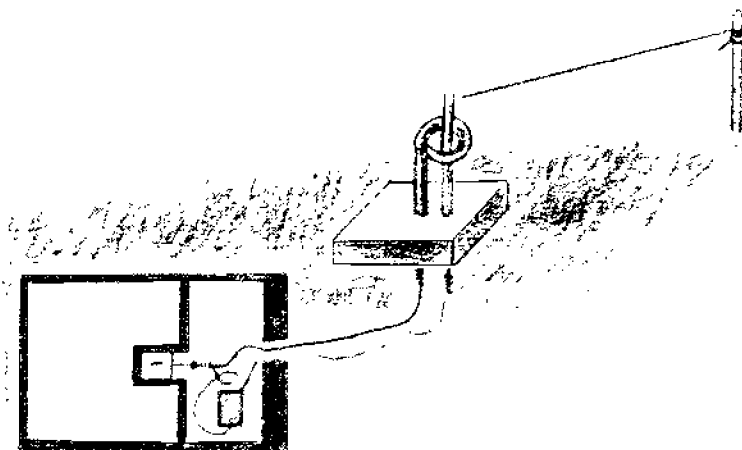


Improvised booby-trap using mousetrap and grenade:
(Source: Chinese Training Manual for Khmer Rouge)



Improvised electrically-initiated booby-trap using tripwire:
(Source: Chinese Training Manual for Khmer Rouge.)



V. MEDICAL CARE

Cambodia today has the highest percentage of mine amputees of any country in the world. Surgeons in Cambodia perform between 300 and 700 amputations a month because of mine injuries.⁶² As a result, one out of every 236 Cambodians has lost one or more limbs after stepping on a land mine. By comparison, there are 60,000 amputees in Vietnam (out of a population of 75 million) who were crippled by the Vietnam War or by leftover debris such as unexploded mines, booby traps or artillery shells. This means that one out of every 1,250 Vietnamese is handicapped as a result of the war.⁶³

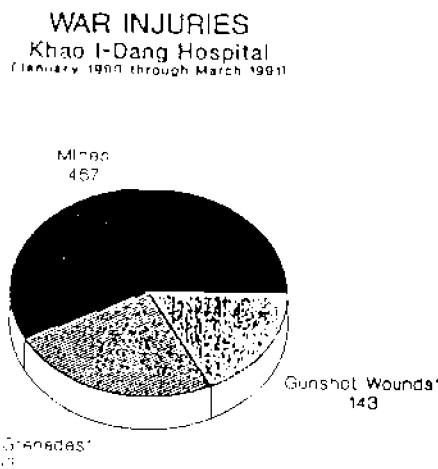
According to Khmer and foreign surgeons working in Cambodia, for every mine victim who makes it to hospital another will die in the fields or on the way to hospital. No one, however,

⁶²Surgeons in Cambodia perform between 300 and 700 amputations a month because of mine injuries. Given the duration of the war, the figure of 36,000 may actually be an underestimate.

⁶³See D. McClellan, "New limbs for Viet amputees," *San Francisco Examiner*, May 12, 1991, p. A1. Angola's 28-year-old war produced perhaps 20,000 mine amputees (out of a population of 9.1 million). See Africa Watch, *Angola: Violations of the Laws of War by Both Sides*, April 1989. Official estimates put the number of war amputees in Mozambique at between 1,000 and 8,000 (out of a population of 14.9 million). In Uganda where war, infections, and improper medical care have created a high number of disabled, there are 15,000 amputees (out of a population of 16.6 million). See "Planning for Improved Orthopaedic and Prosthetic-Orthotic Programs in Uganda and Mozambique," a report prepared of the U.S. Agency for International Development, U.S. Department of Public Health and Human Services, June 26, 1989.

knows exactly how many have died, nor is it likely that anyone ever will. No institution has kept records of war-related deaths among civilians. Moreover, Cambodians, being mostly Buddhist, burn their dead.

What has become increasingly clear, however, is that land mines have injured (and possibly killed) more combatants and noncombatants alike than any other weapon in Cambodia's 12-year-old civil war. In Khao I-Dang Hospital, the largest hospital for Cambodian refugees in the Thai border camps, 57 percent of those treated for war wounds from January 1990 through March 1991 had been injured by land mines.



Includes wounds inflicted inside camps as a result of disputes or accidents as well as in conflict areas.

In Cambodia, the percentage of mine injuries compared to other war-related injuries was the same or slightly higher. Dr. Chuon Bunthorl, the director of the 329-bed provincial hospital in Battambang, told us that just over 50 percent of the war wounded who arrived at the hospital in 1990 were land mine victims. In a civilian hospital near Siem Reap, of the 60 patients with war-related injuries, 45 of them were injured by mines.

A visitor to Cambodia cannot help but be struck by the number of amputees; they are everywhere. For instance, in only a few hours travelling along Route 5, the war-torn strip of highway that connects Phnom Penh with the northwest, we saw a legless barber in a wheelchair shaving a customer under a tarp he had fashioned into a tent. Then, further on, a five-year-old boy, his crutch tucked under his right arm, stood by a bomb-blasted bridge. As cars slowed down, he thrust his cap out, angrily demanding money. In the Battambang market, three women amputees sat together on the remnants of an old cardboard box, selling fruits and vegetables.

Travelling to hospitals and prosthetic workshops in Cambodia and in the Thai border camps, our delegation interviewed Cambodians, both combatants and noncombatants, who had been injured by land mines, as well as Khmer and foreign doctors, to document the prevalence and types of mine injuries. Most importantly, we wanted to know what happened to civilian mine victims from the moment they stepped on a mine until their discharge from hospital. Using a set of pre-determined questions, we asked them to describe their ordeal to us. Among the questions we posed to them were the following: What were they doing at the time they encountered the mine? Had others in their family or village been killed or injured by mines? What sort of first aid, if any, did they receive immediately after the blast? How much time passed from the point of injury to their arrival at the hospital? Did they receive anaesthetic during surgery? We also asked mine victims still in hospital about their prospects for receiving a prosthesis and physical therapy and being reintegrated into society.

Our observations are based on their responses and interviews with medical and relief personnel--some of whom have worked with Cambodian mine victims for the past six years.⁶⁴ We also gathered data on war injuries, including mine-related

⁶⁴In addition to Cambodian medical personnel, we interviewed physicians working with the International Committee of the Red Cross, the Swiss Red Cross, and Médecins du Monde.

wounds, and amputations from six hospitals⁶⁵ inside Cambodia and Khao I-Dang Hospital, the largest surgical hospital in the Thai border camps. We were unable to collect data from every hospital in Cambodia either because of limited access to hospital records or because records had never been kept. However, the hospitals that provided data were, by and large, those which were in or close to combat zones and thus treated a large number of mine injuries. We believe this data, coupled with our interviews, provides an accurate picture of the scope and nature of mine deaths and injuries in Cambodia.

The Health Care System

To understand the quality of medical care available to Cambodian land mine victims, it is first necessary to take a brief look at the history and development of Cambodia's health care system since the Khmer Rouge took power in April 1975. Within days of their arrival in Phnom Penh, the Khmer Rouge expelled the ICRC from the country and closed its borders to all foreign medical agencies. Over the next three and a half years, the Khmer Rouge destroyed Cambodia's entire health care system--equipment, supplies, and buildings.⁶⁶ In its place, they constructed small regional health clinics, and staffed them with ill-trained cadres from within their ranks who were selected by political rather than medical criteria. These "health workers" scorned modern medicine and instead practiced traditional medicine, but their understanding was based more on superstition and folklore than a genuine knowledge of herbal remedies.

By early 1979, when the Vietnamese ousted the Khmer Rouge from power and installed a puppet government in Phnom Penh, Cambodia had one of the most wretched health care systems in the world. Of the 450 medical doctors in Cambodia before

⁶⁵The six hospitals were located in Kampot, Takeo, Mongkol Borei, Battambang, and Kampong Chhnang.

⁶⁶See L. McGrew, "Health Care in Cambodia," *Cultural Survival* 14, no. 3:77.

1975, only 45 remained, and of those, 20 left the country after the Vietnamese invasion.⁶⁷ Large sections of the population were suffering from tuberculosis, malaria, ankylostomiasis, respiratory, and infectious diseases--all of which were compounded by malnutrition. There were virtually no nurses and a severe shortage of medicines.

Since 1979, in spite of the civil war and a paucity of international aid, the Phnom Penh government has made some progress in reconstructing and rehabilitating the health delivery system in Cambodia. But this development has only taken place in recent years. In 1983, for instance, a team sent to Cambodia by the Food and Agriculture Organization found that the health system was "disastrous." Medical supplies were "far below acceptable standards, even for poor developing countries, and the situation is nearing a deep crisis....Adequate medical treatment is not available because of a general lack of basic medicines, a severe shortage of medical doctors, and absence of basic medical supply and coordination."⁶⁸

Although many of these deficiencies were remnants of the Khmer Rouge era, they also reflected Vietnamese policies that gave politics precedence over health. "Those few Cambodian doctors and nurses who did exist were constantly forced to neglect their duties to go to political study sessions," wrote British journalist William Shawcross.⁶⁹ "There was daily indoctrination, and there were frequent longer courses. Patients died as a result." The Phnom Penh government welcomed aid agencies willing to build more clinics and hospitals, useful propaganda for the regime, but were less enthusiastic about non-Communist health professionals training local medical personnel.

⁶⁷See E. Mysliwick, p. 42.

⁶⁸FAO report is quoted in W. Shawcross, *Quality of Mercy*, p. 399.

⁶⁹See W. Shawcross, p. 400.

As of mid-1991, Cambodia had 10,000 hospital beds--a ten-fold increase since the Khmer Rouge period--and more than 500 Khmer physicians, as well as over 7,000 nurses, medical assistants, and midwives. However, international health assessment teams have routinely found them to be poorly paid, poorly trained, and isolated from the mainstream of public health and primary care developments in other parts of the world. Given the poor quality of healthcare, the impact of mines is all the more appalling -- if returning refugees get hurt, what facilities will be available to treat them?

Government health officials point to the national expanded program on immunization, started in 1986, as one of their most notable achievements in health care. The program has fully vaccinated 60 to 70 percent of children in Phnom Penh and 12 of the country's 19 provinces.⁷⁰ There are wide gaps, however, in the program's coverage because medical personnel cannot enter certain conflict zones.

For most Cambodians, access to health care is a luxury. In 1990, only 53 percent of the population had access to health services.⁷¹ Often those in greatest need live in rural areas where living conditions foster illness and disease. Cambodia's infant mortality rate (IMR) now stands at 133 per thousand, placing it in UNICEF's worst category, and, in many parts of the country, the physician/patient ratio may reach as high as one per 30,000 or

⁷⁰See N. Hirschhorn, L. Haviland, and J. Salvo, "Critical Needs Assessment in Cambodia: The Humanitarian Issues," a report to the U.S. Agency for International Development, April 1991, p. 6.

⁷¹See United Nations Development Program, *Human Development Report 1991* (Oxford: Oxford University Press, 1991), p. 123. The UNDP ranked Cambodia 140 out of 160 countries for 1990 based on its human development index, a set of indices used to measure such things as health delivery, income distribution, life expectancy at birth, and education.

more.⁷² Fifteen percent of tested blood carries hepatitis. Epidemic diseases, such as malaria, tuberculosis, diarrhea, and dengue fever, are widespread, and, according to an AID assessment team that visited Cambodia in April 1991, "good evidence exists that preconditions for [an] upsurge of these diseases are present."

Today there are several foreign medical relief organizations operating in Cambodia.⁷³ For the most part, these groups confine their activities to a particular hospital or health problem. Since 1981, the French Red Cross has supported a national tuberculosis control program. World Vision maintains a large children's hospital in Phnom Penh. And across the city, at the Calmete Hospital, doctors with Médecins du Monde are constructing a new surgical unit.

Since 1979, the ICRC has set up surgical teams in Kampot, Pursat, and Mongkol Borei primarily to treat the war injured. Because of the large number of war wounded, the ICRC have begun first-aid training programs at local health clinics. In October 1990, the ICRC, in conjunction with the Ministry of Health, revived the National Blood Transfusion Center in Phnom Penh. Early in 1991 the blood bank's mobile units began collecting blood in various parts of the city by offering donors a meal and a Red Cross T-shirt.

Such progress notwithstanding, our delegation found that blood was in critically short supply in nearly every hospital we visited in Cambodia. For land mine victims, the availability of blood can often mean life or death. We also found that hospitals in or near conflict areas were in serious need of X-ray film, anesthetics, antibiotics, latex gloves, and surgical supplies.

⁷²By comparison, in many parts of Sudan, which along with Cambodia ranks as one of the world's most impoverished countries, the physician/patient ratio may reach as high as one per 24,000.

⁷³Among them are Médecins du Monde, World Vision, Médecins Sans Frontières, and several teams from Red Cross societies.

Electricity is also in short supply in hospitals throughout Cambodia. In provincial hospitals, electrical power is often available only in the evening from 6:30 to 10:30 p.m. During emergency treatment, backup generators are used to run the operating theaters. However, they frequently break down or cannot be operated because of the lack of diesel.

Many of Cambodia's provincial hospitals do not have indoor plumbing in the wards, and water must be brought to the hospital in five-gallon jerry cans. The plumbing in operating and treatment rooms has deteriorated. Patients who are ambulatory must bathe and drink from outdoor pumps. The facilities for sterilization, disinfection, and surgical instruments are very limited, resulting in many infections after surgery.

Mine Injuries

Cambodian hospitals are poorly equipped to deal with war injuries. The Mongol Borei hospital, located just south of Sisophon, was so crowded with patients when we visited in April 1991 that many of them were sleeping outside on cots. Most of the patients in the surgical wards were victims of mine blasts. They lay on bamboo mats or propped themselves up against soot-black walls, as flies swarmed about their bandaged stumps. Many suffered from chronic anemia or malaria.

Our host, Dr. Chris Giannou, a Canadian surgeon with the ICRC, took us through the surgical wards. Dr. Giannou had spent most of the 1980s as a war surgeon and hospital administrator in war-torn Lebanon. "In Lebanon you became an expert in the cacophony of war," he explained. "You could distinguish the sound of incoming and outgoing artillery--whether it was an 80- or 160-millimeter mortar, or a Howitzer, and so on--and the sound of the damage it made. So, as a surgeon, I treated lots of shell and bullet wounds because mines weren't such a problem there. But here it's different..."

Moving from cot to cot, he stopped next to the bed of a woman named Praing Chhoeun. Three days earlier, she had stepped on a mine while herding her cows and spent 12 hours in an oxcart and on the flatbed of a truck before she made it to the

hospital. Dr. Giannou carefully lifted back her sarong and revealed a badly infected stump. "Now if that had been caused by shrapnel from an artillery shell, you would do a simple debridement, clean it up, no problem," he said. "But these mines drive dirt and bacteria as well as the shrapnel up into the tissue. So infection spreads fast. Then there is the effect of the shock wave, which causes blood vessels to coagulate and thrombose well up the leg. So I end up having to amputate much higher up than where the wound appears."⁷⁴

The work of Dr. Giannou and other surgeons in Cambodia is further complicated by the use of plastic shrapnel or casing on land mines. Once embedded in tissue or bone, these dark, frog-green plastic fragments, unlike metal fragments, are difficult to detect on X-rays, and therefore must be located visually and then extracted.⁷⁵ However, they are often overlooked during the surgical removal of foreign matter and dead tissue from the wound. And if the fragments are not removed, they can later cause serious infections, including osteomyelitis, an infection of the bone cortex and marrow.

Protocol I of the 1981 U.N. Convention, known as the "Protocol on NonDetectable Fragments," states: "It is prohibited to use any weapon the primary effect of which is to injure by fragments which in the human body escape detection by X-rays."⁷⁶ Do all four parties in the Cambodian conflict intentionally use mines containing plastic shrapnel or plastic casing because they know that these elements cannot be detected

⁷⁴See also R. Fasol, S. Irvine, and P. Zilla, "Vascular injuries caused by anti-personnel mines," *Journal of Cardiovascular Surgery* 30: (1989):167-172.

⁷⁵Descriptions of the shrapnel given by Dr. Giannou and others suggests that the PMN-2 mine is the major source of such secondary infections.

⁷⁶See A. Roberts and R. Guelff (eds.), *Documents on the Laws of War* (Oxford: Clarendon Press, 1982), p. 475.

on radiographs? Or do they prefer to use mines constructed with plastic because they are lighter and thus easier to carry? Or do they simply accept whatever mines are sold or supplied to them? Whatever the answer, all four warring parties have violated if not the letter than the spirit of the protocol, as have the manufacturers and suppliers of these mines.

Dr. Giannou and other surgeons in Cambodia and in the border camps in Thailand have found that if amputation is necessary when treating lower-body mine injuries, it is usually required below the knee. In 1990, for instance, 63 percent of all lower-limb amputations performed on patients injured by mines were below the knee in hospitals in Kompot, Pursat, Takeo, and Khao I-Dang. Some victims of mine blasts suffer injuries above the waist. Fishermen who snare small anti-personnel mines in their nets frequently suffer upper limb and facial injuries. Similarly, combatants and non-combatants alike frequently suffer upper body injuries when they attempt to defuse or move mines. Peasants are most likely to step on mines when they are looking for firewood, herding animals, working in the fields, fishing, or simply walking to another village. The internally displaced are particular at risk when they venture out of their camps to forage for food and firewood.

By April 1991, when we visited Cambodia, 186,000 villagers had been displaced in 9 provinces as a result of the war. Most of them were living in camps in the northwestern part of the country where the fighting had been most severe. During our visit to the ICRC hospital in the village of Mongo Borei, we interviewed several patients who had stepped on mines near camps for displaced persons. Doctors there also told us that three boys had recently been killed when they returned to their village from a displaced persons camp. According to the doctors, at midnight on February 19, about 150 KPNLF soldiers entered the Sala Kraw camp, located 8 kilometers north of the provincial capital of Sisophon. Before storming the camp, soldiers launched rocket-propelled grenades into the camp, killing nine civilians, including two children aged 4 and 10, a pregnant woman, and a

75-year-old man, and wounding 15 others.⁷⁷ Inside the camp the soldiers reportedly destroyed a recently constructed school house, torched hay and rice stores, and stole several motorcycles.

Days after the KPNLF raid, camp residents, terrified that their attackers would return, sent a young boy back to their village three miles away to see if it was safe to return. But he stepped on a mine and was killed. When residents learned of the boy's fate, they dispatched two older boys to the village. They, too, were killed by land mines.

For the past four years, Dr. Johannes Schraknepper, a surgeon with the Swiss Red Cross in Takeo province, has attended to thousands of victims of mine blasts. In his experience, soldiers who are wounded by mines usually have better access to transport and thus arrive at hospital much sooner than civilians. He characterized the situation for noncombatants as follows:

For civilians, finding transportation is a big problem. If they're lucky, someone--most likely a relative or friend--will find them wounded in the field and will apply a tourniquet. It stops the bleeding, which is good, but too often they forget to loosen it, which causes problems later. So the wounded person will lie in the fields, or maybe in his house, while someone goes looking for transport, which is usually a horse or motorcycle taxi. Now, first they have to find it, which isn't always easy, as it may require riding a bicycle five miles away to another village. In the meantime, the family had better have enough money, because usually the rule is no cash, no transport. All of this may take 6 to 12 hours or even an entire day. Then it may take several more hours to get to the hospital.

⁷⁷The ICRC promptly protested the attack in a letter from its delegation chief in Cambodia, Jean-Jacques Frésard, to KPNLF president Sou Samn, dated February 21, 1991.

Once the injured reach hospital, they often find that there is little or no food, except what relatives bring. In some hospitals, if meals are provided, war veterans are given first priority.⁷⁸ Even though health care in Cambodia is supposed to be free, Cambodian doctors and nurses regularly charge their patients for services, medicines, and intravenous fluids. If blood is needed, the patient's family must find donors and pay them. Lach Pem, a 55-year-old farmer who stepped on a land mine in 1987 and eventually fled to a refugee camp in Cambodia, said that he wasn't sure which was worse: losing a leg or knowing that his wife had gone to relatives and friends to beg for money to pay for his hospital care.

In mid-1991, a Cambodian doctor earned about \$13 a month, and a nurse or laboratory technician earned about \$7 a month. Yet, it takes about \$40 a month just to survive. As a result, many Cambodian health professionals spend as little time as possible at their official posts and either work in private practice or run a business, such as a pharmacy, to sustain their families.

The following accounts are drawn from our interviews in April 1991 with civilians who were injured by land mines:

■ **Nean Pok**, a 20-year-old woman receiving care in the Mongol Borei hospital, told us of her ordeal, as her husband listened, stopping her from time to time, to add details to the account. They had been married six weeks earlier. On April 6, 1991, at about 12 p.m., Nean Pok stepped on a mine, possibly a PMN-2, while gathering firewood at the edge of the forest near Phrum Prey Kpors, a village 30 kilometers southwest of Mongol Borei. Hearing the explosion, her husband rushed to the scene. He fitted a tourniquet around her left leg, carried her to the side of the road, and flagged down a moto-cyclo, or motorcycle taxi. He took her first to a local first-aid post and, seven hours later, to the hospital where surgeons amputated her lower left leg. Nean Pok and her husband were able to identify several mines from

⁷⁸See N. Hirschhorn et al, "Critical Needs Assessment in Cambodia: The Humanitarian Issues," p. 8.

photographs. There were no mine markers near the village, and mines had killed or injured several villagers and farm animals.

■ **Chang Song** is a 38-year-old fisherman from the village of Phrum Chek. He is married, has four children, and regularly fishes on a one-kilometer long lake near his home. Early in the morning on March 30, 1991, Chang Song and several other fishermen had spread themselves out, at ten-meter intervals, along the lake's shoreline. Just as he was about to toss his net into the water, he heard a loud explosion and remembers collapsing to the ground in pain. Other fishermen picked him up by his clothes and carried him back to his home. Four hours later, he was taken to a local first-aid post and fitted with a tourniquet. At 5 p.m. that evening, he arrived at Mongol Borei hospital. Because his wounds were so heavily infected, surgeons chose to amputate his right leg above the knee.

■ On April 6, 1991, at approximately 3 p.m., **Ken Kop**, a 42-year-old mother of seven children, was following her usual riverside route to work in the rice paddies when she stepped on a mine. Her brother carried her in his arms to her house, where he and other relatives hastily made a sling out of a hammock and bamboo pole and rushed her to the district hospital. Ken Kop's right leg was so badly mutilated, that the attending doctor immediately amputated it above the knee. The operation was carried out without anaesthesia. Later that evening, she arrived at the provincial hospital in Battambang, where the wound was closed under general anaesthesia.

■ At sunset on April 11, 1991, **Praing Chhoeun**, a 56-year-old farmer, stepped on a mine as she was taking her cattle out to graze for the night. It was a trip she made every morning and evening. After the explosion, Praing Chhoeun apparently went into shock and recalled very little of what took place the rest of the day. Her husband, who had been with her in hospital since the accident, told us that he took his injured wife by ox cart to the Sosphean district infirmary. The following day, he arranged for a truck to take them to Mongol Borei hospital. When asked if the countryside around their village was mined, Praing Chhoeun nodded and then added that no one knew exactly where they were

buried. "I had always worried about stepping on one," she said, "but then the cattle had to be grazed."

■ Six-year-old **Chok Chuon** lost her left leg when she jumped on a mine while playing near a railway line on the morning of April 6, 1991. Her mother heard the explosion and rushed to the railroad tracks and carried her home. According to Chok Chuon's mother, there were no markers warning of the presence of mines. Another relative fixed a tourniquet to Chok Chuon's left leg and then, with the help of others, carried her in a sling to the main road, 15 kilometers away, where they flagged down a moto-cyclo. At 2:30 p.m., she arrived at the provincial hospital in Battambang and, two hours later, went into surgery, where doctors performed an above-knee amputation.

■ Fifty-five-year-old **Lach Pem** and his wife are "displaced" Cambodians who arrived at the Site II border camp in March 1991. They are originally farmers from the Moug District in southern Battambang province. Years earlier, on September 9, 1987, Lach Pem stepped on a land mine while gathering firewood in the forest. (In 1984, his eldest son, Chhim Pang, had stepped on a mine while fighting with the KPNLF.) Five of Lach Pem's friends carried him in a hammock-sling to Moug District Hospital. The trip, on foot, took 20 hours. After his amputation, he developed a serious infection and had to remain in hospital for three months. During that time, he spent 15,000 riels, or about \$150, on medications. After leaving the hospital, he bought crutches and returned to work in the rice paddies. Soon after his arrival at Site II, Lach Pem learned that during his journey to Thailand, another son, a noncombatant like his father, had stepped on a mine and was in the Moug District hospital.

Social and Psychological Aspects

Cambodia is an agrarian society where muscle power means survival.⁷⁹ Nearly every aspect of a Cambodian's life is set to the rhythm of rice cultivation--the flooding, the planting, the replanting, and harvesting. It is very labor intensive, requiring the participation of every man, woman, and child. And a person who is physically disabled can become a burden--someone who eats but produces nothing.

Most amputees leave hospital with little hope for the future. There are no rehabilitation centers, and Cambodia has no laws to protect amputees against discrimination or exploitation. Female amputees are less desirable as wives because they cannot work in the fields, and male amputees are not allowed to become Buddhist monks. Many amputees drift to Phnom Penh or larger towns and become beggars or petty criminals.

In most peasant cultures, the village and extended family are almost synonymous, nurturing a solidarity that sustains both the individual and his or her community through difficult times. In Cambodia, however, 20 years of famine, genocide, foreign occupation, and civil war have undermined the communalism that once existed. In Mongol Borei hospital, Dr. Chris Giannou recalled the plight of a young child who had become paraplegic after stepping on a mine:

At first, the family didn't know what to do. So they abandoned him at the hospital because there was nothing left to expect from him. He stayed alone at the hospital for four months before they finally came back and got him. But the mere fact that they

⁷⁹Lighty-eight percent of Cambodia's population lives in rural areas, 3 percent of which are involved in agricultural production. In the developing world, only five other countries--Bhutan, Burundi, Burkina Faso, Nepal, and Oman--have a larger percentage of rural inhabitants. See United Nations Development Program, *Human Development Report 1991*, p. 13-137.

abandoned him...and we didn't know if they were going to come back or not. And they probably didn't know! In a Third World society, in a peasant culture, that's a sacrilege, it's unthinkable...only in Cambodia.⁸⁰

Amputees often find that they cannot compete with the able-bodied for farm land, even though they can still supervise the farming or actually till the fields themselves. In 1988, the Phnom Penh government formally abandoned its policy of collective farms and began a program of land reform. Land was divided based on the number of active adults in the family. As a result, families with amputees received less land or less valuable land than families without amputees.

According to Handicap International (HI), the Belgian-based organization that runs 13 prosthetic workshops throughout Cambodia, Khmers often do not hire amputees, even after they've received training in a particular skill. Maite Idiart, HI director in Phnom Penh, estimated that only 20 percent of Cambodia's amputee population will find work.⁸¹ The Jesuit Refugee Service (JRS) has started a small program to counteract this problem in a village near Phnom Penh. If the project is successful, there are plans to extend it to other villages that have a high percentage of amputees. Small no-interest loans are given to poor families to help them expand an existing business or start a new one. In turn, the families are contractually obligated to hire a disabled person who will be trained by JRS.

During our visit to Thailand, we met with Abbot Mony Chenda at the Buddhist temple in Site II, the largest of the Thai border camps. In addition to his role as a religious leader in the camp, Abbot Mony runs a pottery workshop for abandoned children and the physically disabled, many of whom are victims of mine blasts. We asked the abbot if it was true that young boys

⁸⁰Interview, Mongkol Borei, April 13, 1991.

⁸¹Interview, Phnom Penh, April 9, 1991.

(only men can become Buddhist monks) who were amputees could not become a bonze, or monk. "It is a rule that a bonze who is ill cannot go more than three days without collecting alms," he said. "So a boy or man who is amputated would be a burden to his fellow monks." He went on to say that Buddhist teaching in Cambodia emphasized inner and outer "wholeness," so an amputee could not be ordained as a monk.⁸²

Cambodian amputees often appear stoic. In interviews, they speak frankly and deliberately about the events leading up to the moment when they stepped on the mine and their subsequent journey to hospital. But to give details, especially to a Westerner, about how they are "coping" mentally with their trauma would seem inappropriate. Some may feel that they are somehow responsible for their suffering because of the Buddhist concept of "karma."⁸³ A Swiss surgeon remarked that he had seen amputees, particularly young women who had been horribly disfigured, put "a mask over their despair" in the company of relatives and friends. Several refugee workers reported that Khmer amputees had a high incidence of alcoholism and suicide, which is unusual in Buddhist culture.⁸⁴ But, to date, no one has examined these problems and compared their incidence to the population as a whole.

⁸²Interview, Site II camp, Thailand, April 17, 1991. Such religious attitudes toward the physically disabled are not confined to Theravada Buddhism; they can also be found in many Christian religions.

⁸³This same response has been seen among Cambodians refugees living in the United States who either experienced torture or witnessed atrocities under the Khmer Rouge. See R.F. Mollica, G. Wyshak, and J. Lavelle, "The psychological impact of war trauma and torture on southeast Asian refugees," *American Journal of Psychiatry* 144 (1987):1567-1572.

⁸⁴See, for example, P. Carey, "Cambodia's Unending Agony," p. 32, and N. Hirschhorn, L. Havviland, and J. Salvo, "Critical Needs Assessment in Cambodia: The Humanitarian Issues," p. 36.

Treatment and Rehabilitation

Cambodia has a very limited institutional ability to deal with the disabled. Children with polio, congenital learning or emotional disorders, or disabilities like blindness cannot be cared for, and many of them are abandoned at hospitals and orphanages. By its own laws, the Phnom Penh government is supposed to provide the disabled with a monthly pension, but relief agencies report that these payments are often paid in a single lump sum soon after the accident or never paid at all.

The Ministry of Social Action is responsible for the care of the disabled in Cambodia. But because of budgetary restraints, the lion's share of the work is done by administrators and technicians with Handicap International (HI) and the American Friends Service Committee (AFSC). In 1982, the two groups began to support Cambodia's first prosthetic workshop in Phnom Penh, where amputees are fitted with artificial limbs. Since then, they have established 12 more workshops throughout the country, where expatriates fit prostheses and train Khmer technicians. HI has also launched a two-year training program for nursing students in physical therapy at the nursing college in Phnom Penh.

Despite these valiant efforts, the number of artificial limbs they turn out (1,300 a year) falls far short of the demand. Only one in eight amputees receives an artificial limb, and most of them are soldiers. At the present rate it will take over 25 years to handle the existing waiting list of mine victims. By law, the Ministry of Social Action is required to fit soldiers with artificial limbs before civilians. After discharge from hospital, soldiers, especially higher ranking officers, are often transported individually or in groups to the prosthetic workshops. Amputees in the military hospital in Ssophon, for example, are taken 70 kilometers to the prosthetic workshop in Battambang, or even as far away as Phnom Penh.

Civilians, on the other hand, are discharged from hospital and left to fend for themselves. Even though they may have heard about the workshops from fellow patients or hospital staff, they often opt to return directly to their villages rather than pay the extra expense. Many are not even aware of the advantages of

prosthetic devices. Back home, a few will fashion limbs out of scraps of wood and metal. (One amputee in a displaced person camp near Sisophon even converted an old artillery shell casing into a prosthesis.) But most amputees will grow accustomed to their crutches and, as time passes, simply keep postponing the trip to the workshop for financial or other reasons.

In Cambodia, prosthetic devices, like health care, are supposed to be free. But with inflation (in 1988 one dollar brought 150 riels; in 1991, 650), some Khmer technicians have begun supplementing their salaries (4,000 riels a month) by charging patients for artificial limbs. Although HI/AFSC disapprove of this practice, they realize that a "fees-for-service" attitude is universal in Cambodia and if they tried to prevent it in their workshops some of their best technicians would leave at a time when they are struggling to meet demand.

By using local materials (wood, leather, and locally processed rubber), HI/AFSC avoids the expensive fittings and complex moving parts required for more sophisticated artificial limbs. HI/AFSC can produce a below-knee prosthetic device for \$12, and an above-knee device for \$20. They can also open a workshop for less than \$1,000. Unlike other prosthetic techniques, the production of their artificial limbs requires no power, crucial in a country like Cambodia where both electricity and diesel fuel for generators are in short supply. In contrast, a highly sophisticated, computer-based system in Vietnam, called the "Seattle Foot" by its American inventor, can produce a prosthetic device for \$190, but it is virtually useless without power.

The HI/AFSC system, however, has its drawbacks. Leather, which is used for the knee socket, gradually loses its shape as it gets wet, and must be replaced every two years. In the past year, HI/AFSC has found quality leather more difficult to obtain as Cambodian leather wholesalers, encouraged by the government's relaxation on export controls, have begun quietly selling their best-quality leather to Thai businesses. Some amputees complain that the device's rubber foot breaks within a year and that the rigid wooden limbs, particularly on the above-knee devices, are cumbersome and unsuitable for work in rice paddies.

By the end of 1991, the ICRC plans to supplement III/AFSC's work by opening orthopaedic workshops in Phnom Penh and Battambang.⁸⁵ ICRC's goal is to produce 1,000 prostheses per month for all of Cambodia. The new legs will be lighter, stronger, more flexible, and more comfortable than the traditional models. The ICRC also plans to work independently of the Ministry of Social Action by hiring local technicians and paying them at ICRC-established rates. This should increase productivity dramatically but could potentially make the entire prosthetic industry dependent on outside funding.

Cambodian amputees in the Thai border camps appear to fare better than their counterparts at home. According to III, which operates workshops in eight camps, nearly every amputee who wants a prosthetic device will eventually get one. Since 1984, III has trained over 70 Khmers in the camps as prosthetic technicians and physical therapists. Another relief organization, the Catholic Office for Emergency Relief and Refugees (COERR), runs three vocational training schools for camp amputees who can learn watch repair, carpentry, typing, radio and TV repair, welding, and engine repair. The logic behind offering these skills is based on the presumption that after repatriation to Cambodia, many, if not most, amputees will eventually drift to the cities in search of work.

According to Ky Ka, the Khmer director of the COERR training school in Site II, amputees in the camps may be better off there than in Cambodia but they have also suffered from years of dependency and boredom.⁸⁶ As a result, he says, a disproportionate number of mine victims have become petty criminals and alcoholics. Many amputees become despondent and

⁸⁵ The Cambodia Trust, an Oxford-based charitable organization, also plans to open a prosthetic clinic in Calamete Hospital in Phnom Penh. In addition, the Vietnam Veterans of America Foundation is finalizing a program that would help provide prosthetics for 79 injured Cambodian veterans living in a camp across the Tonle Sap River from Phnom Penh.

⁸⁶ Interview, Site II, Thailand, April 17, 1991.

frequently skip training classes because they see no future in which they can actually use their new skills.