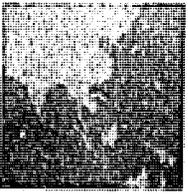
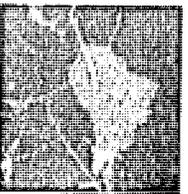
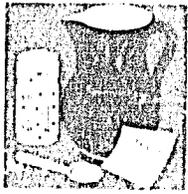
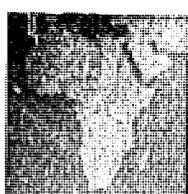


PRITECH

Technologies for Primary Health Care

EVALUATION OF THE
WAR VICTIMS FUND

SRI LANKA: THE JAIPUR FOOT
PROGRAM OF THE COLOMBO
FRIEND-IN-NEED SOCIETY



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FOOT PROGRAM OF THE COLOMBO
FRIEND-IN-NEED SOCIETY

A Report Prepared by PRITECH Consultant:
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11

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The evaluation team has had a mere two weeks in Sri Lanka. The authors recognize that they can only get a snapshot glimpse of the work of many people and organizations over many years. They are painfully aware that the knowledge they have gained of the program is limited and incomplete and we are humbled by the task we have undertaken. A great many people in Sri Lanka have been so kind and helpful as we sought to learn about the Jaipur Foot Program and the work of the Colombo Friend-In-Need Society.

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GLOSSARY

| | |
|--------|--|
| A.I.D. | U.S. Agency for International Development (Washington headquarters) |
| AK | Above the knee amputation |
| BK | Below the knee amputation |
| FINS | Colombo Friend-in-Need Society |
| MOH | Ministry of Health |
| USAID | U.S. Agency for International Development (overseas mission) |

Chapter 1 Introduction and Background

It is somehow in the organization, conduct and preparation of evaluation reports that problems and shortcomings are highlighted and the successful operations of an organization receive less attention. This often leaves the reader with the misleading impression of the conclusions of the evaluators. The authors of this report want to make it clear from the beginning that we find the Colombo FINS to be a well organized institution with a highly dedicated and well trained staff, ably supported by an enthusiastic and involved board of directors. The Jaipur Foot Program is recognized by professionals throughout the country and from abroad for its quality work and for the important mission it serves in Sri Lanka. The FINS has been a good steward of the USAID grant. The authors strongly recommend continued assistance from USAID to expand and further strengthen the capabilities of the FINS to assist thousands of individuals to lead active and productive lives.

1.1 Project Description

The War Victims Fund was established by the U.S. Congress in 1989 and is administered by the Office of Health of the U.S. Agency for International Development. The original and subsequent legislation have defined the Fund as a relief program that provides emergency assistance to civilian victims of civil strife. While the emphasis of the Fund is on the provision of prosthetic devices, the Fund can also support medical and surgical services, physical therapy, orthotics and vocational rehabilitation.

Following a needs assessment in prosthetics production and distribution in Sri Lanka undertaken by a U.S. specialist in the fall of 1990, the Colombo Friend in Need Society prepared and submitted a proposal to USAID in November 1990. After review by USAID, the proposal was revised in December 1990 and a grant agreement between USAID and Colombo FINS was signed on May 31, 1991. The agreement provided Rs. 17,220,000 (\$420,000) of A.I.D. funds for the three year period, June 1, 1991 through May 31, 1994. The Colombo FINS agreed to provide the rupee equivalent of \$238,550 as its matching contribution.

1.2 Project Goal and Objectives

The goal of the grant to the FINS is to increase production in its four workshops to meet the demand for limbs resulting from the escalation of violence in Sri Lanka.

The funds are to be used to increase the production of artificial limbs by improving, replacing or replenishing the equipment, machinery, tools and materials in each of the four FINS workshops. The FINS is expected to develop a continuing educational plan for current prosthetic and orthotic workmen and to provide a training

program for new workmen who will be hired as trainees. The FINS is also expected to enhance its present rehabilitation program in the areas of physical therapy, counselling of the amputees and families, gait training, vocational training and job placement. Finally, the FINS is expected to upgrade the hostel facilities at each worksite and provide food and housing for the amputees during the period of fitting the limb and rehabilitation.

Specifically, the original grant agreement sets the following targets for the three year period. Individuals will be provided with:

- 4,000 - lower limbs
- 600 - upper limbs (later reduced to 100)
- 450 - wheelchairs
- 300 - tricycles
- 2,500 - crutches
- 2,000 - orthotic braces

1.3 History of Project

The Colombo Friend in Need Society, organized in 1831 to provide relief to the poor, is the oldest registered charitable organization in Sri Lanka. With a long and distinguished record of concern for and assistance to the poor and disabled, the Colombo FINS shifted its program focus in 1985 when it began the Jaipur Foot Program. This program, with its many components, not all of which are funded by USAID, now constitutes the entire work of the organization.

Much of the activity of the FINS is not easily quantifiable although it is an important component of this private voluntary organization. Some members of the boards of directors of the organization in Colombo and at the branches demonstrate great enthusiasm, personal involvement in the activities of the FINS, and in fund-raising and other efforts to support and publicize the work of the organization. The same enthusiasm, dedication and concern for the physically impaired permeates the staff. It is to the credit of the FINS that a significant portion of the staff are limbusers.

1.4 Demographic Characteristics of Patients

Since the Jaipur Foot Program was introduced in August 1985, approximately 90 percent of the amputees served have been men and 10 percent women. About 65 percent of the prosthesis provided are for below the knee amputations and 35 percent for above the knee amputations and just a tiny proportion of clients needing both limbs.

The provision of limbs is heavily concentrated in the age groups from 11 to 60, with about 33 percent in the age group 21-30 which would include many of the soldiers who have lost limbs due to the

domestic conflict. Provision of limbs to persons in the age groups 11-20, 31-40, 41-50 and 51-60 are nearly equal, representing about 13 to 16 percent each.

The causes of amputations are varied but concentrated among several groups, headed by the domestic conflict which accounts for roughly 33 percent of all amputations. Other major causes of amputations include gangrenous wounds, road accidents, train accidents, trapgun explosions, cancer and vascular disease. The domestic conflict accounts for over half of the amputees served by the Jaipur Foot Program since the A.I.D. grant began in 1991.

1.5 Methodology for the Evaluation

A two person team visited Sri Lanka from September 18 to October 4, 1993. They examined the project proposal, grant agreement, consultant reports, project progress and financial reports. They were briefed by staff of the FINS in Colombo, Kandy and Galle, interviewed a non-random group of patients at each of the three sites and met with FINS board members at each sites. The USAID project manager provided briefings and traveled with the team to Kandy. The Jaipur Foot Program project director accompanied the team to Galle. The team used the detailed USAID/ISPO Prosthetic-Orthotic and Services Evaluation form to evaluate services, staffing, equipment and training at each site. Information about the Jaffna facility was obtained from an interview with the vice-chairman of the Jaffna FINS board who is now resident in Colombo.

1.6 AIDEX Games

The authors were privileged to attend the third annual AIDEX games which were held in Colombo on the weekend of September 18-19. These games are organized by the Rotary Club in association with the Colombo FINS. Participation is limited to Jaipur Limb users and wheelchair users. Among the events were a 25 km bicycle race, wheelchair marathon, wheelchair tennis, swimming, archery and a variety of track and field events for all ages. With some hundreds of spectators present, limbusers demonstrated their sports skills as part of the rehabilitation efforts of Colombo FINS. In a well-organized ceremony, trophies were presented to many participants. The music and presence of a military band contributed to the festivities. The games provided excellent publicity for the Jaipur Foot Program and brought attention to the physical ability of limbusers.

Chapter 2 - Activities of FINS Under USAID Grant

2.1 Production and Status of the Four Workshops

2.1.1 Lower Limbs

Three year project target: 4,000

Results through August 1993:

| <u>Year</u> | <u>Colombo</u> | <u>Galle</u> | <u>Kandy</u> | <u>Jaffna</u> | <u>Total</u> |
|----------------|----------------|--------------|--------------|---------------|--------------|
| June 91-May 92 | 799 | 35 | 88 | 224 | 1146 |
| June 92-May 93 | 754 | 34 | 114 | 229 | 1131 |
| June 93-Aug 93 | 172 | 22 | 41 | 7 | 242 |
| TOTAL | <u>1725</u> | <u>91</u> | <u>243</u> | <u>460</u> | <u>2519</u> |

With only eight months remaining, the likelihood of achieving the three year target of 4,000 new limbs depends largely on production at the Jaffna branch. The figures for the first three months of year three are incomplete for Jaffna.

Experience from the project to date indicates an increasingly heavy demand for repair of existing limbs (as the number of those limbs increases) which is essential for the success of the project. However, the time and effort involved in repairs do not appear in the above statistics. The original target was an estimate based upon the best information available at the time. It is clear that the estimate was on the high side and underestimated the extensive repair work of the workshop. The following table indicates the number of repairs undertaken at each workshop during an average month.

| <u>Location</u> | <u>Lower Limb</u> | <u>Upper Limb</u> | <u>Orthotics</u> |
|-----------------|-------------------|-------------------|------------------|
| Colombo | 98 | 4 | 14 |
| Kandy | 15 | - | - |
| Galle | 12 | - | - |
| Jaffna | 90 | 2 | 9 |
| TOTAL | <u>215</u> | <u>6</u> | <u>23</u> |

2.1.2 Upper Limbs

Three year project target: 600 (later reduced to 100 by joint agreement of USAID and Colombo FINS)

Results through August 1993:

| <u>Year</u> | <u>Colombo</u> | <u>Galle</u> | <u>Kandy</u> | <u>Jaffna</u> | <u>Total</u> |
|----------------|----------------|--------------|--------------|---------------|--------------|
| June 91-May 92 | 59 | - | - | - | 59 |
| June 92-May 93 | 51 | - | - | - | 51 |

| | | | | | |
|----------------|------------|---|---|----------|------------|
| June 93-Aug 93 | 12 | - | - | 6 | 18 |
| TOTAL | <u>122</u> | = | = | <u>6</u> | <u>128</u> |

The project has already achieved the revised three year target for the provision of upper limbs. It appears the original target simply overestimated the demand. The continuing domestic conflict in the north and east regions of Sri Lanka has resulted in only limited loss of upper limbs; most of the amputations are of lower limbs due to stepping on pressure mines. Another factor is that the provision of upper limbs is mainly for cosmetic reasons, unlike lower limbs which are essential for continuance of daily activities and earning a living.

The Jaipur Foot Program has wisely concentrated its production on lower limbs. Upper limbs are more expensive than lower limbs, far less functional, and require more frequent repairs.

2.1.3 Orthotic Braces

Three year project target: 2,000

Results through August 1993:

| <u>Year</u> | <u>Colombo</u> | <u>Galle</u> | <u>Kandy</u> | <u>Jaffna</u> | <u>Total</u> |
|----------------|----------------|--------------|--------------|---------------|--------------|
| June 91-May 92 | 317 | - | - | - | 317 |
| June 92-May 93 | 256 | - | - | - | 256 |
| June 93-Aug 93 | 115 | - | - | 28 | 143 |
| TOTAL | <u>688</u> | = | = | <u>28</u> | <u>716</u> |

The provision of orthotic braces is substantially below the three year project target and the target will not be achieved by the end of the project.

2.1.4 Wheelchairs

Three year project target: 450

Results through August 1993:

| <u>Year</u> | <u>Colombo</u> | <u>Galle</u> | <u>Kandy</u> | <u>Jaffna</u> | <u>Total</u> |
|----------------|----------------|--------------|--------------|---------------|--------------|
| June 91-May 92 | 43 | 10 | 3 | 5 | 61 |
| June 92-May 93 | 34 | 10 | 14 | 35 | 93 |
| June 93-Aug 93 | 24 | 5 | 10 | - | 39 |
| TOTAL | <u>101</u> | <u>25</u> | <u>27</u> | <u>40</u> | <u>193</u> |

The provision of wheelchairs has been substantially lower than the three year target and that target is unlikely to be achieved by the end of the project. Again, the figures for Jaffna for year three are incomplete and would increase the total only marginally.

2.1.5 Tricycles

Three year project target: 300

Results through August 1993:

| <u>Year</u> | <u>Colombo</u> | <u>Galle</u> | <u>Kandy</u> | <u>Jaffna</u> | <u>Total</u> |
|----------------|----------------|--------------|--------------|---------------|--------------|
| June 91-May 92 | 10 | 4 | - | 5 | 19 |
| June 92-May 93 | 26 | 6 | 5 | 21 | 58 |
| June 93-Aug 93 | 11 | 5 | 5 | - | 21 |
| TOTAL | <u>47</u> | <u>15</u> | <u>10</u> | <u>26</u> | <u>98</u> |

With the project at the three quarters mark, provision of tricycles has been only 33 percent of the three year target. It appears unlikely that the program will achieve the target by June 1994.

2.1.6 Crutches

Three year project target: 2,500 pairs

Results through August 1993:

| <u>Year</u> | <u>Colombo</u> | <u>Galle</u> | <u>Kandy</u> | <u>Jaffna</u> | <u>Total</u> |
|----------------|----------------|--------------|--------------|---------------|--------------|
| June 91-May 92 | 408 | 28 | 28 | 167 | 631 |
| June 92-May 93 | 379 | 77 | 82 | 208 | 746 |
| June 93-Aug 93 | 61 | 25 | - | - | 86 |
| TOTAL | <u>848</u> | <u>130</u> | <u>110</u> | <u>375</u> | <u>1463</u> |

Although the June-August 1993 figures do not include information from the Kandy and Jaffna workshops, the provision of crutches is substantially below the three year target. It is unlikely that the target of 2,500 pairs of crutches will be achieved by the end of the project. In addition, it should be noted that a pair of crutches costs substantially less than the \$25 per pair budgeted in the FINS proposal, roughly \$12.50 per pair. Future modifications to the grant or future proposals should modify this figure.

2.1.7 Status of the Four Jaipur Foot Facilities

The FINS has established Jaipur Foot facilities in four cities, Colombo, Galle, Kandy and Jaffna. All are currently in operation. The Galle facility was closed for approximately six months (October 1992 to March 1993) because of problems with the board of directors. A new board was constituted and the facility resumed operations in April 1993. Because of the continuing domestic conflict in Sri Lanka, the Jaffna facility cannot be visited by

Colombo staff. The former president of the Jaffna FINS now resides in Colombo and serves as coordinator at headquarters for the Jaffna program, including overseeing arrangements for shipment of supplies and equipment.

The Colombo facility is by far the largest. The workshop produces a full range of artificial limbs and orthopedic braces. It produces all of the feet used by all four facilities. The facility occupies several buildings in a complex owned by the Colombo FINS. The facility is staffed by 11 office personnel, 3 persons managing the hostel and 20 workshop technicians and lesser trained members. The executive director of the Jaipur Foot Program has her office here.

The workshop occupies parts of two buildings, but there is need for additional space for production and storage. The equipment provided by USAID has been installed and is functioning, with the exception of a sander which is awaiting shipment to Kandy and two sanders awaiting installation of 3-phase power at the workshop. The staff has the best trained technicians and the workshop serves as the training center for new technicians who will later work at any of the four workshops. The director of the workshop is an extremely talented, well trained and experienced person who provides excellent leadership and training to the staff. His assistant is also well trained and experienced. The workshop produces about 12 feet per day and has the capacity to produce left and right feet in five common sizes. This workshop supplies the Jaipur Feet to the other workshops. The current backlog or waiting list is about one month. The large working area of the two facilities is tight and plans are underway to build another workshop on vacant land in the compound. Workshop space is not adequately ventilated. The planned additional workshop will house foot manufacturing activities which are most in need of good ventilation.

The center's hostel has two 10 bed wards for male patients, one ten bed ward for female patients, dining room/recreation room and kitchen. Staff for the hostel includes a matron who lives at the hostel, assistant matron and cook. The hostel facilities are minimally adequate. Patients and staff would benefit from a substantial upgrading of these facilities.

The administrative building contains office space for the 11 administrative staff members, a large meeting room which is used for board meetings, training sessions and work room. There is limited computer equipment available.

The Kandy facility is housed in a new building which opened in September 1992. It has all new equipment, almost all of which was supplied by USAID under the current grant. Financial support for the building was provided by the Norwegian Government's international assistance agency, NORAD, and the Kandy Rotary Club.

The previous president of Sri Lanka donated the land for the building. The facility has ample space for the 20 bed hostel, dining room, counseling room and office. Workshop space is adequate at present, but when an oven is provided for working with thermoplastics, it should be placed in an adjoining room or area. If demand for production of limbs increases, there is space for future expansion of the workshop. Staff consists of two technicians, two administrative officers, a gardener and a sweeper. The Kandy facility lacks a strong paid administrator and currently relies heavily on board members to oversee functions that could be better delegated to an administrator. The staff seems productive. On the day of the team's visit, they had three prostheses (one AK and two BK) ready to present to patients. They had several other patients waiting for repairs or to start on their new limbs. The Jaipur Feet are shipped from Colombo; all other materials and supplies are procured in Kandy.

Several dynamic members of the Kandy board of directors are active in the local Rotary Club and have encouraged excellent working relationships between the two organizations. The Board has raised an endowment fund of nearly Rs. 2,000,000 through private donations. The earnings from the endowment pay the operating expenses of the center.

To meet the health needs of limbusers and their family members, the Kandy FINS sponsored a health camp. Nearly 600 persons attended and received health and dental checkups, as well as refitting of limbs.

At the entrance of the building are marble plaques honoring the former president of Sri Lanka for donating the land, the Kandy Rotary Club for raising funds for the building, and the Norwegian foreign assistance agency (NORAD) for donating equipment. In fact, nearly all equipment in the building has the A.I.D. emblem. It seems right and fair that USAID should get the same permanent form of recognition as the other donors. This is an issue for USAID to raise with the FINS.

The Galle facility is squeezed into small quarters in one building at the old, partially abandoned general hospital which had vacant space after the completion of a new city hospital. There are two male wards with a total of three beds and a capacity of six beds and one female ward with one bed. The female ward is in need of two additional beds which could be accommodated in the existing ward. The workshop is a cramped room with limited space for the staff and patients. The workshop has a capacity of 8 limbs per month and now averages about 5 per month. Storage space is inadequate. One committee member stores wheelchairs and tricycles at his place of business. Staff is limited to two technicians (plus one technician vacancy) and an administrative assistant. A general upgrading of the whole facility or move to larger quarters would benefit both staff and patients.

The Jaffna facility is fully operational although seldom visited by Colombo staff because of government travel restrictions. The evaluation team was unable to visit Jaffna but interviewed the vice-chairman of the board who now lives in Colombo and serves as the Colombo coordinator for the Jaffna facility. The facility maintains a staff of 15 persons, including 4 technicians, 3 physiotherapists, and office personnel. There is a five bed hostel. The works manager was trained at Jaipur. Two of the technicians were trained in Colombo, one under the direction of Mr. Singer. Another technician was trained in Jaffna by the works manager.

Patients served by this facility are mainly civilians and include many children. The services include many orthopedic braces. The Jaffna facility is unusual in that it makes wheelchairs and tricycles in addition to limbs and braces. There is currently a backlog of about 300 patients, roughly a 12 month waiting list.

The Jaffna facility suffers from the current domestic conflict which affects the ability of the Colombo office to ship supplies and materials and transfer funds. The shipping process takes three months or longer. Goods are shipped via the International Committee of the Red Cross, but Colombo FINS must pay the shipping costs. Because of shipping problems, Colombo FINS recently sent molds and rubber so the Jaffna workshop can begin producing foot pieces.

Reports from Jaffna are often delayed. Electricity at the facility is problematical, contributing to delays in production of limbs and reports. The facility has a generator to provide some power, if and when the staff is able to obtain diesel fuel to run it.

2.2 Technical Observations

The FINS workshops were all producing prostheses which were very useful to the amputees. All of our small sampling of patients were able to use their prostheses for most or all of a normal work day. The tinkered aluminum sockets create limited contact/support area; this leads to discomfort and a tendency to wear too many stump socks. However, in our sample we saw scant evidence of prosthetic injury to the stumps of otherwise healthy amputees. We observed many instances of aluminum socket breakage. The fracture was consistently from a medial or lateral popliteal corner proceeding around to the anterior of the socket. Plastic sockets in progress evidenced a generally good knowledge of total contact and weight/force bearing principles. The marriage of a polypropylene socket to an aluminum shank and Jaipur foot seems to hold good promise for a more comfortable, durable prosthesis. Modifications to improve ventilation of that design may be possible.

The molded plastic socket designs are most important for amputees whose limb loss is due to diseases or conditions resulting in

peripheral vascular and/or peripheral nerve degeneration (i.e., diabetes, etc.) Technology gains additional importance to the extent that the FINS program includes clients with those diagnoses.

The standard Jaipur foot design seems to have a more than adequate posterior heel protrusion. That causes a knee flexion (destabilizing) effect during the heel-strike to foot-flat portion of gait. The result is a gait deviation which must be compensated by the amputee. A below-knee amputee will experience extra fatigue of knee extensor muscles and additional wear and tear on the anterior/distal aspect of his stump. The above-knee amputee will experience greater difficulty in walking with an unlocked knee. A heel modification (less posterior protrusion and a slight level on the posterior heel bottom) and addition of a bottom tread pattern to the foot design was discussed with Mr. Kumarapala. He will give these potential modifications an extensive trial before even considering a mold change. A sketch of the suggested modification is attached to this report. (See Appendix D - Suggested Modification of the Jaipur Foot.)

The Jaipur foot production process at Colombo is a double Vulcanization process. The second vulcanization cycle is necessary to fill voids remaining after the first vulcanization cycle through the oven. Reducing the process to a single such cycle would involve two things: 1. More accurate & repeatable measurement (weighing) of the components, and; 2. Greater ability to place those materials where they need to be on the hand-assembled preparation. If the second vulcanization cycle can be eliminated, production could be almost doubled with the same amount of molds and oven(s).

In his May 1993 report, Mr. Singer mentioned the need for a cast saw for removing plastic from the plaster pattern. There is still no cast saw in evidence at any of the FINS workshops. Pneumatic cast saws must be acquired for each facility using thermoplastics, as well as the necessary air compressor capacity to power them.

Mr. Singer noted in his report that the number of people needing orthoses (orthopedic braces) is several times as great as the number of amputees. The multiple he suggested may be conservative. When civil strife disrupts immunization programs and health care delivery systems (and restricts travel of people to receive medical care), a wide variety of orthopedic conditions can be attributed to that violent strife. The evaluators feel that the FINS board and administration should give serious consideration to a more significant expansion of the scope of this program in the direction of orthotic training and services.

There is a significant continuing education opportunity coming to the Eastern hemisphere in 1995. The eighth triennial World Congress of the International Society for Prosthetics and Orthotics will be held April 2-7, 1995 in Melbourne, Australia. That

organization has always been partially devote to the prosthetics and orthotics needs and services in the developing nations of the world. Topics of practical interest to Mr. Kumarapala and Jeane Samuel will certainly be on the program. FINS should consider sending them to that congress.

2.3 Provision of Technical Assistance and Training and Subsequent Improvement in Orthopedic Devices

Two U.S. experts have provided technical assistance to the Colombo FINS since the current grant began. Mr. Frederick Downs had made the initial needs assessment for prosthetics production and distribution in Sri Lanka in October-November 1990 which provided the basis for development of the grant. He made a follow-up assessment in May 1992. Mr. Robert Singer assisted with the development of the Jaipur Foot Program in Sri Lanka in 1985 and has provided continuing technical assistance and training support to the program ever since. He provided technical assistance and trained additional technicians during visits in August 1991, shortly after the current grant began, and again in May 1993. He introduced and demonstrated the use of thermoplastics instead of aluminum for socket construction. He has likewise introduced the use of thermoplastics for orthosis construction. In fact, the thermoplastic technology has been more than introduced - - - the Colombo FINS staff is working with these materials in spite of not having a cast saw.

The FINS has created a Technical Board whose aim is "to develop and improve the existing technology with a view of improving patient care and comfort". Among the Board's specific objectives are developing a better quality limb using plastics and other synthetic materials, explore and adapt more advanced technologies in production of limbs, and increase the production of limbs. The Board includes a mixture of medical orthopedic specialists, engineers and polychemists. As noted by Mr. Singer in his May 1993 report, the Board began with good attendance and enthusiasm and was a productive unit. More recently, attendance at monthly meetings has slipped and the influence of the Board reduced. He recommended several areas where the Technical Board could make a positive contribution to solving important technical problems.

2.4 Upgraded Equipment

Most of the equipment programmed under the grant has been ordered, delivered and put into operation. There is still an urgent need for pneumatic cast cutters (electric cast cutters exist but are not durable enough for this application). There were several pieces of equipment at Colombo FINS awaiting shipment to other branches.

Two ovens to be used for thermoplastic limb production were designed and produced locally. The first oven produced insufficient heat and was too small to handle the required sheets

of plastic. It has been rebuilt. A second oven needed repairs shortly after installation.

Improved sanders have been procured and installed at each facility.

All equipment provided by USAID at the three facilities visited was properly marked with the A.I.D. symbol, including workshop machines, beds, tables, cabinets, desks and chairs.

2.5 Provision of Needed Supplies

Nearly all materials required for production of limbs, feet, crutches, wheelchairs and tricycles are available on the local market. The Kandy branch of FINS is able to purchase its supplies there instead of ordering through the Colombo office. Crutches, wheelchairs and tricycles are purchased from local distributors, although the Jaffna branch has produced some wheelchairs and tricycles.

2.6 Incentives for Workers

Maintaining trained technicians remains a problem. Once trained and experienced, some technician are wooed by government orthopedic facilities because of higher pay, pension benefits and perhaps greater job security. Higher pay may induce some FINS technicians to remain, but losing trained technical personnel is likely to remain a problem.

The FINS has made a special effort to recruit and train limbusers for technical, office and hostel positions. This is important both for employing limbusers and demonstrating to new amputees that they, too, can return to regular daily activities. The limbusers appear to have a deep dedication to the FINS and are likely to be a long-term source of staff.

Chapter 3 - Friend In Need Society

3.1 Board of Directors

The boards of directors of Colombo FINS and Kandy FINS and the committee for Galle FINS include some members who play an active role in planning, overseeing, and participating in the activities of the organization. Other board members play a more passive role. There are some tensions between the board and the project director which limit the director in managing the program.

Members of the boards are often prominent members of society and can play a key role in fund raising, particularly in promoting and recruiting persons to donate the cost of a limb (Rs. 3000 or U.S. \$60). From the long list of donors included in the FINS annual report, it is clear that these donations are an important source of revenue. Among some religious groups in Sri Lanka there is a tradition of making a charitable contribution to honor a dead relative or to celebrate an important event, such as a marriage or a birthday. Through publicity and direct contact with potential donors by some board members and other persons dedicated to the aims of the program, donations to FINS are increasing. The FINS strengthens the link between the limb recipient and donor by encouraging the limbuser to write a thank you letter to the donor and enclose a picture.

The Galle facility closed for about six months in late 1992 and early 1993 because of problems with the board. A new board was elected and the facility is back in operation. While it is unfortunate that the previous board had difficulty, the fact that Colombo FINS stepped in indicates its ability to oversee the whole program and make changes when required.

3.2 Management and Administrative Capacity

The management of the Jaipur Foot Program is under the direct control of the executive director. She has eight years experience with the organization and is clearly a strong, talented and able leader.

The Colombo facility prepares quarterly activities reports for the USAID grant. The reports are based on information supplied by the four facilities. The reports are complete and submitted on a timely basis. The only problem is with timely reporting from the Jaffna facility, where delays are caused by the on-going "civil commotion" and the disruption of normal communications between Jaffna and the rest of the country.

There appear to be frequent supervisory visits by the executive director to the other facilities (limited in the case of Jaffna). Staff from the other facilities make frequent visits to Colombo for supplies, training or other purposes, thereby providing additional

opportunities for discussion of program and personnel requirements and future planning.

As described in chapter 2, the number of staff members at each facility varies considerably in proportion to the work load and capacity of the facility. There is a full complement of administrative staff at the Colombo facility. However, administrative staff is limited at the Kandy facility and several members of the board have assumed much of the responsibility for the daily operations of the facility. The Galle facility is managed by the Colombo facility and has almost no resident administrative staff. Fortunately, members of the board are actively involved in the daily operations of the facility.

The evaluation team inspected patient records and daily work logs. Although we did not verify numbers from log to monthly report, we are satisfied that the logs are conscientiously maintained and contain all the information necessary for compilation of complete and accurate monthly and quarterly reports. Each patient has a simple record card. Each facility maintains a monthly log which provides the following information. A copy of the monthly report is forwarded to the Colombo FINS.

- a. Case number (consecutively numbered beginning with the start of each fiscal year, April 1 through March 31);
- b. Registration number (consecutively numbered for each new patient);
- c. Patient's name;
- d. Patient's age;
- e. District in which patient lives;
- f. Limb;
- g. Cause of loss of limb;
- h. Donor (if one is found to pay Rs. for the cost of the limb);
- i. Remarks

3.3 Financial Status

The FINS receives funds from a variety of sources. The USAID grant is the largest single source of income for the FINS, and represents over 42 percent of total income. Public donations are the second largest source of revenue, approximately 39 percent. Although public donations were significantly lower in 1989 and 1990 compared with 1988, they nearly matched the 1988 level in 1991 and substantially exceeded it in 1992. During 1992, private donations reached a high at Rs. 2.27 million. The FINS receives small grants from other donors and produces about 8 percent of annual income from investments. Over the past five years, the FINS has had a net income in each year except 1991 when it ended the year with a small loss.

The Jaipur Foot Program accepts all clients who are referred or

appear for services without regard to their ability to pay. Some patients are able to pay some or all of the cost of the services. The majority of clients are unable to pay.

The FINS has an interesting and quite successful fund raising approach. It seeks donor contributions of Rs. 3000, which is advertised as the cost of a new limb. This gives the donor the satisfaction of contributing directly to improving the life and livelihood of a specific individual and provides the FINS with a significant pool of donor funds each year. The fund raising activities of the FINS include some corporate support as well as foundation or international donor grants for specific programs, such as rehabilitation.

3.4 Rehabilitation Training and Counseling Capacity

Each amputee who is referred to a Jaipur Foot Facility or who appears without reference is given an initial examination and screening. Normally, clients must wait about six months following amputation for the limb to heal completely before they can be fitted with an artificial limb. At that time, the patient comes to a facility and stays for 10-14 days for measurement, production of the new limb, fitting, gait training, counseling and re-fitting until the patient and technician are satisfied that the limb fits as well as possible. Limbusers return to a facility as often as necessary if they experience any problems with wearing the new limb.

The FINS sees its responsibility extending far beyond limb production and fitting. It has taken up the challenge of assisting its limbusers to return to productive life. Shortly after establishing the Jaipur Foot Program, the FINS initiated a survey of the demographic/social/economic status of limbusers and their need for vocational training. Some limbusers were sent to vocational training schools with grants from the FINS. A significant group of new limbusers were unemployed although they had worked prior to their amputations. The FINS established a revolving fund to provide interest-free loans to help limbusers start new businesses.

The revolving fund has grown over the years with donations from several donors, beginning with a Rs. 1,000,000 grant from World Vision in 1988. Other major donors include the Paul Hamlyn Foundation and The Hedley Roberts Trust of the United Kingdom and Dikonia of Sweden.

The revolving fund offers interest-free loans in amounts of Rs. 1,000 to 10,000, repayable over 20 months after a three month grace period which enables the loan recipient to begin the business. Some recipients needed additional funds to expand their small businesses and requested second loans from the FINS. After a meeting of the FINS staff with all loan beneficiaries, the group

urged the FINS to make second loans, but with a 12 percent annual interest charge. Each loan recipient has a guarantor (usually a wealthier person in the village) who can exert some pressure on the loan recipient to meet payments. In some cases the guarantors have repaid the loans. Overall, the revolving fund has an 87 percent repayment rate. Some loan recipients have not only paid off their loans, they have made small donations to the revolving fund out of gratitude for the assistance they received.

The FINS has six project officers (all limbusers) stationed around the country to evaluate candidates for loans, monitor existing loans and organize periodic meetings of loan beneficiaries to provide training in basic accounting for small shop owners, teach new agricultural techniques, and to listen to any problems of the beneficiaries. (See Appendix F for the location of and areas covered by each project officer.)

The FINS also provides special educational grants to children of limbusers for school fees, books and transportation. Funds for these grants are included in donor grants. Similarly, the FINS provides emergency disaster grants to limbusers, for example, if a roof of the house caves in and immediate repair is essential. One of the FINS project officers examines each case and makes a recommendation for support.

For vocational training, the FINS refers limbusers to government vocational training centers; most are accepted. The training is provided free of charge by the government. The government also provides necessary tools and equipment (carpenters tools to a carpenter or a sewing machine to a tailor) to the trainee so that person is ready to begin work. The FINS provides funds, if needed for living expenses of the trainee during the training period, a living allowance for the trainee's family during the trainee's absence, and follows up with a loan from the revolving fund to help the trainee get established in business.

Each year in early December, the FINS organizes a one-day party in Colombo for revolving fund beneficiaries with a mid-day meal, a present for everyone and a musical program. This year, the FINS plans to have an exhibition of products made by the beneficiaries which will be open to the public. The exhibition will not only be a means of generating income; it will help demonstrate to the public the quality of merchandise produced by the limbusers.

Chapter 4 - Other Sources of Prosthetics and Orthotics

There are few sources of prosthetic and orthotic services available in Sri Lanka. Persons with sufficient funds go to one of the limited number of private practitioners in Sri Lanka or abroad for services. Persons with limited funds have limited choices, including the Jaipur Foot Program. Other choices include the following sources of services.

4.1 Ministry of Defense

The Army Workshop in Colombo has been in operation for nearly one year. The workshop appears to be fairly well equipped; however, there will be a shortage of space once all 20 technicians are trained. The chief prosthetist received training and/or experience in Colombo, Japan and Indonesia. Of the 20 technicians currently on the staff, five have been trained, all by the chief prosthetist. Target production at present is 6 limbs per week by the five trained technicians. Delivery time is 3-4 weeks. The workshop currently has a backlog of 500 cases. The workshop has provided 150 devices from Taiwan and has provided approximately 200 limbs to members of the military. Although the workshop has the technical capability to make orthopedic braces, they receive no referrals for them. They construct a laminated type socket with a firm foam plastic (local pelite substitute) inner liner. They use a Jaipur-style foot of their own manufacture and are developing a foot design of their own. Socket-foot connection is by pylon.

4.2 Ministry of Health

The Ragama Rehabilitation Hospital orthopedic workshop provides services to the civilian population only. The government provides funds for staff salaries and for the buildings and maintenance. The orthopedic workshop, however, relies on donations for all materials for production of limbs and braces. The workshop received a \$24,000 grant from the World Health Organization which provided enough materials for five years and some 1,900 patients. Unfortunately, those materials have been used up. Because of lack of materials, the workshop is not currently making permanent prosthesis. The workshop is producing a very small number of temporary prosthesis with plaster sockets, orthopedic shoes, aluminum braces for polio victims and aluminum reinforced leather spinal braces.

The chief orthotist/prosthetist was trained at Colombo General Hospital in orthotics and prosthetics as well as physio-therapy. He has been accepted for additional training in orthotics and prosthetics in Japan during 1994. He has nobody to supervise. The facility is authorized to fill five vacancies, 1 carpenter and 4 orthotic technicians. The facility could not function in any case because it has no materials components or machine tool supplies (saw blades, drill bits, sanding cones, etc.)

The Colombo General Hospital Orthopedic Workshop is a government facility for both civilians and military. This old facility has more than adequate space for its staff of about 30 persons. The equipment is very old but most of it is operable. They are quite capable of fabricating a wide variety of orthopedic braces and artificial limbs but suffer from a shortage of some materials (laminating resins and sheet plastics) and machine supplies (similar to the government facility at Ragama). The shortages have caused them to temporarily halt fabrication of BK prostheses and to fabricate their AK sockets of wood.

Chapter 5 - USAID Role

5.1 Monitoring of Current Grant

Monitoring of the grant to Colombo FINS by USAID is done by a capable Sri Lankan projects officer in the Projects Office. She appears to have excellent working relations with the FINS staff and board members. Monitoring consists of reviewing monthly, quarterly and annual progress and financial reports; frequent telephone or personal contact with FINS staff; and periodic visits to the FINS offices in Colombo, Kandy and Galle. The FINS project is only one of many in her portfolio. She indicated that monitoring the FINS project is one of the least time-consuming for her because the FINS is well organized and well managed, causing few problems for USAID.

5.2 Management Burden on USAID

The FINS project takes limited USAID staff time, mainly that of the project monitor, the controller for voucher approval, and occasional time of other staff who are involved in preparing and approving the grant agreement and annual budget approval.

USAID has reduced its financial management burden by contracting with a Sri Lankan firm, Lanka Asia Management Systems Company, to review all vouchers and check on source and origin requirements for purchase of equipment. The contract covers all of the USAID PVO Co-Financing Project grantees, some 23 at present. After the firm receives the voucher from USAID, it normally completes the review within three days and returns it to the USAID controller for approval. Once approved, USAID sends a request to the Regional Disbursing Office in Bangkok which prepares a check and mails it to FINS. This whole process takes about four weeks to complete.

5.3 Potential for Future Financial Support.

It is our understanding that USAID and the Colombo FINS office have already initiated discussions about a new grant agreement. USAID has funds available for grants to private voluntary organizations in Sri Lanka from funds generated from the sale of U.S. foodstuffs under the P.L. 480 program.

One possible form of future assistance would be a donation to the Colombo FINS by USAID for an endowment fund. If properly structured, this should reduce considerably future USAID monitoring and financial review of the funds. A grant for an endowment fund has considerable appeal since the Colombo FINS already has an endowment fund established and has received donations from a variety of sources for the fund. A USAID grant should not be viewed as support for an endowment in perpetuity. Rather it should be looked upon as a time-limited (5-10 years) grant to enable the Colombo FINS to expand its programs now and help it to attract other donations.

After reviewing the current grant document, the team has several suggestions for the preparation of any future grant agreement.

a. Personnel cost categories should be separated into administrative, consultants/contracted services and direct services (including physiotherapists and in-workshop supervisor/management). The 1991 proposal and grant agreement did not seem to have a clear separation of personnel costs projections. For example there is an "administrative" component showing in the "production" detail and a "technical staff" component showing in the "salaries"

b. The line item "Strengthening Management Capacity" should be explained and detailed more adequately.

c. The "Research" line item needs more detail.

d. The training aspect of the grant seems to be significantly behind schedule, probably both in terms of planning and fund expenditures. We realize that significant training (mostly ad hoc style) has taken place but since there are significant funds still available (and an on-going need) it seems wise to devise a plan for spending those funds during an extension period. A more formal education training program (with as much written instruction material as is possible) is needed to serve both present and future needs at FINS and other organizations in Sri Lanka. This would be a huge but very worthwhile task. Perhaps Mr. Singer could be recruited for a 1 or 2 year period to help with development and presentation of such a formalized curriculum. Significant long-term vision, commitment, and action are needed in the area of training.

Chapter 6 - Future Sustainability

The Colombo FINS was established in 1831 and has survived and prospered for over 160 years. Its sustainability is unquestioned. The issue is really how USAID can assist the Colombo FINS to expand the Jaipur Foot Program to meet the current and future needs of amputees and their families in Sri Lanka

6.1 Future Demand for Services

There are no studies providing accurate estimates of the numbers of amputees in Sri Lanka. The original proposal and grant agreement, as well consultant reports, all use a figure of 30,000 amputees. This figure was included in a 1980 report so the number is not only old, it fails to account for the thousands of victims of the domestic conflict over the past decade.

Since the average limb lasts from one to three years, the demand for limb replacement and repair will rise steadily in the future. For a limbuser, the second, third or fourth limb are just as essential to performing the functions of daily life and livelihood as the first limb.

6.2 Financial Resources Required

The three year USAID grant increased the FINS budget significantly in an effort to expand the productive capacity of the organization. As the FINS now expands its production and serves an increasing clientele, it will require a larger budget for staff, training, materials, replacement or upgrading of equipment, machinery and facilities.

6.3 Staffing and Training Requirements

Each of the four facilities currently has a nearly full complement of staff. As production expands to meet a growing demand for limbs and other services, there will be a need for increased staff. The FINS faces competition from government agencies and private sector organizations for technically trained personnel. A continuing problem is losing technicians to government facilities because of salary and pension benefits. This problem is not easily solved, although increased pay for technicians would help.

There appears to be a tendency to recruit technician trainees almost exclusively from the lower education levels. That approach is fine for the personnel who are used just for fabrication of a limited range of items, but the future Mr. Kumarapalas and future instructors probably need to be recruited from the national diploma of technology (NDT) level of education. Front line supervising orthotists and prosthetists need to exist at all facilities/branches and they need to have both a professional status and theory base adequate for Sri Lankan work to take its

rightful place on the world stage of orthotic/prosthetic science. We recommend that the FINS seriously consider how it will help develop that upper level of technical leadership and supervision for orthotic/prosthetic service in this country. The FINS is focusing on low cost designs rather than western style technology but that does not mean that it can therefore get by with a lower level of technical education. On the contrary, as Dr. Selhi has said so eloquently, simpler designs actually require smarter, more sophisticated technical insight.

There will be a continuing need for staff training, especially for technical staff as new production procedures and methods are introduced and facilities expand their production capacity.

6.4 Future Production

Production of limbs will have to expand in the future if the Jaipur Foot Program is to approach the total needs of amputees in Sri Lanka. The need for replacement limbs will rise rapidly in future years and could account for the full present productive capacity of the four workshops. At present it is impossible to determine with certainty when the on-going domestic conflict may be resolved. Until it is, the number of amputees will continue to grow rapidly.

There is some additional production capability at the existing centers to serve future increases in demand. The Galle workshop is in such cramped space at the moment its production capability can be increased only marginally. The new Kandy center has ample workshop space at present and could be expanded easily in the future as demand for limbs rises. The Colombo workshop is crowded but plans are already underway to build a new building on the compound for additional workshop use. The authors were unable to assess the capacity of the Jaffna workshop.

6.5 FINS and Other Sources of Prosthetic and Orthotic Services

Unless conditions change significantly, the FINS Jaipur Foot Program will continue to be the major source of limbs, counseling and rehabilitation services for the amputees of Sri Lanka. The government hospitals, the military and the private sector will likely continue to supply limited numbers of limbs.

Since both the Colombo General Hospital and the Rehabilitation Hospital orthopedic workshop at Ragama have workshop space, equipment and trained technicians, both could increase production quickly if they had materials & supplies (and staff in the case of the Ragama facility). Although government facilities cannot receive support under the PVO Co-Financing Project, there may be other ways in which USAID might be able to provide support. At Colombo General Hospital the major requirements for rapid acceleration of limb production are the following:

1. Polypropylene thermoplastic sheet material of 1/8", 3/16"

- and 1/4" thickness;
2. Materials such as polyester resins and fibrous lay-up materials (Dacron stockinette, Dacron felt, polyvinyl alcohol, etc.);
 3. Knee-shin set-ups;
 4. Machine tool supplies.

The situation at the Rehabilitation Hospital orthopedic workshop at Ragama is more problematic and any support would need to be contingent on hiring staff.

6.6 Colombo FINS as an International Training Center

There is a growing demand for technical training for persons in many developing countries which have either begun Jaipur Foot production or are beginning to consider such a program. The Colombo FINS has already provided training for a technician from Bangladesh. The Colombo FINS may be an excellent candidate to serve as an international training center. It offers a number of advantages: English speaking staff, trained technicians and excellent workshop manager and hostel facilities (currently in need of upgrading). Sri Lanka offers ease of entry without a difficult visa, few currency exchange problems, and good air transportation. USAID has recently received an inquiry regarding the training of Liberian technicians prior to initiation of a Jaipur Foot project.

The Colombo FINS would benefit in several ways. It would provide an additional source of income. It would stimulate the Colombo FINS to prepare detailed training, counseling and production manuals for the international trainees which would be useful for the Sri Lankan program as well. It would enable the Sri Lankan program to share its knowledge and accomplishments with many other countries.

Chapter 7 - Principal Conclusions and Recommendations

7.1 Conclusions

- 7.1.1 The Colombo FINS and its three branches constitute a sound, well organized and well administered, productive organization serving a critical need for the disabled people of Sri Lanka, making it possible for them to return to useful and productive lives.
- 7.1.2 While there are other organizations in both the public and private sectors providing limbs to selected individuals, the FINS is the largest provider of limbs to the poorer economic groups, many of whom would likely be unserved in the absence of the FINS.
- 7.1.3 The demand for prosthetic and orthotic services is likely to grow significantly in the future, especially as long as the "civil commotion" continues. The need for replacement limbs and repairs will also grow and may soon tax the current production capacity of the FINS and the other producers in Sri Lanka.
- 7.1.4 The FINS is unlikely to utilize all of the funds provided by USAID under the current three year grant (May 31, 1994). This appears to be a result of optimistic estimates of the work that could be accomplished within a three year time period, rather than any design or implementation defects.
- 7.1.5 The FINS has an excellent record in raising funds from individuals and the private sector and has far exceeded the usual 25 percent contribution required by USAID for its matching grants.
- 7.1.6 The need for bracing is probably 4-5 times greater than the need for prosthetics and the total need is likely to continue.
- 7.1.7 Not all lower limb prostheses or orthoses are equal in terms of labor cost or component. Different levels of complexity or cost as well as change should be trackable from report data. The FINS reporting systems could be improved to track this important data. Appendix E is an example of a services report matrix which would give more appropriate detail.
- 7.1.8 The two facilities operated by the government, Colombo General Hospital and Rehabilitation Hospital orthopedic workshop at Ragama have facilities, equipment and staff which could be utilized to quickly increase production of limbs to meet current and future demand. They lack funds

for materials and staff training.

- 7.1.9 The Colombo FINS could serve as an international training center.
- 7.1.10 The Kandy center is overly dependent on volunteer support from members of the board for the administration and management of the center and lacks a strong paid administrator.
- 7.1.11 The board of directors as now constituted holds back development of professional staff.

7.2 Recommendations

- 7.2.1 USAID and the FINS staff should begin now to review each line item of the grant budget to determine what funds will remain by May 31, 1994 and prepare a revised budget for a "no cost extension".
- 7.2.2 USAID should seriously consider a new grant to the FINS for an additional period of three to five years to further expand productive capacity to meet the likely demand, enhance staff capabilities through training, supply materials, machinery and equipment, and upgrade the hostel facilities to make them more accessible to patients.
- Alternatively, USAID should consider a grant for an endowment fund for the FINS of sufficient size to yield an income roughly comparable to that which it receives under the current USAID grant.
- 7.2.3 The FINS needs to develop a long-term training plan and begin recruiting the future leadership for the workshops. If possible, Mr. Robert Singer should be hired for an extended period of 1-2 years to assist the FINS. He could be especially helpful if a decision is made to establish an international Jaipur Foot training center at Colombo FINS.
- 7.2.4 USAID should explore possible assistance to the existing government facilities producing limbs to develop a plan to assure adequate stocks of supplies and equipment, and even machinery. This would enable these facilities to assume a larger role in meeting the growing requirements for prosthetics and orthotics. Strengthening existing facilities will be more cost effective than developing new facilities. This cannot be done under the PVO grant and other USAID funds appear to be limited. USAID might explore whether the two government civilian orthopedic facilities could become affiliates of the Colombo FINS and thus eligible for support.
- 7.2.5 USAID might consider making a future grant to the FINS on a "challenge" basis, thereby encouraging the FINS to make greater efforts to raise funds privately.
- 7.2.6 A future grant from USAID should consider funds to increase orthotics production, especially to increase production of polypropylene braces. This could include provision of pneumatic cast saws and possibly additional ovens.
- 7.2.7 A more detailed reporting matrix, such as the one

included as Appendix E, should be considered by the FINS to provide Colombo FINS and its branches with better information.

- 7.2.8 USAID and the Colombo FINS should explore the potential for establishing an international Jaipur Foot training center and include sufficient funds in the next grant if warranted. A first step might be to hold a workshop in Colombo for representatives of all Asian countries to explore in detail the need for an international training center and the likely demand for training within the region.
- 7.2.9 The Colombo FINS should consider establishing separate space at each workshop and separate trained technicians to deal with the growing numbers of repairs. This would mean less disruption of the normal production routine and provide faster service for those needing repairs.
- 7.2.10 To continually add new enthusiasm and ideas, the boards might consider limiting the number of terms for any individual in a specific position.
- 7.2.11 There is a need for the Colombo FINS and its affiliates to support and develop a strong professional staff. The Kandy center, in particular, should have a qualified paid administrator.

APPENDIX B

PERSONS CONTACTED

USAID

Ms. Thusitha Dharmawardena, projects officer
Mr. Terrence Liercke, acting director
Mr. Stanley Stalla, acting chief, projects office

FRIEND IN NEED SOCIETY

Colombo Branch

Ms. Jeanne Samuel, project director, Jaipur Foot Program
Mr. Sunil Abeyratne, treasurer
Mrs. Merlyn de Alwis, honorary secretary
Mr. M.D.G.B. Basnayake, assistant workshop manager
Mr. Krishan Jayawardena, board member
Ms. Malini, accountant
Mrs. E. Mathea, vice-chairman and board member, Jaffna branch
Mr. Kumarapala, workshop manager
Mrs. Kulaseeli Perera, president
Mrs. Manel Senatillake, administrative secretary
Prof. Sherifdeen, board member
Dr. Weerasekera, board member

Kandy Branch

Mr. G.S.N. Peiris, honorary treasurer
Mr. T.R.R. Rajan, vice president
Mrs. Jeeva Rajan, honorary secretary

Galle Branch

Mr. Jagath Dahanayaka, board member
Mr. Lal Uduge, board member
Mr. Udaya Amarasekara, board member

MINISTRY OF HEALTH

Dr. Joe Fernando, permanent secretary
Mr. Perera, manager, Orthopedic Workshop, Colombo General Hosp.
Mr. Gomez, supervisor, Orthopedic Workshop, Colombo General Hosp.
Mr. Harsha Perera, chief of orthopedics and prosthetics, Ragama
Rehabilitation Hospital

MINISTRY OF DEFENSE

Brig. Fernando, director, Army Workshop
Capt. Wickramanaya, staff officer, Army Workshop

LANKA ASIA MANAGEMENT SYSTEMS CO. (PVT) LTD.

Mr. Hiran Molligoda, finance/administration manager, USAID/PVO Co-
Financing Project

APPENDIX C

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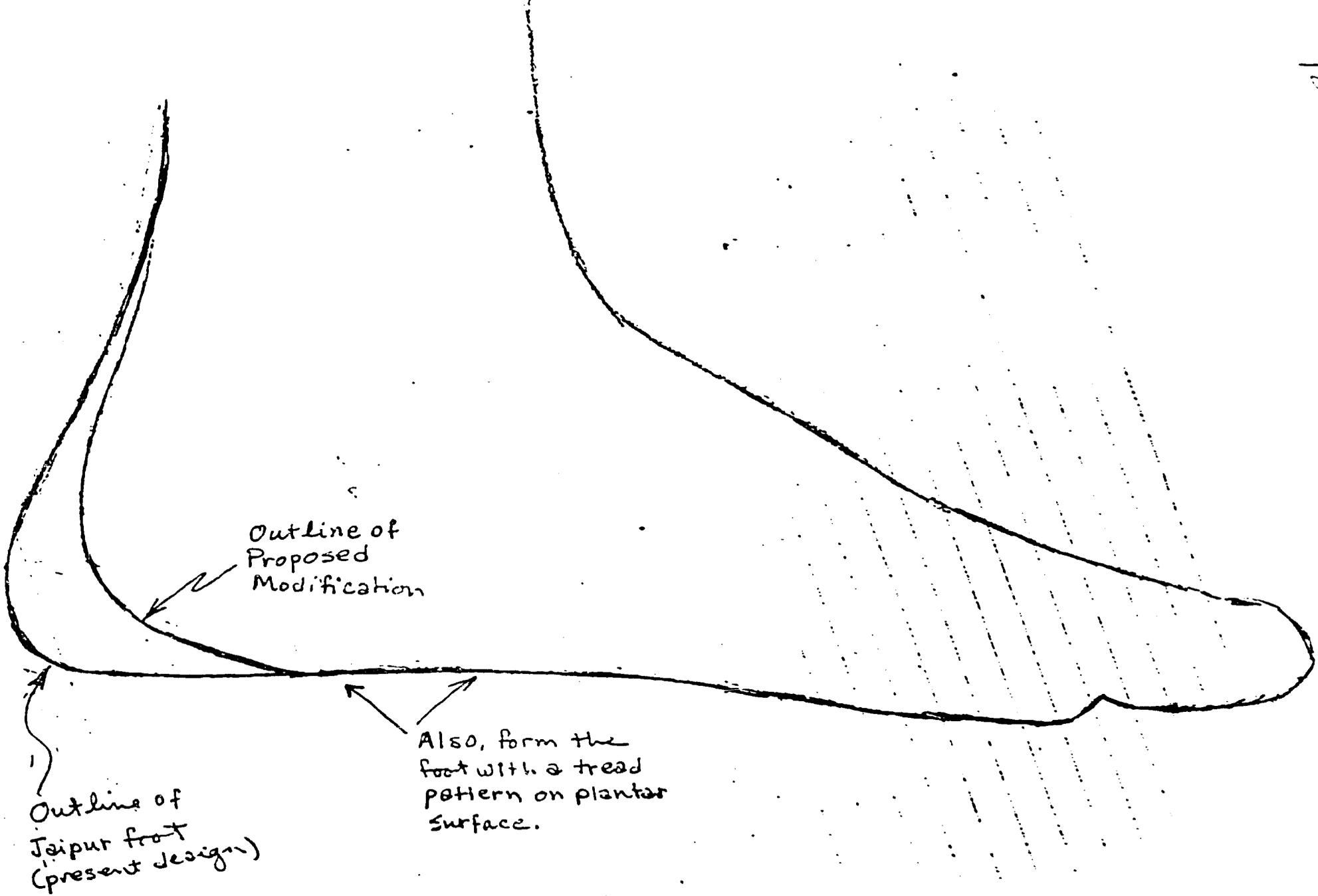
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APPENDIX D
SUGGESTED MODIFICATION OF THE JAIPUR FOOT



Outline of Proposed Modification

Outline of Jaipur foot (present design)

Also, form the foot with a tread pattern on plantar surface.

- Carlson
- Kumarapala
Sep. '93

APPENDIX E

DRAFT REPORTING MATRIX

Number of Devices Supplied

Month: _____

| <u>Type of Device</u> | <u>First Device</u> | <u>Complete Replacement</u> | <u>Socket Replacement only</u> | <u>Repair</u> |
|-------------------------------|---------------------|-----------------------------|--------------------------------|---------------|
| Prosthesis (artificial limbs) | | | | |
| Hip dislocation | | | | |
| Above knee/transfemoral | | | | |
| Knee disarticulation | | | | |
| Below knee/transtibial | | | | |
| Ankle disarticulation/Symes | | | | |
| Other | | | | |
| SUB-TOTAL | | | | |
| Orthoses (orthopedic braces) | | | | |
| Orthopedic footwear | | | | |
| Shoes/as part of brace | | | | |
| Ankle-foot | | | | |
| Metal and leather | | | | |
| Thermoplastic | | | | |
| Knee-ankle-foot | | | | |
| Metal and leather | | | | |
| Metal and thermoplastic | | | | |
| Hip-knee-ankle | | | | |
| Spinal orthoses | | | | |
| Other | | | | |
| Other | | | | |
| Other | | | | |
| SUB-TOTAL | | | | |
| Crutches | | | | |
| Tricycles | | | | |

PROJECT OFFICERS - AREAS OF OPERATION

AREA 1 - Mr Somasiri Atcanayake

AREA 2 - Mr Sujith Silva

AREA 3 - Mr N W V Chandradasa

AREA 4 - Mr B V D Kumarasinghe

AREA 5 - Mr T Seneviratne

AREA 6 - Mr B A Premaratne

