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REGIONAL RAIL SYSTEMS SUPPORT PROJECT 690-0247

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# Monitoring Visit

*Swaziland Component*

SUBMITTED TO  
U.S. Agency for International Development

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# Glossary

ACCPAC	Financial Accounting System
A.I.D.	U.S. Agency for International Development
CEO	Chief Executive Officer
CFM	Empresa Nacional de Portos e Caminhos de Ferro de Moçambique (Mozambique Ports and Railways)
DCI	DeLeuw, Cather International Limited, a U.S. firm
E	Emalangeni, a unit of Swaziland currency [1 = 0.3 cents U.S.]
EC	European Community
IBRD	International Bank for Reconstruction and Development ("World Bank")
IMF	International Monetary Fund
LTTA	long-term technical assistance
MOTC	Ministry of Transport and Communications, Swaziland
PC	personal computer
RITES	consulting arm of Indian Railways
RTOS	Radio Train Order System
SADCC	Southern Africa Development Coordination Conference
SPRINT	Spoornet's wagon control system
SR	Swaziland Railway
STTA	short-term technical assistance

# Preface

From October 4, 1993, to October 16, 1993, a team from Burlington Northern and Nathan Associates Inc. visited Swaziland to monitor progress on the Swaziland Component of the Regional Rail Systems Support Project. The team consisted of Russell F. Murphy, team leader, marketing specialist, and independent consultant to Nathan Associates; Edward Barsoski, operations and engineering specialist, and independent consultant to Nathan Associates; and Michael Reid, financial specialist and Burlington Northern staff member. This initiative had three goals: to monitor progress since the last monitoring visit in August 1992, to confer with the technical assistance staff before their departures by the end of 1993, and to assess the readiness of the Swaziland executive team to assume total control in the near future. A comprehensive evaluation of the project will be made around March or April 1994.

# Executive Summary

All participants—Swaziland Railway (SR); U.S. Agency for International Development (A.I.D.); Ministry of Transport and Communications (MOTC); DeLeuw, Cather International Limited (DCI); and RITES (the consulting arm of Indian Railways)—should take pride in the achievements made through this project. SR, which was defunct in 1989, is now a functioning railway. Although problems and dilemmas exist, SR is ready to be placed under full control of trained Swaziland executives without the ever-present array of consultants.

Certainly SR requires additional, although modest, assistance, as discussed in this report, but the thresholds targeted by this project have been met either in actuality or in principle.

## MANAGEMENT

Executive team members, except for the chief engineer, are trained and ready to take full command. (The chief engineering function is currently staffed by a long-term technical assistant, with the candidate in training expected to be ready by the end of 1994.) Team members are eager, however, to maintain contact with A.I.D., and A.I.D. has indicated its willingness to step in when needed.

Conversely, the middle-management team is not at all ready, and a major program to meet this need is required. SR executives should aggressively pursue supporters for such a program, which has been discussed and identified extensively in the past.

## FINANCE

The state of SR's finances can be termed "fragile." Although the railway enjoys a positive cash flow before capital expenditures and a profit, the changes in operations relating to the reemerging port at Maputo will have dramatic effects. These effects, although significant, do not appear to be sufficient to stop independent SR operations.

Future projections argue for considerable restraint in capital programs and related debt servicing. Also, further cost reductions are required, as reflected in SR's tonnage projections for FY 1994 (see Table 2-4, Chapter 2), under which a 30-percent reduction in traffic volume is foreseen.

## MARKETING

Marketing efforts have consistently been targeted to better understanding shipper needs and designing arrangements to satisfy them. Perhaps the most significant example of marketing efforts is the attempt to achieve proper pricing of such key commodities as transit rock phosphate traffic, which is understood will remain with SR after the Maputo port is "on stream." The shipper has threatened to use the electrified Ermelo route or a slurry pipe to Maputo. The current rates are not fully recovering distributed costs and, given the dominance of this traffic relative to the total, this should be unacceptable to Swaziland management.

Other examples include of marketing efforts include

- Continuing the aggressive sales program for container traffic currently under way,
- Diverting petroleum product shippers to Maputo to allow SR a better chance at capturing more of this profitable traffic than the railway currently enjoys through Republic of South Africa ports, and
- Garnering traffic from the new coal mine at Maloma, which represents one-third of cross-border tonnage shipments (all costs would have to be fully recovered).

### **OPERATIONS**

The target operating ratio (expenses to revenue) of 68.0 percent will not be achieved by the end of this project. There is a continuing need to “tighten up” on operations. Given that the operations are modest in size and amount, any inefficiencies in the handling of engines and cars results in a strong negative backlash on the financial performance of the rail operations.

The operational control systems are still being developed and are not fully functioning. Nevertheless, excellent directives and policies are in place and hold great promise for this rail facility in the immediate future.

# 1. Background of the Project

SR was established in 1962 and began operating in 1964, solely to convey iron ore to the port of Maputo for Japan. The iron ore operation ceased in June 1980 after 64-percent pure iron was depleted. SR continued to convey other products, such as sugar, coal, and wood pulp. In 1985, SR constructed a 91-kilometer strategic line—or as some view it, a political link with the Republic of South Africa on the north, to provide access to South African ports of Richards Bay and Durban to avoid increasing operating difficulties in war-torn Mozambique.

Over the years, SR has expanded its role from a largely domestic export carrier to a significant transit traffic carrier for goods destined to and from Zimbabwe, the North East Transvaal region (of South Africa), and the ports of Richards Bay and Durban. Over the past 30 years the administration of the railway and the management philosophy changed at least five times, with different countries orchestrating operation: Rhodesia and Portugal first; Canada second; South Africa third; Zimbabwe, for a short time, fourth; and the United States during the transition to complete Swazi management and executive control. The worst fall-out from this volatility, perhaps, has been the problems with labor caused by the inherent changes associated with such swings in managerial control. However, the change to Swaziland control should certainly be for the better.

At the request of the Swaziland Government, and under the Swaziland Component of the Regional Rail Systems Support Project, A.I.D. contracted with a consortium consisting of DCI and RITES (the consulting arm of Indian Railways). This contract commenced in November 1989 and is intended to end on April 1, 1994, with the bulk of the work and advisory team presence completed by the end of 1993. Figure 1-1 is a map of the system. Figure 1-2 is a schematic of the railway.

The project consists of the following activities:

- Long-term technical assistance (LTTA), for which DCI and RITES provided personnel for the following positions: Chief Executive officer (DCI), Financial Director (RITES), Chief Civil Engineer (DCI), Commercial/Marketing Adviser (RITES), Operations Adviser (DCI), personnel Adviser (DCI), and Training Adviser (DCI);
- Short-term technical assistance (STTA);
- Training; and
- Commodities, such as computers and furniture.

The objectives of the consortium are to (1) improve management performance of SR, (2) improve its overall institutional capacity, (3) ensure its continued viability, and (4) arrange for transition to Swazi management. This document reports on the progress of the SR and its management team toward accomplishing these objectives.

Figure 1-1. Map of Swaziland Railways System

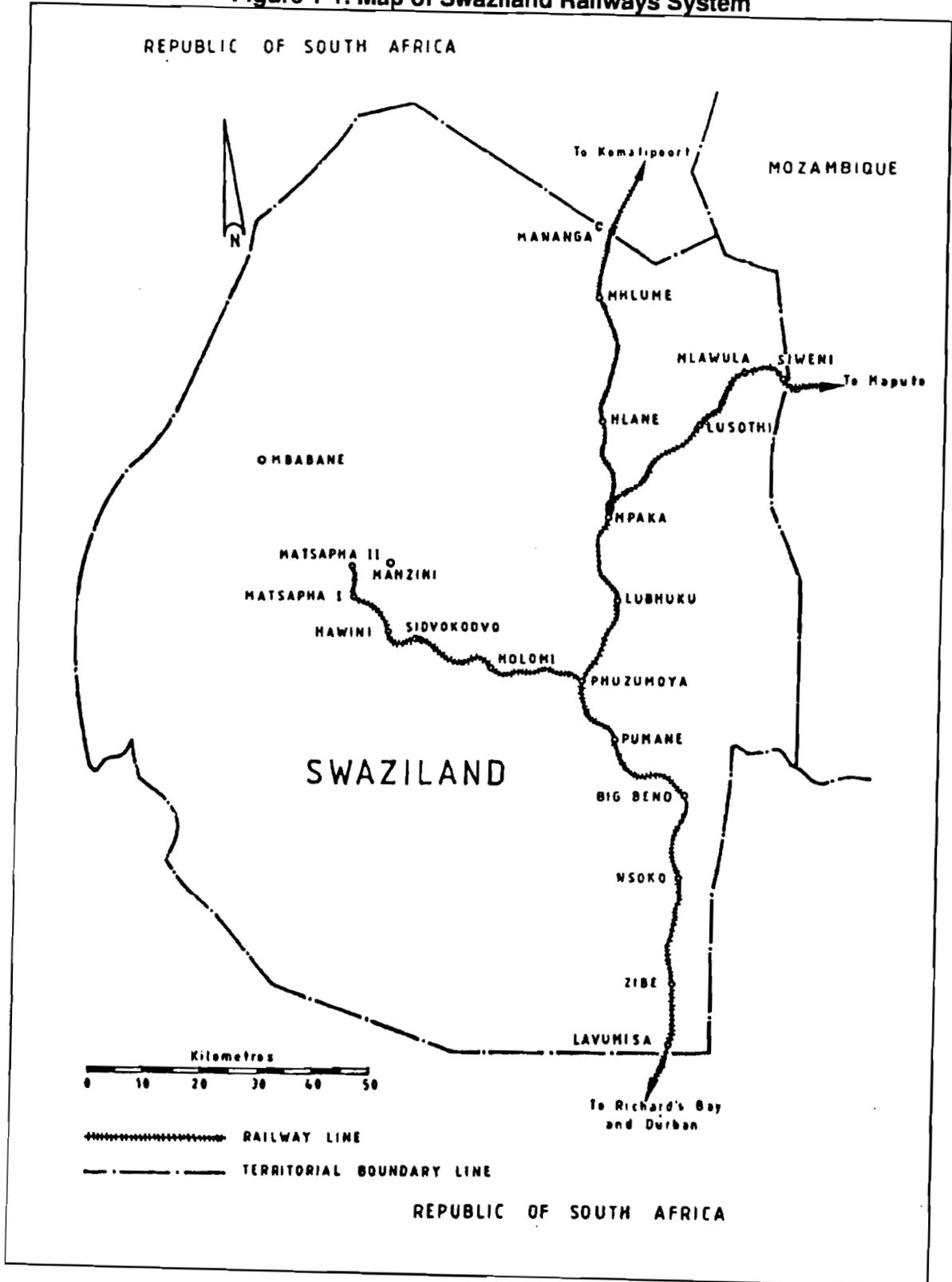
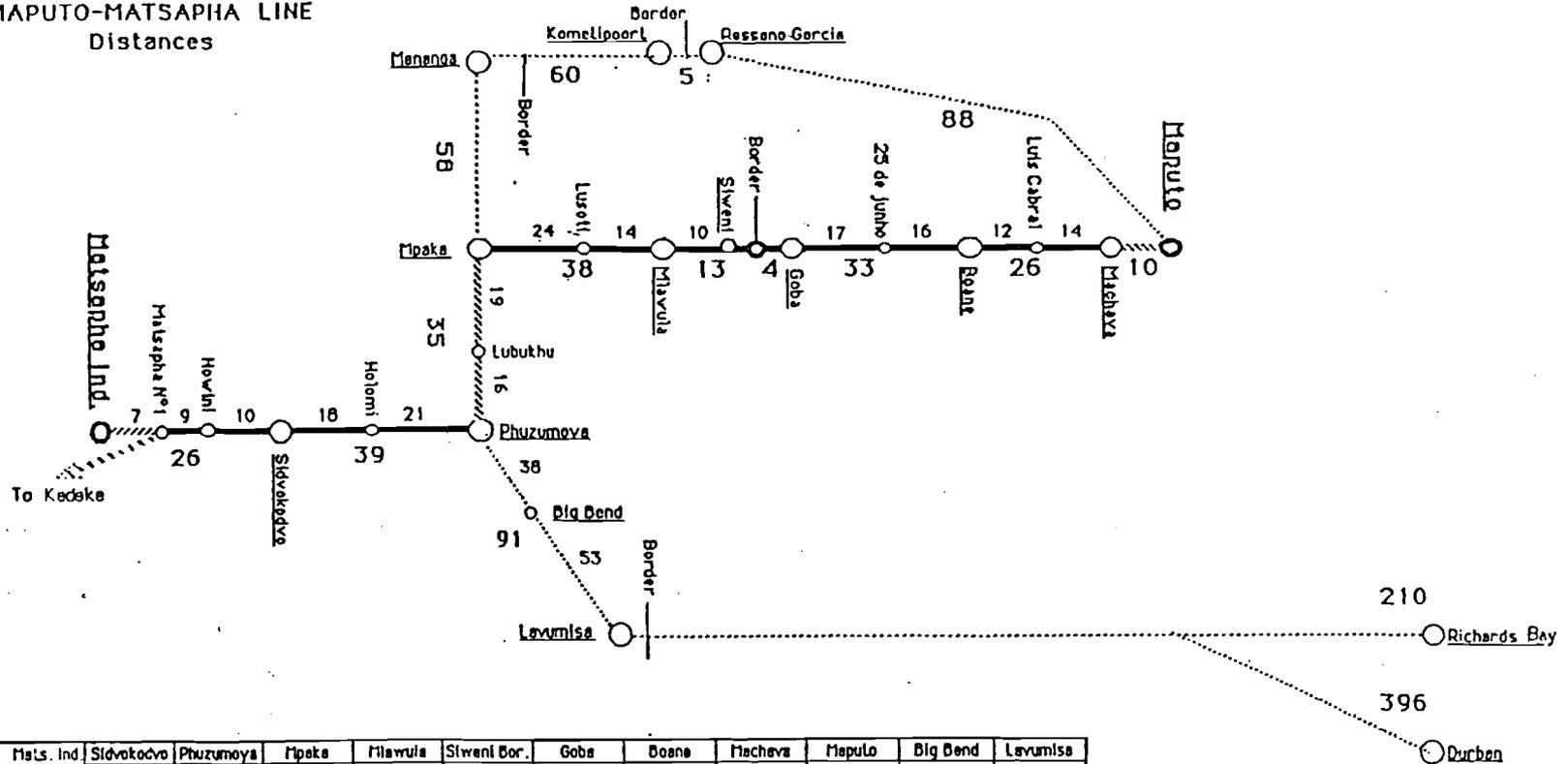


Figure 1-2. Schematic of Swaziland Railways System

MAPUTO-MATSAPHA LINE  
Distances



all	Mats. Ind.	Sidvokodvo	Phuzumoya	Mpaka	Mlawula	Siweni Bor.	Goba	Boane	Macheva	Mapulo	Big Bend	Lavumisa
Matsapha Ind.	-											
Sidvokodvo	26	-										
Phuzumoya	65	39	-									
Mpaka	100	74	35	-								
Mlawula	139	112	73	38	-							
ni (Borcer)	151	125	86	51	13	-						
Goba	155	129	90	55	17	4	-					
Boane	189	162	123	88	50	37	33	-				
Macheva	214	188	149	114	76	63	59	26	-			
Mapulo	224	198	159	124	86	73	69	36	10	-		
Big Bend	103	77	38	73	111	124	128	161	187	197	-	
Lavumisa	155	130	91	126	164	177	181	214	240	250	53	-
Richard Bay	365	340	301	336	374	387	391	424	450	460	263	210
Durban	552	526	487	522	560	573	577	610	636	646	449	396

By road

Mapulo-Boane	27
Mapulo-Goba	75
Mlawula-Mpaka	47
Mpaka-Matsapha	56
Phuzumoya-Matsapha	66

## 2. Status of the Project

This chapter discusses key topics within the disciplines of Management and Labor, Operations, Finance, and Marketing. Since this is a monitoring mission as opposed to an evaluation mission, it focuses primarily on what has occurred since August 1992, the date of the prior monitoring mission. In addition, matters considered important to address before the project ends have been included. When feasible, assessments have been made and expressed in this report.

This chapter is complemented by Appendix A, which addresses topics identified in A.I.D. documents. This appendix is intended to aid A.I.D. in cross referencing observations in this report with A.I.D. documents. See the March 31, 1993, Project Implementation Report, especially "Implementation Issues" in Section IV and the End of Project Status and Outputs listed in Attachment A.

### MANAGEMENT AND LABOR

#### Transition to Swaziland Management

##### *Executive Team*

The project-associated senior management team of Swaziland nationals succeeding LTTAs is now composed of the following:

- Gideon Mahlalela—Chief Executive Officer
- Stephenson Ngubane—Director, Traffic
- Meshack Mabuza—Director, Personnel and Administration
- Bheka Manana—Director, Finance
- Dumisani Gwebu—Assistant Director, Marketing

With the exception of the Director, Personnel and Administration, and the Chief Engineer positions, the management transitions were completed April 1, 1993. Mr. Mabuza took office in November 1992, following the retirement of the former Director, Personnel. The Chief Engineer position will be staffed by an LTTA until November 1994 (see discussion below). The two other LTTAs, Mr. Avery and Mr. Burke, are now acting in an advisory capacity to management, concentrating their efforts on specific project development and implementation monitoring, and the presentation of workplan deliverables.

The transition process appears to have been successful. The senior Swazi management team demonstrates considerable ability, knowledge, and independence. It relies little on the advisory team for day-to-day operational assistance or during ongoing executive negotiations with government, suppliers, customers, regional "partners," and labor organizations. The Swaziland management team gives due consideration to LTTA input, but resultant decisions and plans of action reflect the management team's perspectives. The most apparent complementary operational assistance by the LTTA team during the mission, with the exception of the Chief Engineer's posting, was in development of safety programs and coordination of the Radio Train Order System (RTOS) installation.

### **Chief Engineer Transition**

The sole senior management position currently staffed by an LTTA (Mr. Srinivasan) is that of the Chief Engineer. This position will be supported by the project until March 31, 1994 and, through an extension agreement for Mr. Srinivasan's services, to October 31, 1994. At that point, the incumbent should be withdrawn and the candidate in training, Timothy Ndlovu, should assume administrative responsibility for engineering operations and management.

The management team's plan is to complement Mr. Ndlovu's technical engineering skills during civil project development and specification with contracted assistance from the many competent civil engineering firms available in the region. It is generally felt that the contracts management and administrative training the candidate will undergo from January through March 1994 to complement the Associates Engineering Degree obtained through the project, will qualify Mr. Ndlovu to manage and direct day-to-day departmental maintenance and administrative affairs with competence.

Qualified civil engineers are scarce, and in considerable demand, in the private sector. When the plan for succession of LTTA in the Chief Engineer's position was conceived, no fully qualified candidate was available within, or for recruitment by, SR. Since that time, however, a Swaziland national with an undergraduate's degree in civil engineering from the University of Texas in Austin, Mr. Bafana Matsebula, has returned to Swaziland and been engaged as Engineer in Training by SR.

It is management's plan to groom Matsebula—through railway-specific training in India in regional railways and line supervisory and management positions over a 2- to 5-year period—to become a fully qualified and culturally acceptable (B.Sc. degree) engineer, possibly to be confirmed as the Chief Engineer. While this is commendable, care must be taken not to deny Mr. Ndlovu or discourage his continued development, thereby losing the benefit of training or project inputs provided to-date. The Chief Executive Officer (CEO) of SR is sensitive to the motivational as well as cultural factors of the situation and has granted nonsalary and nontitular benefits to Mr. Ndlovu equivalent to those of the senior-most scale. In addition, the CEO supports further training for Mr. Ndlovu to enable his acquisition of engineer's status. The final posting of a replacement for expatriate engineering assistance would appear to be merit based.

### **Senior Management Training Program**

According to the latest available information, April 1993, the status of the Senior Management Training Program stands as follows:

Courses Scheduled:	53
Completed:	45
Canceled:	4
In Progress:	2
Outstanding:	2

The courses in progress include unit 403, self-paced Improvement of English Language Skills, as well as unit 302, locomotive maintenance portion. Completion of the latter and acquisition of further locomotive maintenance skills should be emphasized.

The two courses outstanding are not perceived as critical to management success. Senior Management seminar part B, unit 101C, may prove beneficial to SR managers in future analysis of organizational and management effect.

Supplementary training in contract management and administration, for the candidate to run the department until the appointment of a substantive Chief Engineer, will be supported by A.I.D. through March 1994.

### **New Positions**

Since the last monitoring mission of August 1992, SR has created and staffed the recommended middle-management post of Management Information Systems (MIS) Coordinator. The position has been filled by Ms. Nomvula since May 1993. Coordination, integration, and procedural support development of the various software applications should be prime concerns of the position. As a systems management position, identification of software application needs should be emphasized and actual in-house development avoided unless such a procedure proves to be the simplest and most effective alternative. Ms. Nomvula appears to be a capable candidate, having a strong background in integrated, multistation UNIX applications in an industrial environment. Since June she has been familiarizing herself with the numerous and largely independent personal computer (PC) applications, paying particular attention to accounting and financial functions. She will probably need 2 to 3 more months to complete this orientation process. The effectiveness and organizational structure of the department is discussed in the sections on Organization and Facilities.

Development of the job description and internal advertisement for applicants for the second recommended post, Safety Officer on SR, concluded during the mission. Sixteen applications from SR staff had been received. Evaluation, and selection or rejection, of candidates had not been completed before the mission team departed. Should no suitable applicant be found from the SR staff external applications will be considered. SR intends to recruit, train, and fill the post by March 31, 1994.

As a forerunner to computer-assisted wagon control operations, SR needs to engage five to eight "wagon controllers" to maintain manual data on wagon movement in country. These positions will be filled by qualified staff made redundant through RTOS introduction.

### **Reorganization**

Previous reports by the mid-term evaluation and monitoring missions had recommended organizational restructuring as follows:

- Divide the Traffic Department into two separate units: Operations, and Marketing and Commercial;
- Consolidate Operations/Mechanical and Civil Engineering under an Operations and Maintenance Department;
- Administer train operating personnel through the Operations Department, as opposed to the Mechanical Department;
- Establish the position of Information Manager;
- Appoint a single officer to develop and coordinate railway safety programs;
- Assign a permanent position to develop and monitor 5-year business plans.
- Administer Signals and Telecommunications maintenance through the Chief Electrical Engineer's office.

Since publication of the reports, SR has been reorganizing the management structure to suit functional and physical requirements. The management team seems to be aware that organizations must

remain dynamic to meet prevalent conditions. Several recommended organizational tasks have already been completed or are under way:

- Separate commercial and marketing sections, headed by an Assistant Director, Commercial (Aaron Simelane) and Assistant Director, Marketing (Dumisani Gwebu) have been established, reporting to the Director, Traffic.
- Responsibility for train crew scheduling, discipline, and administration now lies within the jurisdiction of the Director, Traffic under an Assistant Director, Operations.
- The post of MIS Coordinator has been created and staffed (Ms. Nomvula). Due to current accounting systems, the position is under the administrative control of the Director, Finance because the bulk of her initial efforts are within his realm of responsibility. It is understood that administrative control could change.
- A senior supervisory post of Safety Officer has been created reporting directly to the Director, Traffic. Applications from the SR rank had been solicited by management, and the selection process begun. A suitable candidate is expected to assume active duty by March 31, 1994.
- The Director, Traffic is currently considering revitalizing the previously recommended post of Assistant Director, Marketing Research and Development as part of a planned departmental reorganization and strengthening exercise. As recommended, business plan development and monitoring responsibility could be assigned to the position, since marketing intelligence and analysis are integral to the planning process.
- Maintenance of signals and telecommunications is organized under the direction and administration of the Signals and Telecommunications section of the Engineering department. Headed by a Signals and Telecommunications Engineer, the department reports to the Chief Engineer. RTOS support and maintenance will be added to the section's responsibilities. Electrical engineering, primarily a facilities maintenance function, is within the jurisdiction of the Manager, Electrical and Works. Reorganizing, which was recommended, appears to be inappropriate.

It is satisfying to note that the management of SR has the authority and autonomy to alter "line" organizational structure with due justification and without undue interference from the railway board or government ministry.

### **Authority Gaps**

Other than the Training subsection of Personnel and Administration, and the MIS Cell of Finance, the organizational structure seems to possess sufficient authority, logical hierarchy, and dynamism to fulfill responsibility and objectives. In both exceptions, the senior position carries a lower grade scale and authority than is required to support responsibility, direct development, and implementation of relatively new departments. Both report to their departmental heads through Assistant Directors. Considering the importance of training and MIS, and the magnitude of the task, the positions deserve to be considered for elevation to an Assistant Director level.

## Right Sizing

Perhaps the most significant and visible organizational restructuring issue has been the rationalization of staff from 1,068 at the time of the last monitoring mission to a current approved complement of 709 persons. While remaining somewhat higher than the NPI-recommended level of 658, re-trenchment had surpassed the initial-phase objective of a 290-person reduction to 778. The management team acknowledges that further staff rationalizations may be required if traffic levels/operating demand decline, as automation progresses and skill bases broaden. During rationalization exercises, staffing and skills gaps may periodically occur. To date the railway has been successful, with the exceptions of the MIS Coordinator and Engineer in Training, in filling these gaps from within the redundant or existing complements.

Once the obvious overstaffing reductions have taken place, supplementary retrenchment will depend on traffic volume and labor productivity gains. Absenteeism has been accounted for in payroll deductions, and productivity levels are assessed at the end of each year when productivity bonuses are computed. Unofficial estimates of absenteeism run somewhere between 15 and 20 percent, an unacceptably high level even by Swazi standards. The work force remains inflated to compensate for such high levels. The CEO hopes to reduce absenteeism by 50 percent by March 31, 1994, by introducing a reporting system that would make information on absenteeism available weekly.

## Labor Union

A labor union was introduced in SR in 1989. Railway workers are now part of the Transport and Allied Workers Union, a unit representing all transportation modes in Swaziland. The executive staff and membership are dominated by road haulers, whose interests often conflict with those of the railway and its workers. SR management is negotiating and supporting its workers' segregation from the overall bargaining unit into a separate rail section.

The Union Recognition Agreement between SR and the union, formally acknowledging labor representation through the union and establishing operational and procedural parameters for both management and labor, is currently held up in the Industrial Court. The main point of dispute are the "exclusion clauses"—those terms declaring who may and may not be incorporated in the union bargaining unit. Until agreement on these clauses is reached and signed, no part of the agreement is valid or binding. Court sessions have been infrequent, and "case" presentations only recently concluded. Labor presentation is to follow at yet unspecified dates. In the interim period, the practice of both labor and management is to invoke those sections favoring that party's stance on issues and claiming the agreement invalid when opposing. This leads to inconsistency in labor relations, discipline, grievance procedures, and communications and perpetuates weak bargaining positions for both parties. SR management must actively pursue whatever ministerial support may be available to expedite or at least establish a schedule for the Industrial Court proceedings.<sup>1</sup>

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<sup>1</sup>Just before the publication of this report, the team learned that the case was resolved. While specific conclusions were not known, it was understood that management arguments mainly prevailed.

## **Corporate Strategy**

In support of the 5-Year Corporate Strategy and Business plan by the LTTA–SR management team issued in May 1993, the Swaziland CEO issued

- A “brief” on the document identifying broad departmental responsibility for meeting plan objectives in July 1993; and
- A mission statement of the chief executive's goals quantifying departmental objectives and time frames relevant to the business plan in September 1993.

Both the DCI and CEO documents recognize and emphasize the need for aggressive marketing to recapture diminishing market shares as well as the need to restrict and reduce costs in various areas over the longer term. Financial and traffic projections are not overly optimistic. While identifying areas where economies could be made or effort bolstered, neither document has resulted to date in concrete schedules or methodologies to achieve the corporate objective. Both supplementary documents had been transmitted to heads of departments for translation of executive goals into departmental action plans with specific milestones identified at middle and junior management and supervisory levels.

Apparently missing from the mission statements and departmental responses, however, are timetables for development and presentation of implementation plans. The objectives and completion timetables in these statements are ambitious. Considerable slippage has already occurred without effective transmission of objectives beyond the executive. Progress in meeting the CEO's objectives may best be measured during the final evaluation mission in April 1994, by which time most activities are targeted for completion.

## **Training Policy and Need for Training**

A comprehensive Training Needs Analysis Summary was completed by DCI in April 1993. The document appropriately identifies a requirement for enhancing trades, supervisory, and middle management skills and further investigates regional sources for training. A total of 281 courses in various disciplines, at an estimated cost of E 702,390, are described within the document for 1993–1994. In 1992–1993 SR spent E 442,000 (yearbook) on training programs. A commitment of E 600,000 for training appears to have been made for the current fiscal year. Management should continue to encourage sustained support at these financial levels, improved coordination and focus, and the development of reasonable training schedules.

While SR management recognizes a need for continued training, primarily at middle-management and supervisory levels, a training policy specifying objectives, vehicles of training, departmental roles and authority, and relationships to promotion needs be established. Until policy is clear, the training effort will remain predominantly directed by individual departments, poorly coordinated, and assigned a low priority when weighed against immediate production needs. The Training Manager, under the authority of the Director, Personnel and Administration, should be assigned this task immediately, before developing training programs. DCI's comprehensive Training Needs Analysis Summary (dated April 1993) correctly identifies these requirements. Follow-up, acceptance, or modification of the analysis to form a policy requires urgent SR management attention.

As a result of project training, the senior SR management team is well versed in principles of financial and operational management. The team members, with the exception of the Training Manager, are highly motivated and are managing labor, staff rationalization, motive power hire rate,

and governmental negotiations initiated by the LTTA team—as well as daily departmental affairs and reorganization—with competence and innovation. Experience is now required to supplement academic qualification. The DCI and Swazi team are to be commended for their efforts in railway performance and cost reduction to date.

Senior management lacks confidence in the ability of their middle management and supervisory subordinates. Consequently, senior management is burdened excessively with development and operational issues while still undergoing the familiarization and transitional process. With few exceptions, departmental knowledge rests with a single person: the head of department. It is feared that, should any head of department be absent for a prolonged period, day-to-day and departmental development would deteriorate or regress to previous methodology. In the short term, workplans and objectives must be formalized so that middle management at least has a hardcopy plan to follow during these periods. In the longer term, if management is to prove effective, confidence in subordinates must be developed (through training) with authority, and responsibility delegated in all departments.

The lack of critical path planning and commitment to formal plans appears to extend to senior management. At meetings observed during the mission, discussion was casual and no time frame for decision, comment, or implementation planning on agenda items was formally set. This may in part be a cultural or social attitude extending beyond railway management. If railway management is to be effective and sustainable, cultural norms and business necessity must be reconciled. Training in this regard may be merited at both senior and middle management levels. This item has been identified in the DCI Training Needs Analysis Summary, although the report appears to focus on computer software training rather than critical thinking and planning skills development.

### **National Transportation Policy**

The National Transportation Policy, specifying government intent, direction, and objectives in all modes of transportation, had yet to be published and presented at the time of the monitoring mission. A draft policy document is currently scheduled for completion in November 1993, with subsequent forwarding for cabinet consideration and approval expected early in the new year. While not formalized, commendable progress in areas of transportation concern (road user charges development) and a general awareness of government intent are evident. There is some concern that the policy approval may be further delayed because changes in recently elected cabinet positions and administrative “shuffles” may result in a long orientation period or alteration of draft policy to reflect current administration perspective.

### **Swaziland Railways Viability Blueprint**

The draft Viability Blueprint had progressed to a point of cabinet consideration, with support gained, in principle, from the Ministries of Finance and Transportation as well as the Public Enterprise Unit. Further progress was set back, however, by national elections and resultant changes in ministry and cabinet positions. SR management will initiate the process of gaining fresh ministry support once ministries resume post-election and transition activity. Lack of formal approval has not necessarily arrested progress toward objectives. Debt restructuring, right sizing, and infrastructure adjustments have progressed, although sensitivity to a new administrative perspective could hamper further advancement. SR is reluctant to implement other personnel and administrative items identified in the blueprint, preferring to wait for final right sizing outcomes.

## **MIS Policy**

MISs and computer technology are making significant inroads in traditionally labor-intensive applications, and SR management has opted or expressed a desire to computerize accounting, wagon control, personnel, finance, and general office functions. To date numerous soft and hardware applications exist in what appear to be largely independent, sometimes ineffective, departmental operations. The creation and staffing of the post of MIS Coordinator (given a clear mandate and proper authority) is a commendable first step in providing SR management an integrated and effective management information systems tool. To support the position and standardize hard and software applications, however, management policy on systems requirements must be developed and adhered to. Current systems introduction and usage is further discussed in the next section, on operations.

## **OPERATIONS**

### **Matsapha Inland Container Port**

At a cost of approximately E 700,000 for civil works and facilities, an inland port container terminal was constructed at Matsapha. Initially, gantry-crane lifting facilities at the terminal could accommodate containers of only 6 meters or less in length. Through joint venture negotiations with Spoornet, a mobile crane with a 12-meter capacity has been acquired for use without cost. The facility was opened April 1, 1993, and is currently operational. However, while current traffic levels of approximately 200 units per month represent an increase, they still remain well below immediate capacity. No further development is planned at this time.

### **East–West Line Rehabilitation**

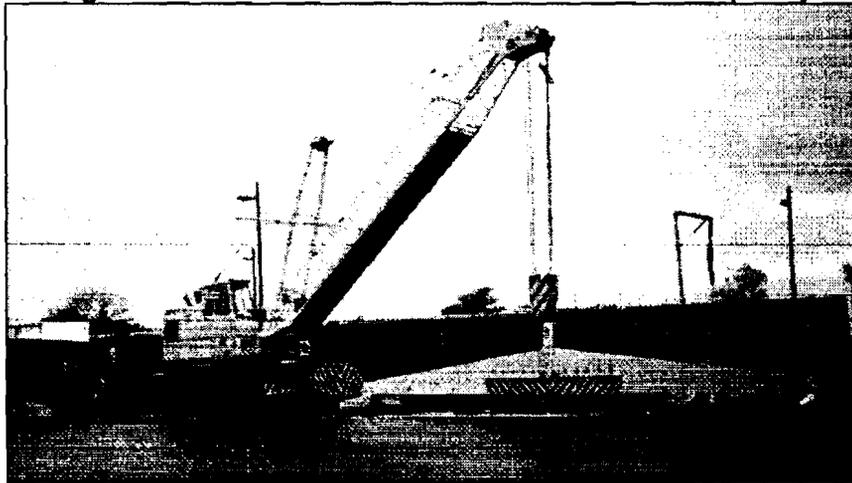
Intensive maintenance programs are ongoing on the Matsapha–Phuzomoya and Mlawlula–Siweni lines, supported by E 1.17 million from the Government of Zambia. Uplifted Kadake–Matsapha line materials are to be used for ongoing maintenance on the sector. The uplifted materials are, however, quantitatively inadequate to rehabilitate the entire east–west line. Consequently, speed restrictions of 40 kilometers per hour (timetable 4) will remain in force until the line is rehabilitated adequately. Even after rehabilitation, line speed will be restricted to 60 kilometers per hour due to sleeper quality (Mrk 3), grade, and curvature conditions existing on both north–south and east–west lines. Figure 2-1 is a photograph of part of the abandoned line south of Mbabane.

In SR's interest, the Government of Swaziland is currently discussing negotiation of a “soft” loan with the Italian government aid agency to fund track rehabilitation up to US\$9.0 million (E 29.7 million). The plan is less costly than original proposals and may use funds for the procurement and installation of some new, but predominantly used, materials from regional sources for rehabilitation of the east–west line. It is expected that negotiations and implementation could be completed within a 2- to 3-year period. SR management feels that the donor will view the plan favorably as a complement to their PW rehabilitative works in Mozambique. Figure 2-2 shows equipment used in line rehabilitation.

**Figure 2-1. Part of Abandoned Line South of Mbabane**



**Figure 2-2. Mobile Crane—12-Meter Container Capacity**



### **Sugar Loading Spur-line Development**

Technical feasibility and cost estimates for the joint-venture development of a spur line to accommodate on-site loading of sugar at Big Bend Mill have been completed. It appears the line could be built for a total of E 17.02 million, of which E 13.227 million would be borne by SR. A financial feasibility study by a consultant to the sugar interest is in progress. Joint negotiations, led by the sugar industry, for loan funding by the European Community (EC) have been initiated. However, negotiations are stalled because of conflicts within the sugar industry. SR should recover the cost of development over a 10-year period, assuming SR can arrest the current decline of sugar traffic or recapture a larger market share. The likelihood of this is discussed further in the section Traffic Patterns and Future Expectations of this report.

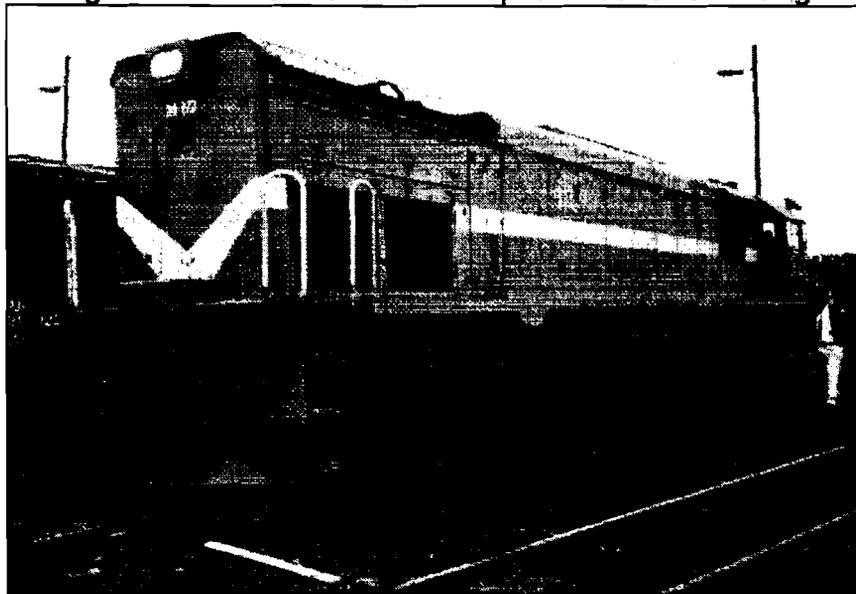
A plan has been conceived to build a line with spurs to service the Mhlume and Simunye sugar processing operations, at a cost of approximately E 50.5 million. The line would run from Mhlume to Mlawula, replacing the Mpaka-to-Mlawula line. Considering the limited distance the traffic would travel to Maputo, however, the plan is not financially viable. It also conflicts with current east-west line rehabilitation plans and negotiations; and, therefore, it is not being seriously considered. Other less costly proposals are being studied. Considering its fragile financial position, SR must exercise extreme caution about incurring additional debt for additional infrastructure, particularly where current operations accommodate current traffic levels adequately.

### **Motive Power and Rolling Stock**

Spoornet has proposed that motive power hire charge rate increases of 114 percent (from E 271 per hour to E 578 per hour) for transit traffic locomotives take effect April 1, 1993. The SR management team was successful, however, in 5-year agreement negotiations limiting the initial increment to 57 percent (E 425 per hour) for a 1-year period. The agreement includes allowance for escalation of hire charges (on review) annually. The Swazi management team has also taken a commendable initiative to further reduce hire charges by fueling locomotives in Swaziland. Fuel rates in country are considerably lower and will currently result in a net saving of E 0.45 per liter of fuel consumed at a rate of 175 liters per hour per locomotive unit, or an estimated E 600,000 p/a on payable hire charges.

Track and roadbed conditions preclude additional savings on power charges through increases in train speed and decreases in transit times. The annual report indicates a ratio of mainline to shunting of 1:4 for class 34 locomotive operating hours. A review of train schedules and motive power utilization should be undertaken to explore the potential for further economy through increased unit activity and use of lower horsepower, and lower cost units for shunting and speed-restricted operations. Figure 2-3 shows a locomotive at Matsapha used for shunting.

**Figure 2-3. Locomotive at Matsapha Used for Shunting**



Spoornet facilities have been contracted to rehabilitate 12 wagons, at a budgeted cost of E 230,000 in FY 1994. The wooden-bodied wagons are being converted to accommodate loading of increased bagged-cement traffic. A total of 24 units were included in the plan, with 12 completed in FY 1993 at a cost of E 288 K. No further rehabilitations or additions to SR wagon assets are planned.

### **RTOS and Safety Programs**

Accidents involving motive power and rolling stock continue to place an excessive burden on SR financial resources. While the frequency of occurrence is not necessarily alarming, the apparent magnitude of damage and associated costs are. A single serious occurrence could easily surpass budgeted accident funds and negate annual profits, thereby placing SR's fragile viability in jeopardy. Operating safety should remain a first priority for management for some time to come.

The installation and testing of SR-funded RTOS equipment neared completion during the monitoring mission. The system comprises centrally located movement tracking, dialogue recording, and two-way radio communications equipment. The purpose is to supersede ineffective and easily ignored "token" systems with centrally controlled movement of train units through using train-to-central to station-to-central communications and orders to reduce accident frequency and associated costs. The system is scheduled for line operations introduction by late October 1993. Initially scheduled for completion by September 1, 1993, the additions of border stations to the system have prolonged the hardware installation and testing period. Systems user training of 180 SR personnel was completed through Esselin Park services in September. The system will improve train tracking and communications, increase onboard and station awareness of network train movements, and provide valuable information for accident investigation. The responsibility for safety and accident prevention, however, ultimately lies in the hands of alert, skilled, and motivated employees. For this reason, SR must assign a high priority to engaging a Safety Officer to develop internal safety programs and manuals, and to the ongoing education of lower cadre employees to support technological advancement.

### **Management Information and Wagon Control Systems**

Spoornet's SPRINT wagon-tracking system was introduced on SR in early 1992. The system falls far short of SR's tracking requirements in that it registers only wagon movement into and out of Swaziland. Internal locations and status for the approximately 400 to 600 units in country at any given time cannot be recorded. SR has "read only" access to a mainframe database maintained in the Republic of South Africa.

Considering the relatively low volume of wagons and locomotives in country, train frequencies, user competence, and Spoornet's concerns for database integrity, SR should consider adapting its already licensed database software program (Symantec Q&A) to track wagon movements in country. The mission team feels that an adequate wagon tracking system with basic freight accounting functions could be developed using existing database programs, with little expense or outside assistance. Up to 2 person-months of (primarily user) macrodevelopment expertise may be required.

Such a system database could include fields such as the following:

- Wagon Number
- Date of Entry to Swaziland custody

- Point of Entry
- Hourly/Daily Hire Rate
- Commodity
- Consignee
- Destination
- Current Location
- Arrival Train No.
- Departure Train No.
- Status (e.g., in Transit, at Terminal, Delivered)
- Estimated Cost
- Estimated Revenue
- Actual Cost
- Actual Revenue
- Estimated Date of Delivery to Consignee
- Actual Date of Delivery to Consignee
- Release Date
- Point of Release

Consideration of Automated Equipment Identification systems would appear to be premature. In light of SR's dependence on foreign rolling stock (primarily Spoornet) and limited traffic, such a costly technological initiative is unnecessary, particularly when low-cost and technologically appropriate in-house alternatives have yet to be explored. SR should remain cognizant of regional development but consider participation in such programs on only an incidental basis.

The introduction of modular ACCPAC accounting software (an off-the-shelf accounting package) is currently in progress. To date, four modules—General Ledgers, Cash Books, Asset Registration, and Inventory Control—have been introduced and supported with little difficulty. A fifth module for payroll accounting, QED, is under consideration to replace the existing ACCSYS application. The problem of vendor representatives controlling data entry and accounting functions for an extended period without transferring the technology to SR user personnel has been overcome. The practice appears to have been discontinued at the instruction of the MIS Coordinator.

Including ACCPAC and SPRINT, SR currently runs at least nine individual software and networking programs, with nonrelational applications in various departments. The various applications need to be standardized, controlled, coordinated, and integrated to form a well-rounded MIS. Though the position of MIS Coordinator has been staffed since June 1993, a clear mandate for operations and coordinated needs analysis has yet to be established. Individual departments are adapting applications independent of system needs. The DCI team appears to support this approach to some extent, through recommendations to introduce externally developed applications to meet specific departmental requirements.

The project team and SR management group are concerned about the suitability, technology and serviceability of MIS equipment provided through the project. This concern is shared by the monitoring mission team. There appear to have been flaws in specification, restrictions on procurement, and errors in materials provided. The UPS units supplied have been prone to failure, necessitating replacement by locally procured units. The 286, 386, and 486 microprocessor technology provided in

the equipment appears, however, to be adequate to meet SR's modest MIS requirements. Further deterioration of the system may be prevented by acquiring external voltage stabilization and surge suppression equipment for each workstation. In the future, equipment specifications should be verified, if not developed, by systems-oriented experts. Presumably, a position should be created to coordinate or oversee computer introductions, build manual systems support, and analyze direct and peripheral requirements before hardware or software is procured.

### **Accident Reserves and Insurance Acquisition**

Consistent with blueprint plans, SR has established an accident reserve fund of E 2 to 3 million per annum, which the government has agreed to supplement at an as yet undecided amount. Barring a serious operational accident, the fund should prove adequate, although indications are that two recent incidents will surpass the amount allocated for FY 1994 (billing may not occur until FY 1995).

As an alternative to establishing reserve a fund with government supplements, the potential for acquiring insurance beyond that already held (third-party liability) is being researched by remaining LTTA members and Price Waterhouse on behalf of SR. It appears that, for a premium of approximately E 3.7 million per annum, a portion of which the Government of Swaziland would fund, insurance could be purchased through Lloyds of London. Clarification is required on deductibility clauses of E 1.0 million to determine whether they apply per incident or per annum. The study of the scheme is expected to be completed for SR consideration by February 1994.

The general feeling of SR management is that, while a set premium may facilitate commitment of a fixed supplement from Government of Swaziland, the premiums may prove exorbitant given SR's past performance. Regardless of study findings, SR will be reluctant to enter into an insurance agreement until its safety performance record improves.

### **Property Management and Noncore Services**

The Viability Blueprint recommends divestiture of noncore activities while maintaining social programs. With staff rationalizations and line upliftment from Kadake, a considerable amount of real estate could be available for sale or lease. Studies regarding operations at Sidvokodvo are as yet incomplete. It appears the government intends to acquire the majority of assets from Kadake, while SR will retain the permanent right-of-way and a few buildings in case area development should occur that necessitate rail service. As in other cases, no fixed schedule for divestiture is evident. The responsibility for identifying which assets will be sold ultimately lies with the government.

Medical services for SR employees cost E 271,000 during FY 1993. SR operates minor treatment clinics at Sidvokodvo and Mpaka. There is no current plan to divest these services.

SR also maintains a secondary school at Mpaka and a primary school at Sidvokodvo. Furniture for the recently constructed facility at Mpaka will be provided by the Government of Swaziland. Teacher salaries are borne by the government. No cost figures for maintenance of the medical and educational facilities were available. There appeared to be little talk of discontinuing these services in the immediate future.

### **Mechanical Engineering and Maintenance**

In 1990, the last year for which detailed figures were available, three incidents involving motive power and rolling stock together incurred costs of E 11,563,041.30, payable to Spoornet for salvage,

repair, and replacement of equipment. Of this total the replacement of 4 locomotives and 13 wagons reportedly damaged beyond repair accounted for E 9,910,512 and E 745,278, respectively.

Considering the high costs associated with repairs to motive power and rolling stock as a result of accident damage, SR needs to develop some expertise in diesel technology to assess, verify, and control repair charges by Spoornet. Diesel technology is a relatively new introduction on SR, and the department, though headed by a Mechanical Engineer, is unfamiliar with specific locomotive compositions. SR should consider middle-management training specific to locomotive class and perhaps investigate acquisition of priced-materials databases or listings and detailed estimates of damage from Spoornet or the manufacturer where applicable.

## FINANCE

### Financial Performance

#### *FY 1993 Financial Results and Indicators*

For FY 1993, SR's financial accounts showed a net surplus of E 14.2 million (versus E 18.7 million in FY 1992). The surplus did not account for unpaid interest on debt or A.I.D. contributions. The surplus did, however, account for provision of housing, fuel for heating, and social services to employees and other noncommercial obligations.

Revenues increased from E 65.4 million to E 80.8. Of this E 15.4 million increase, E 6.9 was due to an 11-percent increase in freight traffic benefitting from the drought-relief movement of 400,000 tons of maize. Miscellaneous and abnormal revenues increased E 8.5 million primarily because of recovery of hire charges in previous years of E 3.1 million and receipt of a grant from the Swaziland government totaling E 2.5 million. These windfalls are not expected to be repeated during 1993–1994.

As mentioned in the last monitoring report, increases in ongoing expenses may be potentially overwhelming given projected traffic diversions to Maputo. Administrative expenses increased 17 percent, while freight revenue from goods transit increased 11 percent. Even after adjusting for employee separation expenses, continuing expenses increased 19 percent.

One of the financial goals of this project is to reduce SR's operating ratio from 146 percent in 1986 to 68 percent by 1994. Recently, however, SR's reported operating ration rose from 71 percent in 1992 to 82 percent in 1993, principally because of the effect of abnormal items in the 2 fiscal years. These abnormal items included recovery of overcharges associated with prior-year accidents, recovery of overcharges in hire credits, grants by the Government of Swaziland, and terminal costs incurred in separating excess employees from the railway.

After adjusting for abnormal items, a comparison of adjusted operating ratios during the 2 years shows improvement from 85 percent in FY 1992 to 77 percent in FY 1993. The balance sheet has continued to strengthen over the past year. As of March 31, 1993, the net position (cash + equity – total debt, in thousand E) was

$$26,650 + 32,956 - 89,691 = -30,085.$$

In comparison, the net position as of March 31, 1992, was

$$22,518 + 18,741 - 90,844 = -49,585$$

In terms of financial stability, a cash balance of E 26.7 million and debt of E 89.7 million mean the net cash position (cash – debt) as of March 31, 1993, was E –63.0 million, compared with a cash balance in 1993 of E 11.7 million. At the 1992 figure, it would take about 5.4 years (E 63.0 million / E 11.7 million) to repay existing debt. However, the diversion of traffic to Maputo port and general declines in traffic will likely reduce cash flow in future years.

**Table 2-1. FY 1992–1993 Revenue Account**

	<i>Expenses/Revenue (million E)</i>	<i>Operating Ratio (percent)</i>	<i>Net Surplus (million E)</i>
As reported	66.6/80.8	82.4	14.2
Government grants (2.5)	66.6/78.3	85.0	11.7
Hire charge recovery (3.1)	66.6/75.2	88.6	8.8
Employee separation (8.7)	57.9/75.2	77.0	17.5
Employee Separation (8.7)	57.9/75.2	77.0	17.5

### **FY 1994 Projections**

The first 5 months of FY 1994 showed relatively solid evidence of negative financial consequences from revived Maputo port operations. Reduced ton-kilometers associated with sugar movements resulted in lower average revenue per ton. Among the traffic commodities, the decline in sugar revenues registered the largest decline on a year-over-year basis of approximately 31 percent. Overall, cross-border revenues (excluding coal) were down 12 percent, or E 2.3 million. Of this decrease, increased yields (revenue per ton) of E 0.9 million were overwhelmed by the combined effects of reduced tonnage and average lengths of haul (E –2.5 million).

Transit traffic, on the other hand, was much more stable during the first 5 months of FY 1994. Yield effect increases of E 0.7 million outweighed the impact of reduced tonnage (E –0.3 million). These trends are consistent with the traffic diversions anticipated by the railway management and the LTTA team. These results also suggest that Maputo diversion is not a future event, but a current reality. Finally, this may also suggest some caution in applying price increases to price-sensitive cross-border traffic, especially given the high fixed cost structure of the railway.

As formulated, the FY 1994 operating and capital budget would require a drawdown of cash reserves because the cash generated from operating activities is insufficient to fund all of the capital spending in the budget statement. After principal payments, the amount of cash available for capital spending is projected to be E 6.4 million, while the FY 1994 capital budget calls for capital expenditures totaling E 13.6 million.

This need to draw down cash reserves to fund long-lived assets, coupled with the declining traffic over the past 12 months, should lend added urgency to completing the long-range analyses suggested in the August 1992 monitoring report. Table 2-2 shows the financial indicators for fiscal year, ending March 31, 1994.

**Table 2-2. Financial Indicators for FY 1994**

	<i>Budgeted</i>	<i>Projected</i>
Operating ratio	91.7	95.8
Operating surplus (E million)	6.0	3.0
Capital expenditure (E million)	13.4	13.4
Cash available before debt service (E million)	-4.3	-8.5

The results projected in Table 2-2 include the following assumptions:

- The traffic patterns established during the first 5 months of the year continue.
- The Maloma Colliery generates 100,000 tons of traffic during the second half of FY 1994.
- Interest and principal payments reflect remaining debt outstanding after conversion of infrastructure loans to equity and natural disaster loans to grants.
- Budgeted depreciation is overstated by E 1.5 million (no cash flow impact).
- Savings from fueling Spoornet locomotives in Swaziland will generate E 0.3 million during the second half of FY 1994.
- Accident expenses for FY 1994 total E 7.0 million.
- Projected 114-percent (E 8.0 million) increase in Spoornet locomotive hire charges for transit locomotives are held to 57 percent (E 4.0 million).

The projected indicators again support the need to make long-range plans (and decisions consistent with those plans) to continue the restructuring process. There is consensus that traffic lanes will ultimately shift subsequent to commercial functioning of Maputo and other Mozambique ports. However, opinions continue to vary as to the timing of these shifts. The financial results during the first 5 months of this fiscal year, and the Sugar Association's verbal confirmations, suggest the shifts may already be under way.

The planned level of capital spending relative to operating surplus is of concern. With increasing amounts of traffic attracted to Maputo port, even the optimistic forecast of 7- to 9-percent rate increases in the Strategic Plan won't support capital spending amounts much above E 5.0 million over the next 4 years. The planned capital budget for FY 1994 is E 13.4 million.

## **Financial Structure**

### ***Capital Structure***

Officially, there has been little change in the railway's capital structure. The accumulated losses have declined, based on the operating surplus in FY 1993. SR retired the National Provident loan (E 2.0 million), which carried an interest rate of 12.5 percent. A principal payment of E 2.2 million was made to reduce outstanding debt held by the Industrial Development Corporation to E 7.0 million.

### ***Loan Restructuring***

While the Ministry of Finance indicates acceptance of SR's position to convert debt into equity, action on the government's behalf is still pending. In addition, the request for conversion of a loan the Republic of South Africa extended to fund the NRL was rejected. As of March 31, 1993, capitalized interest on the Republic of South Africa loan amounted to E 2.8 million. Justified in part because of

lower traffic levels than projected in the Memorandum of Understanding, SR has developed a proposal under which only principal would be financed.

The conversion (or continuing moratorium on principal and interest payments) of government-owned debt is a fundamental necessity for allowing the railway to alter its cost structure in response to shifts in shipping-lane volumes and declining traffic over the next few years. However, it is not a substitute for adjusting the SR cost base to traffic levels, nor should it be construed as a license to generate cash deficits. Additional debt would only increase SR's fixed cost structure at a time when fixed cost reductions are of paramount importance. Table 2-3 details the total debt as of March 31, 1993.

### Financial Systems

Three financial systems form the core source of information needed to monitor SR's financial performance, control the receipt and expenditure of money, and depict the financial implications of marketing and operations decisionmaking. Since the last monitoring visit, progress has been made in installing ACCPAC, a commercially available financial accounting system.

An outside vendor worked with the Finance Department and the MIS Coordinator in adapting the existing chart of accounts and computerizing the general ledger. Subsequently, the Finance Department has worked diligently in reviewing the initial account statements and making appropriate adjustments as necessary.

Some difficulties were experienced relative to two of the accounting modules. The existing payroll system, "ACCSYS," cannot feed information directly to ACCPAC, and the store's module will require additional vendor customizing to work in a railway environment. The result is increased effort to integrate the results from three different systems. Prospects for successful implementation are high: the Director, Finance and the MIS Coordinator are both aware of the required corrective actions, and the vendor is pursuing software solutions to integrate the modules.

**Table 2-3. Loan Status as of March 31, 1993**

	Year	Amount (million E)	Status
<b>Short-term:</b>			
Southern Rail Link	1978	27.0	9%: 40 years—pending conversion
Northern Rail Link	1984	8.0	Proposed for conversion to equity
Cyclone damage	1985	4.7	Proposed for conversion to grant
Usuthu River Bridge	1987	8.2	Conversion to equity requested
Railway equipment	1987	1.3	Project terms not yet established
Debt	1989	9.9	2%: 10 years, April 1992 <sup>a</sup>
Replacement of commercial loan	1990	12.7	2%: 10 years, April 1993 <sup>a</sup>
<b>Subtotal</b>		<b>74.9</b>	
<b>Long-term:</b>			
Republic of South Africa		10.8	4 percent: 15 years, June 1991
Industrial development		7.0	9 percent: 10 years, June 1986
National Provident		0.0	Retired during FY 1993
<b>Subtotal</b>		<b>17.8</b>	
<b>TOTAL</b>		<b>92.7</b>	

<sup>a</sup>Month in which principal repayment commences.

### ***Freight Accounting***

The 1993 Report and Accounts and the Monitoring Visit described the efforts to pursue a functioning system for freight revenue accounting to replace the manual system which suffers from several constraints. To date, neither the freight accounting system, nor a plan to implement the system, is in place. In the interim, the railway must continue to rely on time-lagged traffic reports generated by Spoornet, the originating carrier.

After evaluating the merits of various freight accounting systems in use by other railroads, SR initially decided to become a remote user of Spoornet's INTAC system, in part to ensure compatibility with SR's main service partner. When Spoornet announced plans to develop and switch to the GEMINI system (which would combine the INTAC and SPRINT systems), issues of compatibility and cost-sharing caused SR to reevaluate its choice. An LTTA member has been charged with recommending the best option for SR. (The section of this report dealing with MIS discusses these system matters in more detail.)

From a financial control and management perspective, the lack of a freight accounting system constrains SR in several ways:

- The Railway must continue to rely on Spoornet's accounting system for information on traffic transiting Swaziland. Recent resolution of overcharges indicate a need for SR to independently monitor its own traffic to ensure accuracy in billing and revenue collection.
- Time lags between actual movement of transit traffic and receipt of Spoornet accounts reduces the value of financial monitoring for line managers whose actions are most influenced by current information. This lag also introduces mismatching of traffic and financial results during a given month, again reducing the value of the reports to line managers
- Accurate freight accounting must allow consistent capture of both cross-border and transit traffic to allow proper estimation of costs for the various commodities.

As variability in traffic levels increases, costs incurred by not having a functional freight accounting system increase. Consequently, a swift decision is needed, even though a perfect solution (purchased or internally developed) may not be at hand.

The cost system introduced over the past few months has made marked progress relative to the early exercises in calculating costs by hand. The work by an STTA consultant was singled out as having been successful in tailoring the computer application to the SR environment. The finance staff reportedly gained insight into the costing process as a result of STTA work.

Of some note is the degree to which both providers and users of cost information recognize limitations in current cost efforts. This understanding probably accounts for the commitment several people expressed in using the information to promote cost recovery in the setting of prices. Already, the identification of marginal traffic has led to negotiated rate adjustments. While it will be some time before the system is refined to measure incremental costs (wagon control is required first), the groundwork has been laid to fully integrate costing into commercial activities.

Given this commitment and rapid changes in the marketplace, the parameters used in estimating costs need review and adjustment on an ongoing basis to ensure that margin estimates remain current. Finally, the management level at which this function is placed within the finance hierarchy will also signal to the rest of the railway the confidence the Director, Finance places in cost reporting.

## **Financial Management**

Both the LTTA and Swazi management have acknowledged the need to continue to bolster the finance staff. Perhaps more in finance than in any other department, staff is faced with both changes in management processes and the introduction of new technologies, software applications, and methods of analysis. The general danger with such situations is potential over-reliance upon those individuals who adapt more quickly. Underdevelopment of those who don't quickly catch on is possible, along with over-extension of those who do. The Director, Finance will need to decide which of the existing staff show the required aptitude, and reassign the remainder. Any other situation will be untenable.

### ***Expense Control***

Equal in importance to the traffic diversions caused by the Maputo port is management of the expenditure side of the revenue account, including financial planning, budgeting, monitoring, and timely corrective actions to address variances.

SR has made significant progress in establishing a budgeting process in which department heads take responsibility for their departmental budgets and defend them and their performance at monthly senior management meetings. The Finance Department provides monthly variance reports, which are used at these meetings. The lack of a working freight-accounting system and continued reliance on Spoornet accounting reports—which may be 3 to 6 weeks old—will continue to hamper this process.

### ***Financial Planning***

While a working financial plan was developed for FY 1994, the planned 91 percent operating ratio and drawdown of cash reserves to fund capital expenditures indicates higher scrutiny of general and administrative expenses may be appropriate. Currently, the CEO acts as the budgetary review authority during monthly meetings. Clearly, the Director, Finance must be given sufficient authority to apply higher scrutiny to planned department budgets. Such management control will be necessary as traffic diversions reduce operating margins.

### ***Restructuring***

Thus far, the assessment of traffic profitability has primarily supported tariff and negotiated rate adjustments. As operating margins grow thinner, it will be necessary to continually reassess traffic segments and customers to ensure recovery of service costs. This requires a long-range assessment of SR's business segments within the context of SR's service strategies. However, meaningful progress on this front is unlikely before the business planning function is formalized. Ultimately, services the railway cannot perform on a cost recovery basis must be candidates for discontinuance.

### ***Managing Cost Structure Strategically***

Financial viability will be in part a function of a cost structure (relative to revenues) that results from SR's strategic relationship to suppliers and partners. As noted previously, SR's primary reliance on Spoornet and other suppliers for rolling stock and maintenance means any financial gains from restructuring may be nullified because of vulnerability to hire charge increases. As part of the long-range plan, and before additional restructuring, SR must develop a long-run strategy for managing

wagon and locomotive charges. Possibilities include long-range leases, joint facility versus supplier relationships, and strategic pricing.

Strategic pricing, for example, might involve higher rates on Spoornet's transit traffic to recover a portion of the increased transportation costs. It is likely Spoornet will absorb these rate increases without passing them through to customers because it is in Spoornet's financial interest to route via SR and deliver to Durban or Richards Bay rather than to route through CFM (Mozambique Railway) to Maputo. In addition, to the extent that Spoornet or the South African ports have a strong relationship with a customer, the customer may be willing to absorb higher rates.

The timing of rate increases also seems appropriate. Comparison of internal cost estimates and pricing over the first 5 months indicate that half of the transit traffic (rock phosphate) may be marginally unprofitable. Lastly, price increases to recover increases in Spoornet cost increases may create an incentive for Spoornet to moderate future increases in hire charges. At present, SR absorbs the bulk of the cost increases in reduced margins.

## MARKETING

The topics included in this section were chosen as those deserving attention since the last Monitoring Report. They include commentary on the status of the Maputo port, traffic patterns and future expectations, truck competition, price setting, and customer contacts.

### Status of Maputo Port

The highly traveled north-south link of the SR evolved because of the difficulties the South African railway was experiencing with rail shipments to the port of Maputo in war-torn Mozambique. With the onset of peace in Mozambique the prospect that the port of Maputo, long an untenable destination, will now become operational and acceptable to shippers must be considered. In the past many analysts have stated that the diversions would be so significant that SR might need to consider leasing the north-south line to Spoornet and foregoing much of its known operation as well as staff. We developed a scenario of SR traffic with Maputo in full operation that is reflected in Table 2-4. The scenario does indicate a 30-percent decline in tonnage, requiring further staff rationalization. However, it also implies an existing base upon which the SR can focus and plan without electing painful options, such as leasing its lines to Spoornet and CFM, which would require massive layoffs and loss of control. However, the latter option remains a viable fall-back position.<sup>2</sup>

The International Bank for Reconstruction and Development (World Bank) has a major initiative under way for CFM as well as for the port of Maputo. This World Bank program apparently received funding during the last week of September 1993 and will include rationalizing the CFM north, central, and south lines of its rail network, with immediate attention being given to the south line, which services the port of Maputo and has direct lines to Zimbabwe and Swaziland. A.I.D. is understood to be working in concert with the World Bank on this program of rationalization. The program is particularly aimed at privatizing CFM. With this in mind, the Bank prefers to be only a coordinator rather than a capital investor and will focus on institutional development.

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<sup>2</sup>While the option of disassembling SR, when existing transit traffic nearly disappears because of diversion to the Maputo port, had been given considerable visibility in the past, it was never seriously considered by the LTTA's or SR management. This bias is proving to be valid.

**Table 2-4. Swaziland Railways Tonnage Projection through FY 1994 (thousands)**

Commodity	Fiscal Year						Tonnage Projection with Maputo in Operation
	1991	1992	1993	1994 (First half)	1994 (Projected second half)	1994 (Total)	
Sugar <sup>a</sup>	422	383	351	169	80	249	45 <sup>b</sup>
Pulp	40	78	130	68	68	136	130
Coal	121	93	65	3	100	103	325
Molasses <sup>a</sup>	57	61	77	43	20	63	100 <sup>c</sup>
Fertilizer	19	26	24	14	14	28	20
POL and other tankcars	98	104	94	51	51	102	120 <sup>d</sup>
Cement	69	86	83	46	46	92	90
Citrus fruits <sup>a</sup>	32	22	22	19	0	19	20
Canned fruits	18	17	10	5	5	10	10
Timber	114	74	40	20	20	40	30
Bricks	3	7	3	0	1	1	NA
Maize	NA	NA	87	4	0	4	NA
Local traffic	NA	NA	NA	0	NA	NA	NA
General goods	23	20	33	4	4	8	10
Container traffic	9	12	9	6	6	12	25
Subtotal	1,025	983	1028	452	415	867	925
NRL Rock phosphate	1,380	1,691	1,672	830	830	1,660	1,600
NRL Phosphoric acid	95	95	133	78	78	156	NA
NRL Citrus fruits <sup>a</sup>	110	135	134	84	0	84	100
NRL General goods	1,030	1,069	585	467	467	934	300
NRL Vermiculite ore	83	90	90	40	40	80	NA
NRL Copper concentrate	59	44	34	175	175	350	NA
NRL Container traffic	249	248	192	80	80	160	125
NRL Maize	NA	NA	335	13	NA	13	NA
Subtotal	3,006	3,372	3,175	1,767	1,670	3,437	2,125
Free hauled tonnage	2	1	NA	NA	NA	NA	NA
Total	4,033	4,356	4,203	2,219	2,085	4,304	3,050

<sup>a</sup>These commodities are seasonal; severe declines occur in winter and modest decreases in fall. These projections represent the third and fourth quarters of the fiscal year.

<sup>b</sup>Artificially lower than actual because the short-haul Mhlume and Simunye Mill loadings are not included. All Zimbabwe traffic is assumed via Mozambique.

<sup>c</sup>Assuming that a molasses loading facility at the Big Bend Mill is used.

<sup>d</sup>Assumes that from the fifth year on much of the POL shipments will be through Maputo, enabling SR to be more competitive absent Spoomet's inhibition to price compete with trucks.

Rationalizing CFM is not expected to be an easy or quick task since the CFM railway has severe excess employment and a low level of trained employees. Specifically, the south line has a staff of about 13,000 (down from 18,000 in 1983), which is estimated to be 11,500 to 12,000 in excess. Other than a modest A.I.D. effort to train railway employees, no training has occurred according to the World Bank's staff. In addition, the perception of the indigenous CFM staff that they are all part of a large "family" who will protect each other from actions such as job loss. This perception will make rationalizations particularly difficult.

The Italian government has recently completed rehabilitation of the rail line from the Maputo port to Goba, at Swaziland's border. This will dramatically enhance the attractiveness of this route (notwithstanding the need to upgrade the SR line from Mpaka to Goba). Earlier this year the South African government put pressure on Mozambique to finish upgrading the Maputo port facilities by threatening to upgrade Richards Bay and avoid Maputo after making those improvements.

Given the significance of the prospective diversions to the port of Maputo, a realistic estimate of when they might occur is certainly important but remains speculative. Some diversions have already occurred. Most certainly the ports at Durban and Richards Bay will outperform ports such as those at Maputo and Dar Es Salaam in terms of efficiency and theft avoidance. However, the geographic advantage of Maputo for traffic to Zimbabwe and export traffic from northeastern South Africa, which represents the bulk of SR's transit traffic, is so significant that SR's transit traffic should be viewed as subject to diversion over the next 4 years. Such traffic movements are specifically discussed in the following section.

The cross-border traffic will, in general, be indifferent to a Durban, Richards Bay, or Maputo destination, since the total SR kilometers traversed via either route are nearly the same. Indeed, sugar from the Big Bend Mill will experience a slightly longer SR haul if Maputo is the destination rather than South Africa.

### **Traffic Patterns and Future Expectations**

Table 2-4 highlights the tonnages for the past 3½ fiscal years (April through March), a projection for the remaining half of FY 1994, and a target year about 4 to 5 years in the future. Expectations are discussed below, by commodity.

The first observation is that transit traffic volumes have been at a consistent level for the past 4 years. The cross-border traffic has, however, deteriorated steadily, with sugar, coal, canned fruits, and timber commodities experiencing substantial downward movement. Only pulp and cement traffic have increased (coal shipments are expected to return via a new facility).

When comparing the total cross-border tonnage for FY 1994 to that of FY 1993, adjustment should be made for the maize traffic, which was an aberration due to relief shipments. Specifically, to compare the projected FY 1994 total of 867 tons with the FY 1993 total of 944 tons, 83 tons of maize is deducted from the FY 1993 total. This comparison reflects a clearly undesirable 8-percent decrease.

Except for sugar traffic, the bulk of the cross-border traffic is relatively indifferent to a Maputo or Republic of South Africa port destination, with only nominal effects on SR revenues. For all practical purposes Maputo is now accessible to shippers, but considerable institutional development is still needed. It will be some time before Maputo is an effective competitor to Durban and Richards Bay destinations and originations. Furthermore, if and when up to 90 percent of the existing staff is terminated to eliminate excess labor, such rationalization will be so severe that labor discord over the

next 5 years must be anticipated, which also makes the South African port destinations more favorable. However, by 1997 or 1998 Maputo may be a strong contender and become the choice for current shippers. The traffic volumes shown in the column titled "Maputo" in Table 2-4 reflect the assumption that infrastructure projects will be complete. Completion of projects is not expected before 1996.

### ***Seasonally Affected Traffic***

Sugar, molasses, and citrus fruits are affected seasonally, with no citrus fruit traffic in the third and fourth quarters of the fiscal year and no sugar and molasses traffic in the fourth quarter.

### ***Sugar***

The sugar shipments have been consistently lost to truck carriers, which accounts for the erosion over the past several years. Several additional considerations serve to aggravate this trend in the current fiscal year: specifically, the absence of a spur line to the Big Bend Mill, a shortage of trucks for transit from the Big Bend Mill to the existing rail loading facility, and the shipper's current use of Mozambique's rail line for Zimbabwe traffic. Sugar is a seasonal commodity with no shipments in the fourth quarter, as mentioned above, and a slight downturn during the third quarter relative to the previous two quarters.

The General Manager of the Sugar Association has identified the fact that the port of Maputo will result in diversions of sugar shipments from Republic of South Africa ports. This will yield SR only the 13-kilometer haul to the Mozambique border, for which a 25-kilometer distance is charged. In fact the sugar manufacturers have recently test shipped several loaded rail cars to Maputo and were pleased with the results. They also shipped 80,000 tons to Zimbabwe this season, 40,000 via the southern CFM lines to test that route, and were pleased with the results of that routing as well.

The spur line to the Big Bend sugar facility is still on hold because the Sugar Association has yet to receive an analysis from a University of Natal transport economist regarding the merits of a loading facility at each of the three mills in Swaziland. This analysis was to have been completed before this report and should be in hand imminently. Presumably the spur line will then receive a go-ahead from the Sugar Association. As a result of this delay, at least 45,000 tons of potential shipments are understood to have been lost to trucks, and all of that traffic should return to SR when the spur line is installed. Furthermore, an insufficient number of short-haul trucks servicing the transit link from the Big Bend Mill to the existing rail loading facility results in a loss of tonnage to long-haul trucks. The total capacity of this facility is understood to be 165,000 tons, with 90,000 now being refined for local and other markets. Trucking typically captures all of the refined sugar market.

The patterns of sugar movement from the Big Bend Mill imply that only about 45,000 tons of sugar shipments will be gained when the spur line is installed, as stated above. This is a reasonable projection because of the mill option to refine sugar. The Mhlume and Simunye Mill shipments to Maputo, while originating on the SR system, will not result in much revenue—particularly net revenue. Obviously this is a dramatic decrease, with the base being constantly eroded by trucks.<sup>3</sup>

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<sup>3</sup>It is useful to reflect on the likelihood that the net loss to SR of traffic to Zimbabwe via Mozambique will be very small, the reason being that the car hire costs will be dramatically lower for the new and shorter route than are currently experienced.

**Coal**

The new Maloma mine facility delayed opening in the first half of FY 1994 but will likely be operational by the end of 1993. Management of the mine estimates that four trains per week of 40 cars, each loaded with 45 tons of coal, will be the normal weekly shipment pattern. This works out to 374,000 tons per year and if realized will likely compensate for the lost sugar traffic. For the latter half of this fiscal year only a modest amount was forecast given the inevitable problems associated with plant start-ups.

**Pulp**

Pulp shipments should remain with the railway at the current prevailing levels because the current traffic is a direct result of major collaboration between the end carrier, Spoornet, and the shipper, which caters to the shipper's total distribution needs. The shipments are contracted on an annual basis. SR has not had an enviable record of market share of the pulp exports in the past. In FY 1991 the International Monetary Fund reported a total export tonnage in pulp of 173,000. SR had 40,000 tons of the total, representing a 23-percent market share.

**Molasses**

Molasses from the Mhlume and Simunye Mills likely will remain with the railway at current levels, given the availability of specialized equipment, although specialized trucks could present a problem in the future. Indeed, it could all be lost to road transit for conveyance to the animal feed industry recently established at Matsapha. All of the molasses from the Big Bend Mill is lost to trucks because the mill elects not to use its specialized loading facility and, instead, uses trucks to haul the molasses to the border and pumps it across into a Spoornet loading facility. This truck competition, however, may well be curtailed in the next 4 or 5 years (see discussion below). Molasses, as with sugar, is sensitive to the season, with none available in the fourth quarter.

**Fertilizer, Citrus Fruits, and Bricks**

These commodities are expected to continue at current levels. Citrus fruits are subject to seasonal variations.

**Petroleum Product and Other Tank Cars**

Although this traffic is subject to truck competition, it should remain at current levels because of the satisfactory pattern of past shipments and service and the availability of specialized rail equipment. These shipment volumes, however, could improve if and when the port of Maputo begins receiving the traffic. (The scenario in Table 2-4 makes this assumption.) Currently Spoornet prices the traffic at its destination ports by ignoring the extensive truck competition eroding its base, reasoning that Spoornet would lose more by competing. This tactic hurts SR's share of the traffic. When the Maputo port is used, different players, specifically CFM, should prove more amenable to competing, resulting in greater volumes without SR's having to adjust its prices. SR has already adjusted some of its prices, although it represents only one-sixth of the haul from the South African ports.

### **Cement**

Cement export shipments are expected to remain with the railroad. However, if the commodity is bagged rather than loose, truck competition could prevail.

Loose cement generally is sensitive to rain, but not when poured into the containers on the railcars. Occasionally, long rainy periods result in excess charges for the cars awaiting loading (as observed during this monitoring visit). Figure 2-4 shows cement cars awaiting loading, and Figure 2-5 shows a cement loading facility.

### **Canned Fruits**

Trucking carriers have extensively eroded SR's shipments of canned fruit.

**Figure 2-4. Cement Cars Awaiting Loading**



**Figure 2-5. Cement Loading Facility**



### **Timber**

As reflected by SR management, the primary reason for the erosion, of this traffic base is that trucks must pick up commodities on site. If the truck is an over-the-road hauler, it will simply go directly to

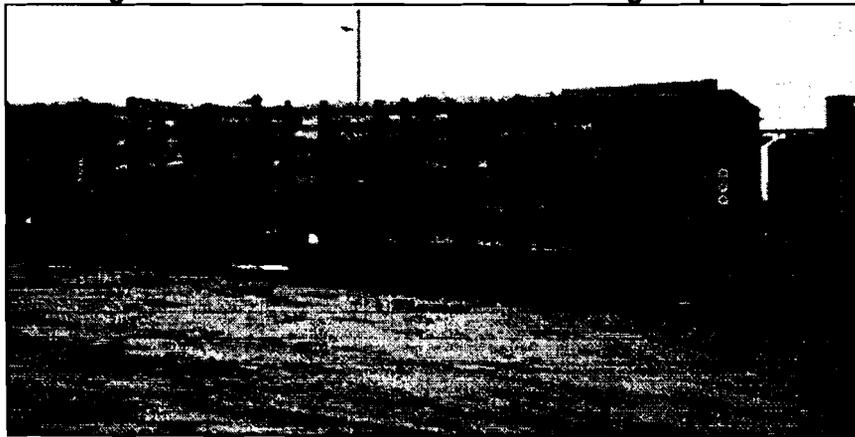
the destination rather than to a railhead. Such competition has been extensive over the past several years and is expected to remain so, with the current base being eroded even further.

Timber is sensitive to the weather, and when it rains, the trucks transmitting it to the railhead do not move. This periodically causes delays and excess train-car days while the loads are awaited. Figure 2-6 shows loaded timber cars awaiting shipment.

### **Maize**

This traffic is an aberration and will be gone when the need for emergency food shipments disappears.

**Figure 2-6. Loaded Timber Cars Awaiting Shipment**



### **General Goods**

This traffic base has been somewhat steady over the past several years. The dramatic decline this current fiscal year can be traced to dominance of the grocery goods component and trucking competitors capturing that market. Figure 2-7 shows general goods being loaded for Maputo (not a labor-intensive technique).

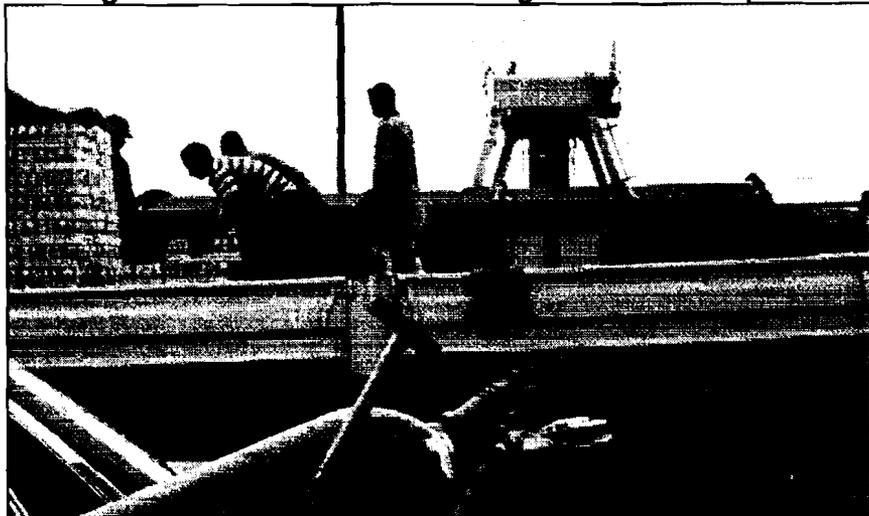
### **Container Traffic**

This traffic is being aggressively pursued by SR, causing positive results for this fiscal year in spite of this being an economically slower year. Given the opportunity and the vigorous SR sales campaign, increases on the order of 20 to 35 percent per year are likely over the next several years.

### **Transit Traffic**

It can be expected that all of the transit traffic diverted to the Maputo port will bypass the SR completely, so the propensity for a transit shipper to favor Maputo is a major consideration.

**Figure 2-7. General Goods Being Loaded for Maputo**



### ***Rock Phosphate***

This commodity may well end up staying with the Richards Bay port destination, therefore transiting over SR lines because the required port facility apparently requires a deeper draft than the Maputo port currently has. This commodity represents about one-half of total SR transit tonnage, so this would be a beneficial outcome. Clearly, verification of this Swaziland management assessment is appropriate.

### ***Citrus Fruits***

The transit of citrus fruits has been eroded somewhat by road transport. The management team was informed that citrus shippers are making heavy capital investments in Durban, thereby favoring Durban over Maputo. However, these shippers are understood to have made capital investments in Maputo as well.

### ***General Goods***

It is possible that general goods may not shift dramatically to Maputo because of the ongoing threat of theft and poor management. Therefore, some amount will likely remain, particularly the higher valued commodities. This assumption has been reflected in the scenario in Table 2-4.

### ***Container Traffic***

It is likely that much of the container traffic, given the value of the commodity inside, will stay with the Durban and Richards Bay destinations to avoid theft and mismanagement at Maputo. This poor image could prove to be hard to overcome for Maputo port, which would be consistent with history and perceptions of other east African ports outside of the Republic of South Africa.

**All Other**

All of the remaining transit traffic will presumably be diverted to Maputo. Much of the general goods traffic consisting of steel and tobacco from Phalaborwa will certainly go to Maputo, likewise the copper concentrate that was coming from Zambia.

**Traffic Projection with Maputo in Operation**

The column in Table 2-4 titled "Tonnage Projection with Maputo in Operation" denotes a current estimate for possible traffic levels around the late 1990s. Total tonnages hauled are expected to decline about 30 percent when raw sugar other than that from the Big Bend Mill is excluded (the decline is only 25 percent when those tonnages are included). Two crucial assumptions drive these projections. First, the port of Maputo will not have the deep draft required to service phosphate traffic, which will thereby continue to South African ports via Swaziland. Second, the disarray and inefficiencies associated with many African ports, relative to existing South African ports, will prevail; thereby, traffic subject to spoilage or theft, and traffic that is sensitive to delays, will favor these latter ports.

The new coal facility at Maloma is also assumed to be in full operation. The sugar traffic destined for the port of Maputo is not noted in the totals because the length of haulage is so small (a 13-kilometer haul with a 25-kilometer charge), and the total loadings would be deceptive for this particular analysis.

The table also assumes that the World Bank-sponsored initiative to pass on road development costs to trucking interests will begin to take place. This initiative is expected to begin in Tanzania in 1994, and in other countries soon after. The associated user charges will begin to distribute traffic between rail and truck more fairly. This effect was modestly reflected in the forecast in Table 2-4.

Note that the cross-border traffic totals appear to be stable relative to current tonnages. While attractive, the projection has not included any growth because it is assumed that truck competition will capture most of that growth. Considerable gains are expected in containerization as a result of the aggressive and rational sales effort under way by SR staff.

The transit traffic decline could be on the order of 40 percent. While significant, this decline is not at the massive levels anticipated earlier. However, the key assumption is the retention of the phosphate traffic because of the Maputo port depth limitations. Some effort to verify this pivotal assumption is appropriate.

**Truck Competition**

In Africa, as elsewhere in the world, the motor carrier is a key competitor to the railway. The truck competitor typically originates at the ports and treats traffic originating inland as backhaul. Unfortunately, backhaul fees set the pricing threshold for SR.

The only good news for SR in this competitive arena is that considerable work has been accomplished in recent years by seven African nations and the World Bank. Specifically, the project has identified relevant user charges to be passed on to truck carriers to fairly reflect the cost of the highway maintenance and development required by truck carriers. However, Swaziland originally elected not to participate in this effort and may be delayed in getting into the program. Nevertheless, the initiative is ongoing and Tanzania will likely be the first country to begin the charges. Swaziland

can observe and decide for itself what would be appropriate. Even with such charges, the trucking operator will remain an effective competitor.

Mozambique currently restricts trucks from competing with its rail system. It is understood that if a truck carrying goods enters Mozambique, a fee in the form of a U.S. 100-dollar bill is required. This has greatly restricted such movements. (Furthermore, the decade-long civil war has taken a great toll on the country's highways and it will take time to upgrade them.) However, since Mozambique is one of the nations working with the World Bank on the motor carrier fee arrangement to compensate for highway costs, this border fee practice may cease. Sugar traffic could be particularly affected, but Swaziland has already discounted that traffic as long lost. Nevertheless, other originating traffic will become susceptible to competition.

It is understood that four particular motor carrier operations offer the major competition to SR. They are Unitrans (Swaziland), Unitrans Natal, Cargo Carriers, and Autonet. A potpourri of other (private) carriers form the balance of the SR competition. SR is projected to receive only one-eighth of the import traffic and about two-thirds of the export traffic. Clearly more must be done to promote SR at the port destinations of South Africa, particularly collaborating with CFM for Maputo port origination. Certainly seven-eighths of the import traffic is not going solely by nonrail because of perceived superior price or service.

### **Price Increases and Price Setting**

At this time SR's commercial and marketing activities appear to be in concert with financing in determining full-cost pricing and reasonable inflationary rate increases. The SR staffs are aware of the need to recover fully cost increases due to inflation and other reasons. The commodity movements that do not fully recover allocated costs, in terms of feasible rate increases and given rail needs and market forces, are evident. Therefore, the problem of revenues not meeting costs is gaining executive and analytical attention, but revenues are still not fully profitable and the current initiatives will continue.

Tariff increases are guided by use of a cost model that calculates total costs. The inflation rates experienced within the country are used to guide negotiations and tariff setting along with the calculated profitability from the cost model. Actual haulage rates could be lower than tariff rates because of negotiations with shippers. Certainly, more rigorous techniques to derive desired rate increases are possible but do not appear necessary at this time. Such techniques are likely to be developed as the entire process evolves.

### **Customer Contacts**

The primary initiatives for customer contacts appear to be in the container traffic area, which offers promising and profitable traffic gains in the near term. At this time, excellent relations exist with CFM. The Swaziland executive team is not foregoing opportunities that may arise with the rebirth of Maputo port. However, since SR only has one-eighth of the import market, even more aggressive efforts in contacting shippers and designing required services seems worthwhile.

### 3. Conclusions and Recommendations

#### CONCLUSIONS

1. The Swaziland executive team is ready to take over the railway. The consulting team has done a superb job in helping the railway and its management in reaching this milestone.
2. Traffic has decreased for the past 3 years and is expected to decline further by the end of this fiscal year. In the near future, when the Maputo port and the CFM railway are in a reasonable state of effective operation, total volume could easily be down by 30 percent. A planned response, particularly in the area of cost control, was not evident to the monitoring team.
3. SR is functioning as a marginally profitable railroad as of October 1993, and given the declining traffic base, the cost of accidents, and the need to continue reducing costs, the railroad's financial strength will remain fragile. The accident reserve currently may be underfunded given the most recent mishap (September 1993). Indeed, accident-related costs should continue to be of major concern to management.
4. The issue of safety must be elevated in the plans and the attention of the executive team. Accident costs, which appear to be annual occurrences, are massive relative to total operating costs.<sup>4</sup>
5. The monitoring team has also made the following observations, which are less importance than the first four, above:
  - There has been sufficient evidence over the first 5 months of this fiscal year that increasing truck competition and revived operations of Maputo port (and other ports in Mozambique) have affected traffic patterns and traffic volumes on SR's lines. As these effects intensify, financial viability will depend upon SR's ability to adjust expenses consistent with traffic levels.
  - The rapid escalation of indirect expenses (administrative and accident-related) jeopardizes SR's future profitability. Financial viability will depend upon SR's ability to control indirect expenses and adjust variable expenses as traffic levels change. This challenge is achievable.
  - Transit traffic that continues to be destined to South African ports should be targeted for rate adjustments that are consistent with market conditions and that allow for cost recovery. Variable costs associated with reductions in the number of Spoornet trains (e.g., lo-

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<sup>4</sup>A continuation of the safety record experienced thus far in 1993–1994 could threaten the railway's financial viability. The Accident Reserve may be currently underfunded given the most recent mishap in September 1993.

comotive, fuel, wagons) should be automatically eliminated because Spoornet should not apply hire charges.

- The onslaught of computer technology has been welcomed at SR and, if properly coordinated and phased in, could provide considerable management benefit through information access. Efforts to date have been somewhat random with a marked tendency toward unnecessary sophistication or reliance on external databases.
- The wagon control and freight accounting systems are critical to SR's ability to aggressively control expenses associated with train operations and to realize 100 percent of the revenues from traffic services. The institution of stronger internal audit, coupled with monthly and quarterly expense reviews, will help control and reduce administrative expenses and set the stage for necessary staff reductions. The continued influence of quarterly and monthly financial reviews should result in an environment conducive to expense reduction.
- Management style is casual, making it difficult to transmit executive objectives to middle-management and supervisory levels as well as translate them into concrete and formal work plans with departmental milestones for achievement of corporate goals. While department heads appear to have rational plans formulated (not documented), there is little interdepartmental coordination of activity.
- The management organization is adequate but still has gaps in authority or responsibility, particularly in the training, MIS, safety, and real estate or asset management functions.
- While the training objective (to train the executive team) has largely been met,<sup>5</sup> the need for training middle-management staff remains. Without this paramount step, replacements for the existing executive staff will not be properly developed and inefficiencies in operations may become the norm for the railroad in spite of the excellent executive staff currently in place.
- The governmental process relative to policy development and formalization has yet to deliver the long-awaited National Transportation Policy, the Viability Blueprint, and debt restructuring. Delays in approval make it difficult for staff to focus on SR's needs.

### RECOMMENDATIONS

1. The need for a wagon control and freight accounting system should be addressed immediately. The impacts of Maputo port diversions are not several years off as previously envisioned, but beginning now. In addition, dependence on the SPRINT wagon-control and INTAC software systems should be seriously questioned. Because of the volume of transactions, the railway's MIS development effort favors using existing "in-house" hardware, software, and communications equipment.
2. Individuals should be assigned to analyze and recommend administrative expense reduction opportunities, and these recommendations should be integrated into the budgeting process.

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<sup>5</sup>The one position remaining on the executive team is that of Chief Engineer. During October 1993, a Swazi citizen educated in engineering and who has completed a 2-year training program on other railroads in the region was hired as the preferred candidate for this position—to commence immediately. Another candidate, without a 4-year engineering degree and in whom management has considerable confidence, also remains available.

Once approved, responsibility for implementing each expense reduction should be assigned to a department head.

3. The ACCSYS payroll system, which is costly to maintain, should be eliminated in favor of QED or another payroll system that can be integrated into the ACCPAC general accounting system.
4. SR must address the vulnerability of locomotive and wagon hire expenses to Spoornet and other suppliers. Failure to achieve control in this area is doubly harmful—attempts to recover higher rolling stock charges through pricing will increase SR's vulnerability to road competition.
5. SR should formalize internal training, safety, and MIS policies to lend coordination, direction, and appropriate authority to ongoing and initiated efforts. Senior management should consider granting Assistant Director status to the positions of Training Manager, MIS Coordinator, and Safety Officer as the incumbents acquire training. Each of these positions and disciplines differs sufficiently from other departmental divisions to merit separate status and enhanced authority.
6. Senior management, along with appropriate middle managers, would benefit from a retreat to improve interdepartmental coordination at the executive level and between the executive and middle-management levels. The objective of improving communications and coordination should help SR better prepare for the complete departure of the advisory team.
7. Physical infrastructure development should be limited to commercially viable projects. Noncommercial, PSO (school and medical), and noncore operating development should be curtailed and available government-funded facilities used.
8. SR must firmly negotiate its own interests relative to joint venture costs. Specifically, shippers should be expected to absorb a fair share, often on the order of 50 percent, of capital costs when they directly benefit from a siding or other railway capital endeavor.
9. The SR staff is encouraged to seek support for a middle management training program following the cessation of A.I.D.'s support of this project. Alternative sources of funding for such a program have been extended, and pursuing this support is appropriate.
10. The Government of Swaziland and Ministry of Transport should take prompt action to resolve outstanding union recognition transportation policy, and Viability Blueprint issues. While the bureaucracy is addressing each of these matters, further delays and the absence of resolution will compromise effective management of the railway. SR should maintain its liaisons with the appropriate government staff on each of these issues.
11. To minimize the possibility of the recently trained executive team leaving, the advisory staff should complete a salary comparability review before departing.
12. A.I.D. is urged to maintain contact with the Swaziland management team following the departure of this project's technical assistants, and to remain receptive to providing modest assistance if the need arises.

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**Appendix A**  
**END-OF-PROJECT GOALS**  
**(as of October 1993)**

<b>END-OF-PROJECT GOALS</b>	<b>COMMENTARY (AS OF OCTOBER 1993)</b>
<b>Implementation Issues Raised [during USAID's] Last Reporting Period</b>	
1. Obtaining consensus on the necessity for right-sizing Swaziland Railway's (SR's) labor force to ensure viability and, then, on a plan to effect the right-sizing.	1. Internal management's objective for labor force size is 698, and The National Productivity Institute has recommended 650. With staff size dropping from 761 in March 1993 to the current staff level of 709, staffing is approaching a favorable size. Although down sizing to 650 is needed, this need is not widely recognized.
2. Creation and implementation of a management transition plan.	2. Swaziland managers, with the exception of the Chief Engineer, are in place and functioning. Although they all accept the necessity of doing it alone, Swaziland executives are clearly nervous.
<b>New Implementation Issues [as of March 1993]</b>	
1. Continued viability of SR being partially dependent on external forces, as demonstrated by Spoornet's proposed equipment hire charge increases, diversion of traffic to Maputo, and regional economic downturn.	1. This situation is no different. The port of Maputo should begin to get sugar traffic from SR during 1994, but other diversions may be a bit delayed. Diversion of some commodity traffic, such as for phosphate, may not be delayed because deeper ports are needed at Maputo. The downward traffic trend is indeed taking place as projected.
2. Completing most remaining project outputs by the next reporting period.	2. [See End of Project Goals and Outputs Discussion Below].
3. Implementing Government of Swaziland Draft Viability Blueprint Recommendations.	3. The Government of Swaziland has yet to issue this document. However, discussions with government staff indicate no decisions will evolve that may prove difficult to.

END-OF-PROJECT GOALS	COMMENTARY (AS OF OCTOBER 1993)
<b>End-of-Project Goals</b>	
1. Debt–equity ratio reduced from 408 percent in 1997–1988 to 150 percent by the end of the project in 1993.	1. As discussed in prior Monitoring Reports, this goal was misnamed, since it was really referring to the ratio of long-term loans to revenues. The recommendation, understood to have been adopted, was to supplant this definition with the net of cash plus equity less total debt. This net amount improved from March 31, 1992, to March 31, 1993, declining by one-third. This net is expected to improve further and will change substantially when government debt is restructured into equity.
2. Swaziland CEO and department heads trained for their jobs, in place, and functioning effectively.	2. With the exception of Chief Engineer, these positions have been filled and the individuals in them are functioning effectively. Candidates for the position of Chief Engineer have been identified, but the position has not yet been filled.
3. SR's operating ratio (expenses divided by revenues) reduced from 145 percent in 1987–1988 to 68 percent.	3. SR will not reach this goal. It was closest during haulage of the maize traffic. Then again, missing this goal will compromise the future more than other factors.
4. Operations and business systems developed, accepted, and used.	4. SPRINT is not in place, and the October 1993 monitoring team recommended that this initiative be dropped. An in-house initiative, using Symantec Q&A and allocating a couple of specialized man-months to software design, was recommended. The Swaziland executive team apparently favored this approach as well.
5. Intra–Southern Africa Development Coordination Conference (SADCC) traffic on SR increased from 390,000 MT/year to 500,000 MT/year by end of project.	5. As noted in earlier Monitoring Reports, this measure is not relevant to SR because any diversions to Republic of South Africa still enhance this SR traffic base. Therefore, it is best to set consideration of this measure aside.
<b>Outputs</b>	
1. Financial capital structure analyzed, and recommended changes to capitalize SR provided.	1. The Government of Swaziland has yet to act on loan restructuring, although its intentions appear to be promising for SR. This matter must be resolved, as a satisfactory resolution may be elusive to SR after A.I.D. leaves.

END-OF-PROJECT GOALS	COMMENTARY (AS OF OCTOBER 1993)
<b>Outputs (continued)</b>	
2. Loan portfolio analyzed and loans restructured.	2. The Government of Swaziland has yet to resolve this matter, but any servicing of the government loans on the part of SR should not evolve.
3. Corporate strategy and planning systems established.	3. The CEO is active in nurturing this concept within SR and has distributed a paper expressing his views. This initiative should be furthered entrenched with the retreat before LTTA/STTA efforts cease. However, a universally developed and widely endorsed business plan on part of the Swaziland executive team is not yet evident. The CEO is, however, steering in that direction.
4. SR rights provided and safeguarded under the agreement between the Government of Swaziland and the Government of the Republic of South Africa.	4. The Republic of South Africa loans have not been restructured and the debt will have to be serviced. However, the Swaziland executive team has not forgotten the desirability of having the Republic of South Africa forego servicing the debt, so the request will remain up front and active.
5. Management Information Systems (MISs) established.	5. The need to standardize software programs used throughout SR remains. The new MIS coordinator represents a mechanism to begin standardization, and executive endorsement and supervision of such remains. The RTOS is almost in operational status. The introduction of ACCPAC accounting software is well underway. The need for an in-house-developed wagon tracking system, in lieu of SPRINT, is obvious and has been recommended by the October 1993 monitoring team.
6. Revised tariff structure developed and in place.	6. While this process is now somewhat disciplined, about 50 percent of the traffic (measured in tons or revenues) are from shippers who individually negotiate with SR for better than the tariff rates. Since the tariff rates recover inflationary costs, this procedure is less than desirable and the process and its ramifications needs be considered.

END-OF-PROJECT GOALS	COMMENTARY (AS OF OCTOBER 1993)
<b>Outputs (continued)</b>	
7. Financial management plan and systems development implemented.	7. The ACCPAC system is on the way to being fully operational. An in-house costing system is being used for guiding the pricing decisions of rail services. Enhancements are required, but this will be an ongoing need.
8. Personnel Management System improved and in use.	8. The final resolution of this matter still remains in the Industrial Court, and this situation compromises effective operation of SR when a conflict with the Transport and Allied Workers Union arises. No controlling master document defining positions or procedures exists. Swaziland executives have been encouraged to continue pressing for resolution of this issue and appear to be alert to such a need.
9. Marketing plan and budget developed and in use.	9. A number of marketing initiatives are underway, including establishing closer ties with operations at the port of Maputo. The inland clearance depot is in operation. Continued effort to get the Government of Swaziland to support construction of a spur line to the Maloma Colliery is underway. All other aspects with this facility appear settled. Negotiations with the Sugar Association that recognize the association's needs and plans are progressing. However, the sugar shippers appear to possess the balance of power in negotiations, given the omnipresent option to go by truck. The container shipments to ports do not require any coordination with trucking initiatives, so opportunities to coordinate with trucking appear to be downplayed. To be a team rather than competitors, more still needs to be done in learning to cater to trucking. Timber and sugar shipments are possible avenues. The SR does have some leverage with general goods shipments to the Maputo port that are going by rail only to forego the fee harassment at the borders. Being natural truck movements the SR might gain some trucking friends to cooperate in shifting those movements in exchange for better cooperation elsewhere.
10. Staff training completed.	10. This has been achieved, but only at the executive level. Since training of middle management had not been a part of the contract, the responsibility for finding another financial supporter for this initiative falls upon the SR.

**Appendix B**  
**LIST OF CONTACTS**

Personnel contacted by the monitoring team in preparing this report are listed below (in alphabetical order).

<b>Name</b>	<b>Organization/Responsibility</b>
Avery, John	Chief of Party, LTТА
Burke, Michael	Traffic and Operations, LTТА
Cahoune,	Director, Sugar Association
Dlamini, Selbourne	Training Manager
Gordon, J. Alex	Assistant to Director, Traffic
Grover, R. K.	Adviser, Commercial and Marketing
Gwebu, Dumisani	Assistant Director, Marketing
Jackson, Jeff	Public Enterprise Unit
Mabuza, Mishak	Director, Personnel and Administration.
Krichene, Nourredine	International Monetary Fund (U.S. location)
Mahlalela, Gideon	Chief Executive Officer, SR
Manana, Bheka	Director, Finance
Makhubu, Vusi	Assistant Director, Finance
Moeller, Phillip	World Bank—Instit. Dev. Spec. (U.S. location)
Nomvula,	MIS Coordinator
Matschulla, Christian	MOTC, Transport Economist
Ndlovu, Timothy	Engineer in Training
Nikoi, Naa Dei	World Bank—Dir., Infra. Opns. Div. (U.S. location)
Ngubane, Stephenson	Director, Traffic
Pschyk, Fred	STTA
Srinivasan	Chief Engineer, LTТА
Similane, Aaron	Assistant Director, Commercial