Project" had several other weaknesses. Such a tryout usually comes at the beginning, but road work at La Vallee had started long before as a self-help project, as the following chronology shows:

October, 1976 - New Jacmel-P-au-P road inaugurated;

Oct/Nov, 1976 - La Vallee people begin to repair the route from Ridore to Carrefour St.-Antoine, using their own funds;

Early 1977 - The Canadian Ambassador inspects the work done on the road and donates \$1,000 for the purchase of tools;

Early 1977 - The first buses begin to come from Jacmel to take passengers and cargo to P-au-P and Jacmel. The large trucks from Bainet begin to use the Blockauss-Carrefour-St. Antoine link to travel to and from P-au-P instead of the Blockauss-Trouin-Fauche link;

Jan-June, 1977 - Foster Parent Plan donates sacks of cement to help with the reconstruction of the road. FPP works with CODEVA ^{1/} which had recently been established at La Vallee as a self-help organization;

Jan-Sept, 1978 - TAMS-TPTC-AID conduct pilot project to repair the route from Carrefour-St. Antoine to Blockauss. (The Ridore-Blockauss link is begun in May, 1978.)

Oct, 1978 - Mar, 1979 - TPTC and SEPRRN work on the road with people from outside of the community;

Mar, 1979 - TPTC returns tools belonging to CODEVA which it has been using since Oct, 1978 without permission;

Mar, 1979 - A popular TPTC engineer from the area is replaced by an engineer from Arcahaie, contrary to community preference.

4. Neither the Consultant Team Leader nor any of his staff had reportedly had any prior experience with labor-intensive methods.

5. Labor-intensive approaches tend to run counter to the training and professional self-image of professional engineers.

6. Labor-intensive methods will tend to be perceived as patronizing, demeaning and (therefore) lacking in prestige by host country government.

COMMENTARY:

A. Whether or not to push ahead with labor-intensive methods requires a policy decision. Unfortunately, such policy formulation cannot look to the Feeder Road Project for any definitive contributions of information.

B. The question of differential cost per km for labor vs. machine-based roads is, in our view, largely a false question. It implies "equivalent

^{1/} "Coude à coude pour le développement de la Vallée" (Elbow to elbow for the development of La Vallee).

segments of road" (that is, equally difficult ones). See our Recommendation 7.

C. The USAID/IBRD Report of October, 1978 (bottom of p. 1) states:

On Wednesday, Oct. 25 we visited the Pilot Project, inspected the reconstruction work being carried out by about 200 laborers at Blockauss, and walked the entire 6.2 kms from Martino to Baint.

Their report contains some pretty negative findings based on this visit. Since portions of the "Pilot Project" road looked adequate to us (in April, 1979), it appeared to Group Seven that there was perhaps an anomaly in the scene, and we looked into it.

It appears as if the work which had been done on a 4 km section of the Martino-Baint road was maintenance work only and reportedly part of a maintenance-labor intensive effort.

The work had been done in May-June-July of 1978 with 117 workers and consisted of subbase preparation and shaping with expenditure of only \$8,023.40 over the 4 km length. Work stopped in July because anticipated funding from SEPRRN did not materialize. No work was performed from July to October 25. Group Seven can only pose the question: *Is it possible that the team misunderstood that they were looking at incomplete maintenance and not at completed construction?*

D. By way of summary, factors that favor labor-intensive methods (over machine-intensive ones) are that they:

1. provide more immediate financial benefits to local people;
2. minimize foreign procurement needs;
3. promote community social cohesiveness;
4. fewer problems (e.g., equipment maintenance and trained operators);
5. engender greater local interest in road maintenance;
6. may be cheaper per km;
7. generate more local pride; and
8. are consistent with the New Directions of the 1973 Foreign Assistance Act.

E. Similarly, factors favoring machine-intensive methods (over labor-intensive ones) are:

1. construction progresses faster once all inputs are available;
2. It is the only practical option in many situations made difficult by virtue of the terrain or availability of construction materials;
3. Require fewer personnel management skills;
4. Greater information and experience pool available;
5. Better morale of engineering staff for execution of work. (they favor "modern methods");
6. Not all areas have sufficient labor readily available;
7. Can incorporate higher construction standards; and
8. More likely to get host government support.

F. The professional attitude of most engineers, together with the attraction to modern mechanization typically holds for host governments; both are reinforced by a low level of indigenous manpower discipline and by the inexperience of the present advisors in this area. These factors^{1/} combine to virtually guarantee the failure of labor-intensive programs, under current circumstances. But see our Recommendation 7.

^{1/} The Study of Labor and Capital Substitution in Civil Engineering Construction (World Bank, Sept 78) which became available too late to receive its due weight in our study refers to an "engineering mentality" in discussing these problems. (p. 80)

TPTC Institutional Capability

Does TPTC have the institutional capability to carry out the program?

FINDINGS:

1. In order to carry out such a program successfully, TPTC must have a well-motivated management/administrative team and a capable technical staff. While the TPTC project staff listed in the various monthly reports seems adequate in number, they must be supplemented by certain technical and managerial services necessary to design the roads and supervise the construction of the contractor-built roads. More specifically, these services include:

Survey crews to furnish information for design and for construction. Source: Construction Service

Engineers, inspection and quantity control for contractor-built roads. Source: Construction Service

Materials technicians for locating and testing soils and checking compaction. Source: National Laboratory, hired by Project

2. In general, the technical qualifications of those involved are adequate. Top management has the required practical experience. Engineers and draftsmen can produce the plans and review the engineer-consultant's work for adequacy. The field engineers in charge of the brigades have human resources which, if properly equipped and managed, would be capable of constructing quality roads at the rate envisioned.

3. Now that some experience has been obtained, it appears that project personnel are capable of initiating the preparation of design plans by consultants

and reviewing them so as to produce completed bidding packages for contractors. The success of this phase of the program will continue to depend on the timely completion of the plans by the engineer-consultants.

4. The preparation of plans for use by the brigades is also within the capability of the project personnel, if they are provided with the necessary field data. These plans need only be completed a few kilometers in advance of actual construction.

5. Survey units are provided for the brigades and the contract-built road, but their full-time use for actual construction places severe limitations on their ability to provide surveys for the design of plans of ensuing road sections.

6. TPTC Construction Service may not have sufficient engineers, inspectors or quantity surveyors available to accommodate additional contractor-built roads. Transportation and logistical support for such additional staffing is also lacking.

7. The project is currently hiring and providing transportation for soils technicians to assist in locating and testing materials for base and road surfacing.

COMMENTARY:

A. For a variety of reasons difficult to pinpoint the day-to-day operations and the progress of the overall program leave much to be desired.

Principal among the reasons appears to be a lack of managerial drive, will, and discipline.^{1/} There seems to be insufficient appreciation for the importance of "keeping things moving," and a lack of positive direction, indeed in at least one case, the lack of any direction at all. There appears to be little initiative or follow-through. As an example, the failure to process a requisition for a repair part for a key piece of construction equipment effectively cripples a construction brigade. Or, at a higher level, a staff-meeting decision in December, 1978 relative to acquiring forms as quickly as practical for making concrete pipes, was still pending without action in late March, 1979 in spite of weekly reminders of the urgency.

B. Personnel of the Construction Service have been seconded to the Project for the supervision of contractor work. Some problems have developed concerning their loyalties and acceptance of instructions from project supervisors. Also, if past history is an indication, difficulties can be expected with assigning personnel away from the Port-au-Prince area.

C. In short, while the individual technical skills seem adequate, the organizational, managerial motivational factors are weak. This permeates the program and restricts its effectiveness. The evidence is not now available to indicate that TPTC would plan, organize and execute the Feeder Road Program without continuing advisor presence. One gets the impression that the knowledge and the resources are there, but that the institutional priorities do not favor the Feeder Roads Project, particularly if labor intensive.

^{1/} With some notable individual exceptions.

Principal Reasons for Delays

FINDINGS:

1. AID/Washington authorized the Feeder Road Loan on the date planned for that action, March 31, 1976. The bilateral Grant Agreement obligating funds for three short-term consultants, to undertake certain preparatory work for the project, was signed April 27, also on schedule. The Loan Agreement between the countries which establishes a starting date for the 5-year project was concluded on June 29, reasonably soon after the May target.^{1/}

2. There is only one subsequent instance in which the PP's schedule of "major events" is maintained or approximated. That case is the short-term preparatory team which was programmed for quick mobilization in April, 1976 upon signature of the Grant Agreement and which arrived for its 3-month task 2 months late in June, 1976.

3. That time loss, in itself (and in comparison with later, greater delays), would not seem important. But here, and throughout the project, delays accumulated in circular cause-effect chains. The team was expected to initiate three urgent lines of project action: procurement, both for the Equipment Leasing Service and for brigade construction; draft legislation and organizing work for the ELS; and design and preparation for a model construction contract. On these three tracks, events went something like this:

a. The procurement action was to have reached the IFB stage during

^{1/} See Consultant-generated Principal Events listing in the Appendix

the team's visit. In fact, the IFB was not ready until 9 months after the team's departure. Problems with the procurement process outside Haiti then intervened, adding another 6 months to the transaction, and the equipment finally arrived 18 months late on the 23rd, not the 5th month of the project.

b. Legal, organizational and staffing preparations for the ELS were completed 10 months late, delayed for independent reasons. Lack of equipment contributed little to this particular delay; but the Service had still to mark time, wasting resources, for an additional 2 months (after completing preparatory activities) until equipment did arrive.

c. The short-term consultant concerned with the contracting function had done his work. But the "straight line" specifications method used, which had been counted on for prompt and economic project execution, did not attract bids, and revisions, in a protracted sequence of surveys, new designs, bidding and rebidding, consumed more than 2 years. (Note: Sequences of delay are one thing, the cases themselves, taken separately, another. The important ones are listed below together with what appear to have been the principal reasons. Throughout, the term delay means only time in excess of the planned duration of the given task, not the total time to perform it.)

4. First year equipment delivery: 16 months late.

a. Two months of the 16 are accounted for by the late arrival of the short-term consultant (Frederic R. Harris, Inc.) who was to prepare the specifications. That Consultant left Haiti in early September, 1976, having prepared a set of specs which, however, were unacceptable under AID Procurement regulations for the reason that they were of a type tending to require proprietary procurement or, at least, to limit the number of suppliers able to bid.

b. The critical period, insofar as project management in Haiti is concerned, is the 8 following months, that is, between September, 1976 (the target date, adjusted for the original delay) and May, 1977 when the IFB was finally ready for Washington. What happened?

We could not ascertain why the short-term consultant was allowed to proceed unchecked for 3 full months along a dead-end path, working up specifications that apparently more closely resembled the World Bank than the AID-type procurement. In any case, AID/W ruled that the specifications would have to be revised, a decision noted in a memorandum of December 13, 1976 which also indicated that the short-term consultant would make the changes in the U.S. As far as we have been able to determine, there is a gap in the record between December and March 11, 1977 when another interim draft IFB was sent to TPTC. A period follows in which revisions were made, both in Washington and in Haiti, the revisions are revised and re-revised, IFB publications are made, withdrawn, renewed, and so forth.

c. In this complex history, we did not seek a single locus of responsibility, nor did we find any single theme in the delays other than that the AID procurement process may have become so loaded with obstacles as to exceed the capacity of either Washington or the Mission to expedite it.

After May, 1977, it is relatively clear sailing. Thirteen additional months were required to conclude contracts, establish letters of credit and deliver, adding only 6 months to the delay.

5. Second year equipment. Delivery is expected^{1/} in August, 1979, at the earliest, in the 38th month of the project, 22 months behind schedule.

^{1/} As of this writing.

a. In this procurement, preparation of the second IFB accounts for 14 months of delay, of which we focus on a critical 6, between June, 1977, the target date, and December, 1977 when a draft was cabled to Washington.

b. Now, the Consulting Agreement signing had been delayed (see below); the short-term equipment specialist had departed; and the Consultant equipment man arrived in July, 1977. At that point, the Consultant seems to have put higher priority on repairing TPTC's existing equipment, assigning the equipment specialist to that, than to preparing the IFB which he began only in October, 1977. The work was during the next 2 months. We speculate that even though the second procurement was small (compared with the first), a different priority would have been set had it been known at the time that an approximate 22 month additional period would intervene before delivery of the equipment.

c. Contributing to that delay was TPTC's desire to standardize some of the equipment, requiring proprietary procurement. We did not learn whether this intention had surfaced during the preparation of the IFB and if not, why not. Nor can we comment authoritatively on why the history and lessons of the first difficult round were not used more effectively in decisions on the second. We do know, however, that with or without awareness of probable difficulties, the Consultant went forth straight into the vexing proprietary procurement (waiver) issue, which paralyzed the exercise until October, 1978 (when the waiver was granted). Then it was only a matter of 11 weeks to publish invitations (December, 1978). An estimated 8 additional months will be required before delivery in August, 1979.

Other than repeating our comment regarding impediments in AID procurement, we can only speculate whether greater continuity in project

management^{1/} and the technical advisors, might have prevented some of this remarkable delay.

6. Conclusion of the Consultant Agreement

a. The GOH Consulting Engineer Technical Assistance Agreement was to have been executed in September, 1976, but was not signed until March, 1977, a delay of 6 months. By early November, 1976, five proposals^{2/} had been received and a TPTC Review Committee was scheduled to review them during November.

b. The USAID Project Manager met with this committee to review their work in December and he suggested that certain selection criteria needed emphasis. They were: experience of the firm and experience of the individuals proposed by the firm in furnishing "technical assistance," as opposed to the executing role; and the firm's understanding of the organizational development requirements of the project.

c. Discussions of some differences in viewpoint caused some delays but a selection was finally made and the contract awarded in March, 1977.

7. GOH Project Funding

a. Several complaints were heard about delayed local currency payments for salaries in the field, local procurement, support of the project's Port-au-Prince office, etc., as well as light brigade funding. While snags may have

^{1/} Two changes in USAID Project management occurred during the "critical" 6-month period.

^{2/} Despite repeated attempts, Group Seven has not been able to obtain a copy of Consultant's Proposal.

occurred in the administrative processing of vouchers and in the actual delivery of payments, there were other financial problems at earlier points in the process.

Scheduled GOH deposits for the project for the first three quarters of FY 78-79 were reportedly made up to 8 weeks late. Likewise, the GOH's nonproject support of the main project office has been delayed on occasion and, until April, 1979, was then paid in from accounts designated as GOH project participation. Such apparent diversion of funds, having the effect of reducing the GOH's net project contribution, may be a thing of the past if a firm new agreement for a regular monthly \$12,000 deposit for office costs holds up. There is no such agreement for the project deposits, however, and they reportedly remain in arrears approximately to the extent of the diversion (\$254,000).

b. The effect of slow funding on actual operations may not have been great--excepting, perhaps, where morale was damaged by delayed salary payments or an individual's work program was disrupted. (Delays in funding the light brigade, impeding that operation are a separate matter in which the cause is a still - pending policy issue.) But there is a reason for concern over what caused delays in deposits for (other) activities. More than red tape was involved, we believe. In fact, as we understand it, there is an underlying shortage of budget revenues. Aggravating the problem is the GOH's anticipation of PL480-III resources. Counting on them for certain development purposes, the GOH seems to have cut back on regular budget funding for those same activities (including the project) in favor of other unfunded sections of the budget. Existing PL480 local currency deposits have already been used for sections of

the project that were to have been funded from the regular budget. This diversion or saving of regular budget funds and its replacement by PL480 money is said to have taken place for all of GOH project funding.

8. Releases of U.S. Local Currency Funds

For its part, the U.S. has contributed somewhat to operational delays. A current pending list involving just over \$25,000, for example, includes four cases ranging from 1-1/2 to 4 months of delay. Although these snags appear simply procedural, they play their role in affecting brigade and contract construction progress.

9. Project Counterparts

The TPTC counterparts for the Consultant Budget/Accounting Advisor were assigned to their positions some 3 months after his arrival. Most of those hired for the project (engineer, equipment specialist, storekeeper, agronomist and others), and some of those transferred to it by TPTC (including an engineer) arrived somewhat later than their advisors. Although these delays were not excessive, they do present the anomaly of advisors in place without anyone to advise.

10. Private Designs and Contracting

The changeover in approach to private contractors (from the original unquantified straight line method to detailed specifications) took up some 40% of the project's life span (25 months). One might assume that obvious, egregious and perhaps inexcusable mistakes were made in developing the revised

method. Apparently not, however. With analysis of the process step by step (see above, under "Road Reconstruction and Improvement"), an unreasonable accumulation of perfectly reasonable delays is revealed. The explanation, if any, may lie in a failure of communication between project technicians and potential contractors, that is, in not being constantly aware of contractors' needs and attitudes and not acting to reassure them.

11. Brigade Assignment

Ruling the Cavailon-Barraderes road eligible for inclusion in the Feeder Road Project, TPTC assigned the South Brigade to work on that road, after completing the Houck-Port Salut section, rather than deploy the Brigade to sections originally selected for the Project. However, the pace of this operation seems especially slow, with 70% of it remaining to be done. Hence, the Brigade will not be available for work elsewhere for a long time. This method of brigade assignment also raises a question in our mind about the stability and appropriateness of the criteria used for selecting roads into the Project.^{1/}

12. The Pilot Project

The labor intensive project got under way in November rather than February, 1977. Funds for it were then "borrowed" from brigade accounts, AID funds for the Pilot Project having been frozen pending fulfillment of the Condition Precedent requiring the COH to provide a time-phased implementation plan for this component of the project.

^{1/} A topic, however, not included in our Scope of Work.

13. Equipment Down-Time

Equipment down-time at project sites has been substantial. Along with delayed offshore procurement and the slow turnaround in revising the approach to contract specifications, this must be counted as an important cause of delay in the overall performance of the project.

14. Various

We learned of a number of other administrative and operational delays that were not crucial in their effect, but which indicate a general sluggishness in project implementation. Examples: slow processing of field requisitions for materials; 6 months to mount a field lubrication unit on a truck; 3 months to take action to obtain a culvert mold; 2 months (and still pending) to rent a tractor for the light brigade.

15. Evaluation

Certain decisions necessary to reprogramming the project have been put off until completion of this mid-term evaluation. That being the case, the time lost through postponement of the evaluation from Fall, 1978, is unfortunate; and it can only be made up if those concerned now focus urgently on the problems.

COMMENTARY:

A. As noted; delays have caused further delays. In addition, delays have disconnected interdependent parts of the project—equipment from labor, advisory services from operations, etc.. Construction brigades started work

with partial equipment, spending for brigades began before arrival of advisors, and the brigades are at different levels of mechanization. In-country tours of several advisors (leasing service, heavy equipment) expired before their operations began. Morale and prestige have suffered. Managers are worried about how to coordinate the different functions and have no idea at present what schedules and goals they are shooting for.

B. There is danger in overstatement. Not all delay is per se damaging. Quantity of output may be a function of delay, but that is not necessarily true of quality (especially in a dual project with human and institutional objectives as well as physical). Nevertheless, we summarize overall effects--physical, financial and time.

C. The project is past its mid-point. Dated from the Loan Agreement (June 29, 1976), it is 33 months old or 55 percent complete (33/60). In this time, some 45 percent of the GOH's local currency contributions, 70 percent of grant funds and 48 percent of the Loan (say 50 percent of all funds) have been expended. Meanwhile, 9.2 percent of the roads have been reconstructed (87/940). The lack of symmetry between "funds expended" and "roads reconstructed" may be mitigated to some extent by certain capital start-up costs involved. The "time - roads" difference too is due to a small extent to the fact that production per month is not conceived of linearly, but should be incremental as the project progresses. These factors, however, cannot explain away the preponderant imbalance.

D. While the productivity of the brigades in kilometers per month was expected to be far lower during the first half of the operation than in the second, obviously, the rate of productivity increase is such that output per month is less than one-third of what it should be at this stage of the program. Note, however, that it would be entirely fair to set forward at least two "base" dates--for the start of brigade operations and for the arrival of TAMS--and this would somewhat improve the picture drawn above by measuring performance during actual time at work. (We are obliged, of course, to use the official time-frame representing the lender's viewpoint, that is, the loan period, in assessing project progress overall.)

E. Between the Stools: There is a clue in the prompt departure of the short-term consultants and the late arrival of the long-term team. The project was not designed for direct USAID management; and yet it was so managed for nearly 14 months, including the preloan grant period. The project could not be turned over to the borrower's unmonitored control. Nor was the USAID in a position to cover the technical gap after the short-term consultants left. The problem seems to go back to a design fault (one that is aggravated but not created by delays), but it is a fault, in scheduling, that might well have been challenged and corrected early on. In any case, during the interim, no one was responsible solely for the project; and no one could bring forward lessons learned at the start to problems faced at mid-term.

F. The Problem of the Perceived Self-Interest of Outsiders: In the project's relations and dealings with Haitian private designers and contractors

overconfidence or unsupported assumptions (that they would bid on the contract documents and eagerly become a partner of the project plan) hurt. Was there any reason for such confidence?

We are not saying, simplistically, and with hindsight, that managers should have been right, not wrong. The sector was unknown territory. And use of the simplified documents as a trial was fully warranted. But the assumption of success precluded the assumption of failure, and there was no preparation for that contingency, no readiness to push modifications or alternatives the moment the crisis became apparent.

We are not persuaded by the failure of the experiment that a version of the method (with all its great advantage) has no future. On the contrary, its lessons can be put to work in modifying the format; and private attitudes and reactions to it can be altered (perhaps in group sessions). But, these attitudes cannot again be assumed, or ignored.

G. Unmanageable Offshore Transactions (procurement of goods & services):

These procedures, which have so skewed the time-frame of the project, pose a dilemma. Following the procedures, a project responds primarily to legal and political exigencies at home rather than to practical requirements, realities and objectives in the field. Since USAID staff, as do many others, choose to follow U.S. Government regulations, there is no ready solution.

H. Another fact in these transactions is that the parties must play somewhat artificial roles:

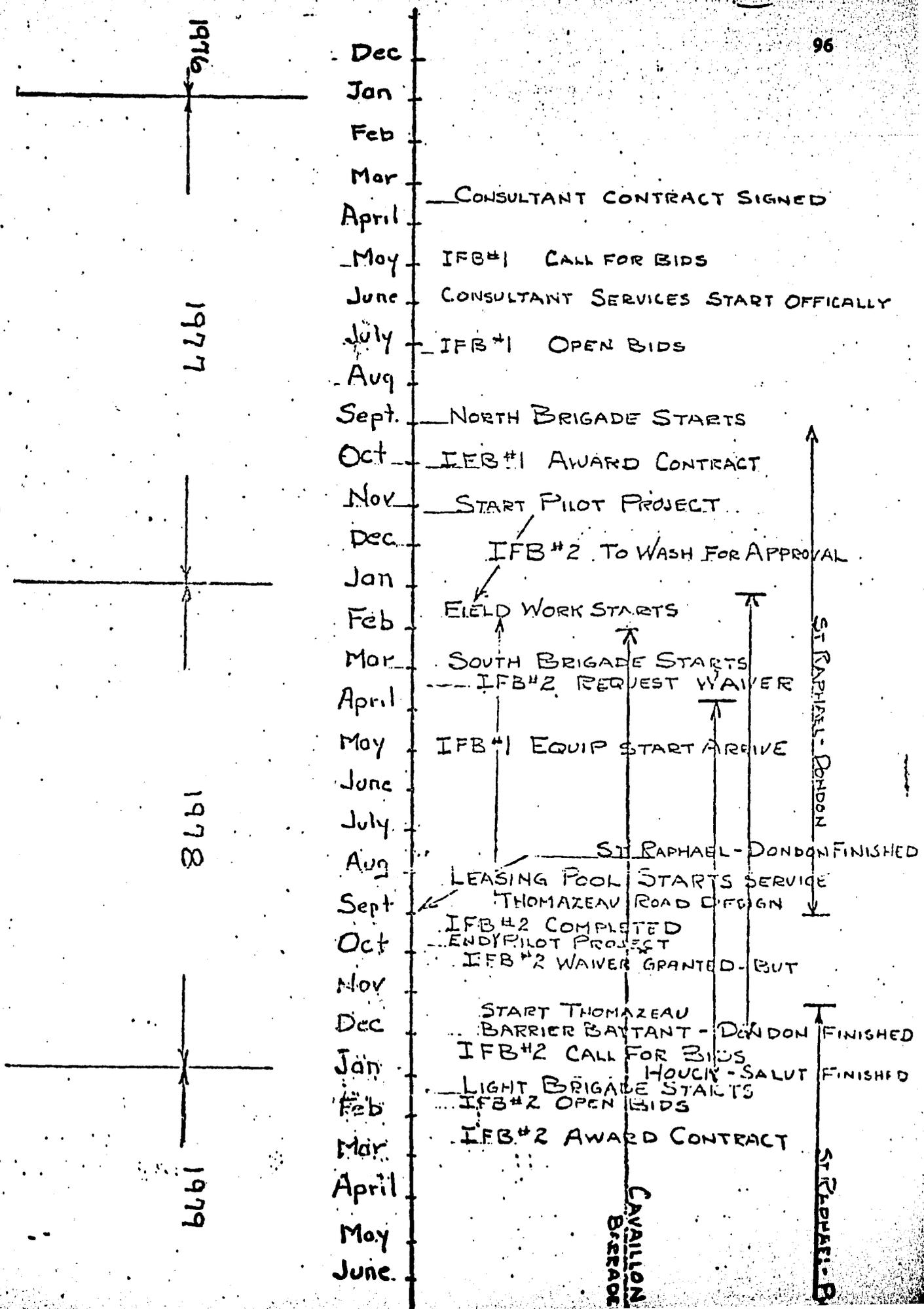
a. The GOH which is designated as the legal proprietor of the project and the executor of all its actions--but which is unskilled in the ways, for

example, of justifying waiver requests;

b. The consultants whose function is ostensibly advisory and instructional only—but who nevertheless suffer if the project is poorly executed; and

c. The USAID which would like to steer clear of implementing details, but which is drawn into them by default in a more or less continuous series of crises, large and petty. A net uncertainty over de facto responsibilities is the result.

CHRONOLOGY
FEEDER ROAD PROJECT



INTERMEDIATE OBJECTIVES (PURPOSE)

Group Seven was able to conduct two short field trips to collect data and gather information on early indicators of socio-economic effects of agricultural feeder roads to date. Two reconstructed roads were chosen because one was machine-based, the other the labor-intensive pilot project.

The machine-based construction is located in Northern Haiti and the field trip took us to Barriere-Battant-Carrefour Menard-Dondon-St. Raphael and finally Pignon.

The labor intensive road is located in the Vallee of Jacmel and the field trip took our investigation to Jacmel-La Vallee-Bainet-Trouin-Fauche-Blockauss-Ternier.

Those two sites were chosen, to yield a preliminary and tentative composite picture across the two different technologies.

FINDINGS:

Reduced Transport Costs

Interviews conducted with passengers, city officials, bus and truck drivers, expert informants concur to indicate substantial reduction in bus and/or truck fare as shown below:

<u>Bus Fares in Gourdes</u>	Before*	After*
Pignon-Cap Haitien	7.50 - 8.50	3.50 - 4.50
St. Raphael-Cap Haitien	6.50 - 7.50-8.00	2.50 - 3.50
Dondon-Cap Haitien	2.50 - 3.50	2.00
Barriere Battant-Dondon	2.00 - 3.00	1.50 - 2.00
Bainet-Port au Prince	10.00	7.00

* The before-after comparison is not entirely clear-cut, however. Unfortunately, "before" also refers to rainy season, while "after" is dry season. However, before reconstruction, the roads were not operational even when dry.

COMMENTARY:

The factors explaining reduction in transport cost are manifold. Reduction in fuel consumption is a major element. Truck drivers at Pignon and St. Raphael indicate clearly that they consume less fuel now than before. In Northern Haiti, to reach Pignon from Port-au-Prince through Cap-Haitien-Dondon-St. Raphael, which is a considerable detour, truck drivers used to consume up to 35 gallons of fuel. Now, due to the improvement of the road, they travel through the Central Plateau, i.e. Hinche-Lascahobas, and consume approximately half a tank of fuel (17 to 18 gallons). In addition, travel time is similarly reduced. Fuel saving is also indicated by the truck and bus drivers of the Vallee of Jacmel.

Increased Transport Services

There are now more frequent trips in Northern Haiti from St. Raphael, Pignon-Dondon to Cap-Haitien, Hinche-Lascahobas, Port-au-Prince and other places now linked by feeder roads. People from St. Raphael and Pignon can make now up to two trips a day to Cap-Haitien any time. It is also easier for people at Pignon to go to St. Raphael or Dondon.

These observations also seem valid for the Vallee of Jacmel area. People from Jacmel, Trouin, Fauche, Bainet, Blockauss make more frequent trips to Port-au-Prince and in less time. During the rainy season, it was not uncommon for either truck or bus on the Bainet link to have to stop for 2 or 3 days after a rainstorm to wait for the road to dry. Nor was it uncommon for people from Pignon to have to stay overnight at St. Raphael en route to or from Cap-Haitien. Sometimes, they even had to make overnight stops at Dondon and St. Raphael en route to Pignon.

With the road operational year round, there is less risk involved and bus, truck drivers and passengers are taking advantage of the opportunity.

Increased Transport of Perishable Goods

People interviewed in both Northern Haiti and the Vallee of Jacmel area indicated an increase in the volume of trade in general. As for the Vallee of Jacmel which produces grapefruit and vegetables, such as cabbages for which the area is particularly noted, it may be hypothesized that in the long run, farmers will increase that production. In the past, grapefruits were often left to rot on the ground before trucks came to La Vallee. Our informants reported increased production of grapefruit and vegetables, but the latter is traditionally for local consumption. Now, given the increase in traffic, the presence of more middlemen and also easy access to other market centers, including Port-au-Prince, it is conceivable that farmers might respond favorably to such incentives and increase both their productivity and production. However, due to lack of baseline data, and the rather superficial nature of our current information on production, certainly no definitive conclusions can be reached.

As for the Northern segment, St. Raphael should be the first place where the presence of the road might be expected to increase the production and transport of perishable goods. St. Raphael, is traditionally considered as the granary of Northern Haiti, the first market center in the North and the third largest market center in the Republic. Among a variety of other agricultural commodities, they produce vegetables such as tomatoes, onions, and cabbages for local consumption only. Now as is expected by the local elite and members of the Federation des Conseils Communautaires with the road operational year round, St. Raphael will be able to regain its traditional market functions.

Facilitated Delivery of Agricultural Inputs

The delivery of agricultural inputs is generally quite limited in Haiti. Even already accessible places, located near major towns and cities throughout the Republic, do not have access to agricultural inputs other than those locally supplied. First of all, agricultural inputs must be made available, and second, proper channels for their distribution and rational allocation created. At the local level, the Councils for Community Action and the Federation of Councils for Community Action are potential channels to be used to reach such objectives. Then the feeder road will play a significant role. For the time being, the question is one of availability rather than delivery.

Increased Accessibility to Social-Medical Services

In Northern Haiti, particularly at St. Raphael, city officials indicated an increase in the use of medical and social services (e.g., school enrollment) to the point that expansion of those services is under consideration. Though more people from Pignon, Dondon and surrounding villages now use the more readily available facilities at St. Raphael, the road is only one factor which may be secondary to the process of rapid internal migration. The effects felt by St. Raphael are also felt in Cap-Haitien. However, peasant farmers indicated that now it is easier to send their children to school at St. Raphael and supply them with a steady flow of groceries. It is also easier for them to use medical services at St. Raphael or Cap-Haitien, if necessary.

For people in Jacmel and La Vallee, uppermost in their mind is the possibility that the link to the new Jacmel-Port au Prince road offers for transporting of sick people to the hospitals at Port-au-Prince and Jacmel. Before the road became operational it was extremely difficult.^{1/}

^{1/} A community leader at Ternier described the agony of transporting her very sick son by donkey down the steep slope to Policien, the nearest point on the old Jacmel-Port au Prince road.

ULTIMATE OBJECTIVES (GOAL)

FINDINGS:

1. Increased Small Farmer Income

a. Councils for Community Action and their Federation indicate that farmers will respond positively to having easier access to more distant markets.

b. Beyond that speculation, insufficient time has elapsed to determine the effects of agricultural feeder roads upon the income of small farmers.

2. Increased Rural Employment

a. The La Vallee road, involving labor intensive methods, resulted in more immediate employment than the Northern segments which were machine built.

b. Rural employment can be expected to increase more generally if farmers, responding favorably to the many incentives provided by the roads, increase both productivity and production.

c. Being an ultimate objective, again insufficient time has elapsed to determine any impact. In addition, some rigorous baseline data, now lacking, would be needed.

BENEFICIARIES**Project Paper Expectations:**

In the Project Paper's Social Analysis, the project's beneficiaries are expected to be:

A. Small farmers: enjoying increased productivity, employment and income, with decreased underemployment and an improved standard of living overall, taking social services into account. Benefit would be conveyed by access to markets, inputs, credit, services and retail goods, and by nonagricultural earning opportunities.

B. Local services and enterprises: in subcontracted road work and in transport, repair and other services where benefit would come from reduced costs and increased demand.

C. Community councils: whose role and status would be expanded and strengthened and which would receive increased revenue deriving from increased economic activity.

D. Women: in an expanded and more prosperous marketing function.

E. Populations of certain areas: who might receive wages and salaries directly from project work.

Not mentioned is an obvious beneficiary group that to date has received the greatest benefit, the most directly, from the project, that is:

F. Employees of brigade and other road operations: of the ELS, and of the project's central office.

In the PP's Economic Analysis, a minimum of 10% internal rate of return from project investment was expected with at least a 1.91 benefit/cost ratio. Hence, there would be "substantial" economic and social benefit of several kinds.

FINDINGS:

Too few of the project's outputs and too little of any of them have been realized to reveal much about benefits the project may ultimately produce. Even partial comparison of the negligible benefits to date with expectations is premature. However--and for what it is worth--we present some quantified data and some observed results, both of considerable interest.

1. Direct Payments Generated by Project Operations through March, 1979. (See above "E" and "F".)

a. South: Cavailon-Barraderes--up to 170 workers and supervisors, at any give time, were paid	\$ 137,435
b. South: Port Salut-Houck, the same 170, paid	92,850
c. North: up to 230 people paid	<u>196,385</u>
Subtotal, brigades	\$ 426,670
d. By contract: some 25 people (all costs \$17,385) paid about	\$ 9,000
e. Labor Intensive Pilot: 815 people paid	140,700
f. Light brigade: 385 people paid	<u>54,875</u>
Subtotal, irregulars	\$ 204,575
g. The ELS: about 30 people (overhead \$270,000) paid, about	150,000
h. The project's central office: 35 people, wages and salaries	<u>161,000</u>
Subtotal, institutions	<u>\$ 311,000</u>
TOTAL: some 1700 people receiving (not quite \$1m)	\$ 942,245 <u>1/</u>

1/ We do not believe calculating the authentic mean would be an appropriate

2. Other Categories

Inquiring into benefits to farmers (see above "A"), services and enterprises (see above "B"), community councils (see above "C"), and women (see above "D"), we have observed events and interviewed people with different interests, in La Vallee, site of the Labor Intensive Pilot Project, in the South, and in the North at Barrieres-Battant and along the Dondon-St. Raphael-Pignon route, worked by the North Brigade.

These micro findings are encouraging, on the whole. Bus traffic increased, rates may be lower, transit time decreased. Increased movement of both goods and services are noted. Increases, possibly due to the road openings, in agricultural production (livestock, perishables) were reported. Grapefruit that might have rotted in the past was marketed. More pigs went to market than last year. Greater competition among market intermediaries, due to access to farms that the roads give them, has increased the prices they are paying farmers, reportedly. Increased access to and by social and other public services was another result.

Against this, some tradeoffs and offsets occurred. Traffic increased on new routes somewhat at the expense of traffic on older routes. The community council in La Vallee was split and embittered by TPTC's alleged mishandling of the L.I. project--and, later, in its abandoning of local labor in the brigade work that completed the section.

These and other observations are discussed under Intermediate and Ultimate Objectives sections.

COMMENTARY:

Where the roads were built, initial effects were easily discernible.

Additional roads are likely to bring similar results.

But these are mainly qualitative rather than quantitative observations.

We remain skeptical about the quantified consequences of the project, especially in benefits compared to investment. The range of 10% for internal rate of return and 1.9 in benefit/cost seems improbable. For one thing, cost (per km) has run more than double the PP estimate for brigade work and about 30% above for contracted work. The cost situation may improve with greater brigade efficiency; but the average cost for 5 years is not likely to be brought back down nearly to the hopeful estimate that underlies the economic cost-benefit analysis.

UNPLANNED EFFECTS

Has the project had any unplanned effects?

FINDINGS:

1. Only three sections of road have been completed to date in the project, totalling 24 km in the North and 18 km in the South. The oldest of these has been completed 7 months; the more recent, only 3 months at the time of this evaluation. Some segments of these or other roads still under construction have been available to traffic for approximately 1 year.

2. Time has not yet been long enough to make any definitive determinations regarding effects, planned or unplanned, but some tentative indications have been detected based on local interviews and observation.

a. Some local residents foresee a loss of business activities on unimproved adjacent roads which formerly served as alternates to the (now) improved roads. If true, this could benefit one area at the expense of another.

b. Because of better access, increased competition for local produce seems to be occurring among middlemen. Similarly with transportation.

c. Improved roads have sparked an interest in local "penetration" roads or trails to permit transport to the improved roads.

d. TPTC hired the Consultant Administrative Advisor when his term was completed to implement that which he had helped plan as an advisor.

e. Dissatisfaction has been expressed by some local officials and the Federation of Councils for Community Action because of the low rate of

employment of local residents by the construction brigades.

f. This dissatisfaction, clearly expressed in their anger and frustration, may have deeply affected the morale of the members of Councils for Community Action and reduced considerably their participation in related development activities.

g. This has resulted in expressions to the effect that the local Councils for Community Action which previously contributed to road improvement will no longer consider themselves involved.

h. City officials had, in some instances, threatened to stop the road construction if the construction company did not employ people from a list submitted by the mayor of the city to the road engineer.

i. The construction brigade has reportedly had a negative attitude towards city officials and local residents in some areas. They simply ignored them. In one instance, the construction brigade has apparently refused to compensate a peasant farmer for damages caused to his property.

j. Some of the local communities are quite concerned about increased vehicle speed through their areas to the point that they plan to take proper action to enforce traffic violations with local authorities.

COMMENTARY:

Any more complete/definitive/rigorous analysis of the question will require a greater research effort.

RECOMMENDATIONS/LESSONS LEARNED

With regard to the Feeder Road Project as an organic whole, Group Seven suggests the following:

1. That objectives be redefined, the physical vs. institutional dichotomy clarified, realistic targets identified and scheduled, new costs determined.
2. Launch such a new project phase with an all-day conference in which the new plan can be discussed fully and agreed to by TPTC, USAID, and the Consultant. The Conference should reaffirm mutuality of interest and good faith.
3. That the liquidation of the Project as a separate entity begin early in the new phase, by moving closer to TPTC physically, administratively or just on a communication basis. Consultants should visit more and fraternize more, so as to build mutual respect and gain mutual insight, at least on issues of common concern.
4. Show far greater interest, recognition and support for the TPTC Reorganization than heretofore. It may wind up to be a more significant factor for continuing feeder road improvement than Consultant's entire services.
5. Reassess GOH's true abilities and intentions to finance the project. This should be done through frank discussions with TPTC and Ministry of Planning and Ministry of Finance.

6. Look ahead to project personnel re-entry into TPTC and begin to shape their project work (and status) in anticipation.

7. With regard to the machine vs. labor-based dichotomy, consider the following strategy to guide future road work:

a. Conceive of two construction modes

- (i) "fully mechanized," that is, the Heavy Brigades;
- (ii) "Labor intensive," that is, the Light Brigade as an equipment-assisted labor-intensive approach.

b. Classify all road segments scheduled for reconstruction/improvement into two categories (based on terrain and availability of materials): average to difficult and easy to average.

c. Program more difficult roads for machine-intensive work; easier roads for the labor-intensive mode.

d. Survey the easier roads to determine where self-help/Community Action road work might already be in progress. Assign priority to such road segments for labor intensive reconstruction assistance. Work through existing community institutions. Respect integrity of local procedures and preferences. Assure that the road engineers (both TPTC and Consultant) assigned to such segments are attitudinally committed to the viability of this method.

e. While the heavy brigade worked on the more difficult roads in the South, the light brigade could work on the easier roads in the North and then vice versa.

f. For mechanized construction hiring of small complement of local personnel, allow the field engineer the additional control of direct hiring of his men (rather than dealing with Community Councils).

With regard to the technical aspects, Group Seven suggests:

8. That the survey and design efforts for the brigades be re-examined to determine what is essential for their use in construction and that the effort be limited to those needs.

9. That the soils and laboratory effort be directed solely to locating and testing suitable sources of base and surfacing materials for construction use and that compaction testing be terminated. (This does not imply that compaction requirements should be decreased on heavy brigade work.)

10. That two road sections designed by engineer consultants be advertised for bidding by private contractors. The prices should be reviewed for comparison to brigade unit costs and the projects awarded if not excessive. The experience can be used to determine the future of the contract construction mode of the program. Road sections selected for advertising should be of sufficient length to justify contractor investment and mobilization. ^{1/}

11. Delay utilizing additional engineering-consultant services pending progress and decisions on contract construction activities.

12. That the light brigade be defined as a labor intensive-lightly equipped mode and be formally authorized and adequately funded. That costs of production be maintained for comparison with heavy brigade construction.

^{1/} The private contractor mode should not ipso facto exclude labor-based technology. Indeed, the profit motive may be just the dynamic needed to assure the required amount of effective supervision and management in labor-based methods.

13. That greater emphasis be placed on budgeting the brigades on the basis of work units to be accomplished rather than time and materials consumed.
14. Preclude future undue delays in equipment procurement.
15. With regard to the training function, we recommend:
 - a. Bring in a capable training specialist (S-4) in French and respectful of Haitian culture and individual abilities.
 - b. Convert appropriate material on hand into training material.
 - c. Consider a management training course. (See Appendix for illustrative syllabus.)
16. Another evaluation in one year to assess the situation and restructure it as then necessary.
17. Regarding Project Control, we suggest a financial audit to determine funds spent on: surveys, design, and construction separately; and consider those figures vis-a-vis the project standards specified in the PP.
18. A baseline study on selected roads scheduled for improvement but before such construction begins, to allow subsequent determination of socio-economic benefits.
19. Apropos of consultant staff extensions (in light of near exhaustion of funds), we believe the following to be desirable (at least to serve the physical objective of the project):

a. Continuation of the Senior Transportation Advisor's term as originally proposed.

b. Continue with qualified road construction advisors (not necessarily professional engineers) assigned to the three brigades until the latter's potential can be determined after receiving the full equipment allotment.

c. Continue the heavy equipment mechanic advisor for a similar period.

d. Provide strong counterpart direction for the functions covered by the Transport Engineer Advisor and continue the Transport Engineer Advisor's term until the function has an opportunity to reach its potential.

DEFINITION OF TERMS

- heavy brigade:** A TPTC construction unit equipped with the full range of road building equipment normally required for the type of construction being conducted. Typically included are: bulldozers, graders, loaders, compressors & dump trucks.
- light brigade:** A TPTC construction unit with minimum light equipment intended to assist labor in tasks which are impractical for labor to perform economically or productively
- labor based
or
labor intensive:** Work performed primarily or entirely by labor; with hand tools, wheelbarrels, etc. May on occasion be assisted by some equipment.
- engineering consultant
or
design consultant:** Private engineering organization retained by TPTC to make surveys and prepare design plans, estimates, etc. Used by contractors as a basis for submitting proposals for building the road.
- force account:** Method of payment for construction based on costs of manpower, equipment rates and materials consumed as opposed to units of work completed.
- heavy mechanic:** A mechanic qualified to repair heavy machinery, i.e., bulldozers, graders, etc., as compared to a light mechanic—road vehicles, light tractors, etc.
- subbase:** The natural earth on which a road structure is placed. May vary from firm to soft.
- base:** A material usually consisting of either small rocks, gravel, granular soil or mixtures of these, placed on the subbase to provide support for vehicle wheel loads. Should vary in thickness depending on quality of subbase.
- surface or
surfacing:** Mixture of granular materials such as gravel, crushed rock and soil for binder placed on the base to provide a riding surface. Should not ravel when dry nor soften when wet. Required thickness depends on quality and thickness of base. Practical minimum thickness depends on composition of material, weather, traffic, etc.

compaction:

Compressing the materials together. Usually applies to base and surface. Provides greater stability by interlocking particles as well as providing greater resistance to erosion. Usually accomplished with rollers but can be obtained by wheeled traffic. Not always considered essential initially for low cost roads since time, weather and usage will eventually provide similar results.

straight line plan:

A simplified method of providing an engineering plan for use by construction forces in the field. Has the effect of greatly reducing preliminary surveys and design effort but required more field decisions during construction.

ELS
or
SLELC

Equipment Leasing Service

or

Service de Location d'Equipement Lourd de Construction.