AC/Houei Sai

REPORT ON THE NUMBER AND SITUATION OF VIENTIANE'S SERIOUSLY HANDICAPPED: IMPLICATIONS FOR PREVENTION AND REHABILITATION PROGRAMS.

UNDER THE AUSPICES OF THE VIENTIANE ORTHOPEDIC CENTER, MINISTRY OF VETERANS AFFAIRS AND VICTIMS OF WAR, VIENTIANE LAOS.

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Acknowledgments.

The survey team was composed of six students and one IVS volunteer. Because the students returned to school shortly after the survey work was completed, most of the statistical analysis and report writing fell to the IVS volunteer. However, a draft of the report was submitted to the students for their revision. So responsibility for the final draft of the report is shared by all members of the survey team.

Dr. Seuth Sayphrarai, in charge of the Vientiane Orthopedic Center, and Professor Ghislain Moureaux, WHO rehabilitation adviser at the Center, provided encouragement and administrative support for the survey team. Other Center personnel to whom the team is indebted are: Captain Souphan Intharat for considerable encouragement and for helping devise the questionnaire forms; Drs. Nguyen Nhuan and Amone Wouthy for medical explanations of various handicaps; Mr. Soukanh Saygnasit, Mr. Loge Giatsay, and Mr. Kham Law for assistance in the actual survey work, and Miss Boun Heng Khammongkhoun for typing and mimeographing services. Mr. Soukanh Saygnasit also helped with collating the survey data.

Special mention goes to the bus-driver, Mr. Ja Le, who besides his appointed duty of driving the survey team to various locations, spent considerable time explaining the survey's purpose to Vientiane people contacted during the survey: sometimes the survey personnel's language was too much of the school and not enough of the countryside. Further, Mr. Ja Le, on his own initiative, helped the survey team describe the Orthopedic Center's services to people with locomotor handicaps. His concern for handicapped people and Lao development is laudatory.

The survey would not have been possible without the cooperation of the Chao Khoueng, Chao Muongs, and Nai Bans. The same holds true for the leaders of the Thai Dam, Vietnamese, and Chinese communities, the individuals of those groups who were contacted by the survey personnel, and individual Lao Sung and Lao Theung people living in Vientiane. In retropect, the potentiality of the Nai Ban system for assisting survey work that must preceed development programs is impressive.

Mrs. Moureaux, wife of the Center's WHO adviser, translated the English version of the report into French. Using this as a basis, Mr. Tem, an outstanding member of the survey team, composed the official Lao version of the report. Mr. Tem's dedication to the survey project is demonstrated by the fact that he did his translation while carrying a full load of studies at the National Law School*.

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PREFACE.

Why should Lao people be concerned with rehabilitation of handicapped persons and prevention of future cases ? Two answers seem appropriate. The first comes from the viewpoint of national economics: a handicapped person is one less member of the work-force necessary for the country's development. For instance, if the disabled person is the head of a farming family, the family's farm production will probably be cut in half. Even more detrimental to the economy is a disabled soldier or civilian victim of war without a job: the Lao Government must pay full support for him and his family. The survey revealed that at least one in every 20 Vientiane families had a handicapped member, and that 60% of the handicapped men of work age (15-59) did no productive labor. There were strong indications that a higher incidence rate of handicapped persons exists in the rural areas. In addition, disabled persons in only a few of the many handicap categories for Laos are spoken of here. Given then, the large number of handicapped people in Laos and its economic implications, it is in the nation's interest to prevent further occurrences of handicaps, to physically rehabilitate those who are already handicapped, and to help them find work that they care capable of doing a period.

A second answer to the question posed is humanitarian. Our first inclination is to pity a handicapped person, and his first inclination is to be grateful for our pity. But after a while he becomes bored and frustated. He wants to do what other people do or what he himself used to do. He wishes to feel useful and lead a meaningful life. So helping

him with this task, and preventing future cases of handicaps from occuring, is a far greater service than the traditional pitiful looks and baskets of fruit.

It is with the above economic and humanitarian considerations in mind that the survey team presents its findings to the Lao Government and other interested parties.

I. PURPOSE

This report has the following aims:

(1) Reveal the number and situation of handicapped people in Vientiane city.

(2) Demonstrate the need for establishing programs to prevent the diseases and circumstances that cause handicaps and the necessity for conducting physical, psychological, and socio-economic rehabilitation of handicapped people.

(3) Offer the Lao Government and other interested parties information that will help establish these programs.

(4) Supply base-line statisics that will allow future evaluation of the programs.

(5) Suggest relevant areas that call for more precise or elaborate information than our research techniques were able to produce.

(6) Demonstrate that surveys such as the one upon which this report is based can be useful, inexpensive, and efficiently carried out without special, long-term training programs for the surveyors. Important survey work is therefore possible for most Lao ministries without the need of high-level assistance, financial or advisory, by outside sources.

II. THE SURVEY.

A. TIME AND PLACE OF THE SURVEY.

Beginning on July 5, 1972, the survey work continued until Oct. 1, 1972, and covered the entire city of Vientiane -- the Muongs of Sisattanak, Saysettha, Chanthabouri, and Sikhotabong. These four Muongs contained seventy-five villages (Bans).

B. THE SURVEY SAMPLE.

In order to locate handicapped persons, a majority of the Vientiane population was surveyed. This majority, or "population sample", consisted of ethnic Lao, Chinese, Vietnamese, Thai Dam, Lao Sung (Meo), Lao Theung, and a small group of Lao Neua refugees, all long-term residence of Vientiane City, People only temporarily in Vientiane, for example the patients at the Orthopedic Center, were not included in the population sample. Thai people were not included, due to the difficulty of locating them and determining the length of their intended Vientiane residency.

The words "Lao", "Vietnamese", etc. in this report refer to ethnic origin, not nationality. The only exception is "Lao Neua", which refers to neither ethnic nor national group, but to some Lao refugees from Sam Neua who were not on any of the Vientiane village leaders' list of residents. It should be noted that most Chinese, Vietnamese, and Thai living in Vientiane are not Lao citizens, nor do many of Vientiane's Thai Dam have Lao citizenship. As for the tribal Lao Theung and Lao Sung, the Lao Government considers them to be Lao nationals.

C. THE SURVEY METHOD.

To survey the sample population, and subsequently interview the handicapped people therein, members of the survey team obtained permission from the Chao Khoueng of Vientiane Province and the four Chao Muongs of Vientiane City to meet with the Nai Bans (village leaders) of the city and explain the survey to them. After four such meetings -- one for the Nai Bans of each Muong -- the Nai Bans agreed to cooperate with the survey. In particular, each one consented to let the survey personnel use his official list of villagers -- usually the list compiled for 1971-2 -- as a means of establishing which villagers were handicapped. In consequence, the villagers on the Nai Bans' lists constitute the Lao part of the population sample.

The Nai Ban's list was used to locate handicapped persons in the following way: a member of the survey team would read the name of each family, asking the Nai Ban if the family had anyone -- male, or female, child or adult -- who was handicapped. Each of the families with a handicapped member would then be visited by one of the survey personnel. If the handicapped person was not at home, someone else in the family would be asked to answer questions concerning him. At the conclusion of the interview, the survey team member would ask for the names of other handicapped people in the village. All names that were not of persons previously stated to be handicapped would be recorded and the persons subsequently interviewed. However, if any of these persons were later found not to be on the Nai Ban's list of villagers, they were excluded from the survey's group of handicapped persons. In this way, the percentage of villagers on the Nai Ban's list who were handicapped could be precisely stated.

The Vietnamese Nai Bans were contacted through the South Vietnamese Embassy. The survey method used for the Vietnamese was the same as that used for the ethnic Lao. As far as the Chinese, Thai Dam, Lao Sung, Lao Theung, and Lao Neua were concerned, each Lao Nai Ban was asked if any of these people lived in his village. If so, their approximate number and location were noted. Then each group, and where possible a leader and list of families for that group, was sought out by the survey personnel. For the Thai Dam, there was always a leader and list of families so the survey task was easy. However, it was necessary to go to every house of the Lao Sung, Lao Theung, and Lao Neua. Still, the small number of these people living in Vientiane simplified the task of surveying them.

The Chinese proved to be the most difficult: the Lao Nai Ban often had a separate list for the Chinese, but did not personally know many of them. Nor did the Chinese have their own Nai Bans. Hence, the survey team sub-divided the Chinese area of a given village into ten small sections and chose at random several families from each section. Members of these families were asked if they knew any handicapped Chinese people in the area. The people they named were subsequently interviewed. To facilitate communication, the Vientiane Chinese Association provided a letter of introduction.

D. FINAL COMMENTS:

Tables #1, 2, and 3 (cf. page i, and ii at the back) make the following clear:

(1) A majority of the Vientiane people in each of the Lao, Vietnamese, and Chinese ethnic groups are included in the population sample. (The survey team feels certain that most members of the remaining groups -- Lao Sung, Lao Theung, Lao Neua, and the Thai Dam -- are also include in the sample.)

(2) Assuming a yearly population growth rate of 2.4% for Laos[1], and given the 1966-7 census figure of 132,000, there are now approximately 150,000 people living in Vientiane. So the survey's sample is 77% of the total Vientiane population -- far more than enough for reliable inference from sample to whole.

(3) The Lao are easily the largest group in the sample population. The Lao Theung and Lao Neua groups are so small that they will not be treated separately in the rest of this report.

(4) 0.75% of the people in the population sample were handicapped. Point (3), concerning the population sample, applies equally to this group of handicapped persons. In the following sections of this report, the implications of the 0.75% figure will be discussed, and so will the other survey data concerning Vientiane's handicapped.

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1. "Rapport Final de la Commission pour l'Etude de la Population et du Bien-Etre Familial", Jan. 5, 1972, Vientiane, Laos.

III. RESULTS.

A. MAGNITUDE AND SERIOUSNESS OF THE HANDICAP PROBLEM.

1. Definition of "handicapped".

"Handicapped" means "a long-term physical or intellectual inability to play the social or economic role that is normal to one's society".[2] This report adheres to the above definition, but with two important exclusions: non-severe handicaps and handicaps due to disease or injury of the cardio-respiratory system, gastrointestinal system, or genitourinary system. These two sorts of handicaps are excluded because the unsophisticated techniques at the disposal of the survey team (cf. Appendix "C") would not permit the confirmation of slight handicaps and the differentiation of permanent handicaps due to, for instance, tuberculosis, heart-disease, cancer, or drug addiction, from the temporary effects of less severe illness. This is to say nothing of the problem of using Nai Bans and villagers to initially identify and locate people with such relatively "invisible" disabilities. In by-passing these types of handicaps many disabled people are excluded from this report who would be included by researchers working in the "developed countries". The categories of handicaps that are examined here consist of disabilities with respect to:

(1) The locomotor system (missing a limb, complete or severe loss of a limb's function -- paralysis, deformity, waisting -- and epilepsy).

(2) Vision (complete or severe loss of sight).

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2. There is no standard definition of "handicapped". The one here is extrapolated from a number of different sources and is probably a fair statement.

(3) Hearing (complete or severe loss of hearing).

(4) Speech (completely muted or severely stuttered speech).

(5) Intellectual functions (retardation or severe mental illness).

(6) Physical appearance (facial disfigurement -- cleft lip or palate, severe burns, etc. -- hump back, disfigurement due to leprosy).

2. Rural handicapped and city handicapped.

Graphs #1 and #2 (cf. page iii) demonstrate that Vientiane people coming from war torn rural areas -- the Thai Dam, who fled from Dien Bien Phu 18 years ago, and the Lao Sung, Lao Theung, and Lao Neua, who more recently fled from the north-east part of Laos -- have an astonishingly higher incidence of handicapped persons than the city dwelling Lao, Vietnamese, and Chinese. A major reason for this would seem to be the war:

Percent of interviewed handicapped persons who were disabled by war related causes:

	Rural: Thai Dam Lao Sung, Theung, Neua	City: Lao Vietnamese Chinese	Total
Combattants and Civilians	35.5	9.4	13.1
Combattants	30.5	7.7	10.2
Civilians	5.0*	1.7	2.9

* Authorities working in the rural areas point out that the percentage figure for rural civilians directly handicapped by the war is probably much higher than the 5.0% figure for rural people who have moved to Vientiane City.

The number of handicapped persons in Vientiane who have come from the rural areas and who were interviewed by the survey team was not large enough to warrant further statistical statements about the conditions in the rural areas. To ascertain the true extent and nature of the handicap problem there, the people in those areas, particularly the Lao Sung and Lao Theung hill tribe people, must be surveyed.

3. Incidence rate of handicapped persons.

A. <u>In Vientiane</u>.

Graph #1 shows an incidence rate of 44.8 families-with-handicapped-members per 1000 families. Graph #2 gives an incidence rate of 7.5 handicapped persons per 1000 persons. However, Graph #3, which pyramids the age-sex distribution of handicapped persons included in the survey's sample, reveals that there are almost twice as many handicapped males as females, and many fewer handicapped children between the ages of 0-4 than between the ages 5-9. After considering various alternatives, there appears to be no other way to explain this great difference than by simple omission:[3] either the survey team did not emphasize its concern for females and children enough, or the Nai Bans and villagers did not take seriously the team's concern for women and children. The latter explanation is probable because Lao women are not considered as important as men in official matters, and very young children, though truly loved by their

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3: Calculations based on graphs #3, 4, &5 and other survey data demonstrate:

(1) The percentage of female handicapped cannot be put into balance by taking into account the percentage of men who are combat soldiers. (2) There should be at most only 7.5% more children in the age 5-9 age group then in the 0-4 age group, not the 35.0% difference recorded by the survey. Graph #5 is particularly relevant to the demonstration of this last point.

parents, are not referred to as "persons" until they grow older. Further, many parents may not realize that their children are handicapped until they reach walking age, e.g. babies that contact polio before the walking age. When these factors are taken into account, it can be mathematically calculated that some 125 people in the population sample were probably handicapped in the ways under consideration but not reported as such. This would put the handicap incidence rate for Vientiane at 55.2 families - with-handicapped-members per 1000 families, and 8.6 handicapped persons per 1000 persons. Further, considering that the survey must have also missed some adult men who were disabled, it would probably be fair as well as convenient to assume a final incidence rate of:

One handicapped person per 100 persons.

Granting this incidence rate and a current Vientiane population of 150,000, there are now approximately 1500 Vientiane people handicapped in the ways delineated.

b. In Laos.

Assuming that the population of Laos is 3,000,000, and that the 1/100 rate holds for all of Laos, 30,000 Laotians are handicapped, a number equivalent to the population of Luang Prabang City. Furthermore, it has already been indicated that the incidence rate for handicapped poeple is probably much higher in the rural areas. When this assessment is coupled with the survey's exclusion of handicaps due to diseases or injuries of the internal organs (cf. III, A,1), the real number of seriously handicapped people may be triple that stated.

4. How handicapped are the handicapped? Are special prevention and rehabilitation programs warranted?

It has been shown that handicapped persons exist in appreciable numbers. But are the disabilities of most handicapped persons really so serious as to call for special prevention and rehabilitation programs? If the group of handicapped people interviewed lived and worked much like everyone else, then the answer would be negative. But in fact their life style is radically different from that of other Vientiane people. This can be indicated by comparing the per-cent of handicapped men ages 15-59 that are active with that for the non-handicapped men. ("Active" means "those currently working, training, or studying". It excludes all those men who said they did nothing or only light tasks in the house.) The chart below shows that a much greater percent of the non-handicapped are active than the handicapped:

Percent of handicapped and non-handicapped Vientiane men ages 15-59 who are active.

Handicapped men	44.3
Non-handicapped men*	98.4

* "Rapport D'un Recensement Démographie, 1 - Ville de Vientiane, 2 - Ville de Luang Prabang, 1966-67", Présenté par Mr. Sorasinh Inthavong, Ministère du Plan et de la Coopération Service National de la Statistique. "Non-handicapped" actually does include the "handicapped", i.e. should be "all Vientiane men, both handicapped and non-handicapped". But this would read clumsily as a graph heading and also might mislead the reader. Subtracting the percentage of total Vientiane men who are handicapped would only change the "non-handicapped" percentage of 98.4 by 1.0% at most. The same procedure was followed for "non-handicapped children".

A comparison of school children further reinforces the claim that handicapped people have life styles radically different from other people:[4]

Percent of handicapped and non-handicapped Vientiane children ages 10-14 currently attending school.

Handicapped children	65.0
Non-handicapped children *	80.9

Finally it might be thought that only a small "hard-core" of those handicapped people interviewed actually present a problem for economic ~~rehabilitation, and~~ that the others find work as easily as the non-handicapped. To evaluate this view, consider two groups: The "hard core" handicapped are those (1) not able to walk, or at least not able to walk without an artificial aid, (2) totally blind, (3) totally deaf, (4) totally mute, (5) mentally retarded or mentally ill, or (6) any combination of these. The "fringe" or less severely handicapped are those persons (1) crippled, but able to walk without artificial aid, (2) epileptic, (3) partially blind, including blind in only one eye, (4) partially deaf, including deaf in only one ear, (5) defective in speech, but not mute, (6) physically disfigured, or (7) any combination of these. Now, if the hypothesis that ranks the "fringe" handicapped with the non-handicapped is true, we should find the percentage of active "fringe" handicapped to be about the same as the percentage of active non-handicapped. However, the graph below shows this to be far from the case. (On the other hand, significantly more "fringe" handicapped are active than are "hard core").

4. It is unfortunate that handicapped persons were not asked about their marital status. We could have compared the percentage of handicapped persons married and the percentage of non-handicapped persons married, and thereby broadened our insight concerning a handicap's effect on one's life style.

* See footnote, page 14.

Percent of "hard core" handicapped, "fringe" handicapped, and non-handicapped Vientiane men ages 15-59 who are active.

Hard core	35.2
Fringe	49.0
Non-handicapped	98.4

It should be understood, then, that the handicapped people considered in this report are seriously disabled. If their condition -- physical, social, and economic -- is to improve, the necessary rehabilitation programs must be started or improved by the government. Programs must also be established to prevent future cases of handicaps.

5. Summary.

(1) The report concerns only a few handicap categories, and only the seriously handicapped.

(2) The report indicates that the incidence rate of handicapped persons is condiderably higher in the rural areas. It is imperative, therefore, to survey the rural peoples, particularly the hill tribe people.

(3) The large number of handicapped people in Laos, combined with the severe disabling effect of their condition, warrents the establishment of special prevention and rehabilitation programs.

B. PREVENTION OF HANDICAPS.

This section discusses prevention of handicaps in Laos and presents relevant data.

1. Handicaps: Types and Causes.

Here handicap instances are referred to instead of handicapped person. This is convenient because the types and causes of handicaps are analyzed in the following paragraphs and some of the handicapped people had more than one handicap.

Graph #7 (page vi) reveals that locomotor handicaps were more prevalent than all the other types together. Table #4 (page vi) shows that disease caused about half of all handicaps and most locomotor handicaps. But, these important facts will be considered after discussion of handicaps due to trauma and birth-defect.

Accident and war as causes of handicaps can be combined under a single heading: "trauma". Trauma was responsible for the smallest percentage of handicaps incurred by Vientiane people. Still, the number of handicaps so induced is appreciable and calls for prevention programs. The sort required are fairly clear to anyone who has spent some time in this country: better traffic control in Vientiane, better and more immediate medical treatment for the injured, and, of course, an end to the war. The last suggestion is particularly relevant to people living outside Vientiane. However, even if the war ends, many Lao people will probably continue to be maimed by war implements. This is because a high percentage of serious handicaps are due to antipersonnel mines[5] and such mines are reportedly planted in most areas of Laos. The mines are made of plastic, so they can't be detected and do not rust away with time. Unexploded bombs are also scattered over a good deal of Laos.

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5. Orthopedic Center records.

Birth defects accounted for more handicaps than trauma. However, the persons who said their handicaps were due to a birth defect might easily have been mistaken. Special research is needed to determine which handicaps were really due to birth defects and to prescribe appropriate prevention methods. Here it will suffice to mention: (1) Some reported birth defects may actually have been caused by harmful birth delivery methods -- most deliveries in Vientiane do not take place in a hospital or with medically trained mid-wives in attendance. (2) Some may actually have been disease-caused, the effects of which did not show up until some time after the disease's initial symptoms had passed. For example, a 5 month old baby gets polio, the only initial symptom of which is fever. Several months later, when it is time for the baby to walk, it doesn't and the child's parents think it has simply been born without the ability to walk. (3) The large number of mute persons (96 persons; cf. Table #5, page viii) -- most of whom were reported to have been mute since birth -- gives cause for concern: the exact causes and full extent of this handicap in Laos should be learned and the appropriate measures taken.

Disease accounted for about half the handicaps, Table #4 reveals that of all the handicap types, sight was the most affected by disease, Here too, special research is required before any more can be said of etiology or prevention, The same applies to disease inspired handicaps of the speech and hearing systems.

Disease was blamed for most of the intellectual handicap cases because interviewed relatives of mentally ill people probably guessed that of the four alternative cuases presented, disease must be the origin of mental illness.[6] Of the physical - appearance handicaps due to disease, most were caused by leprosy. The actual number of lepers interviewed, however, was small, only eleven people. There is medical aid available for these people at the Vientiane Dermatological Center.

Forty-seven percent of all reported locomotor handicaps were disease originated. The disease most responsible was probably poliomyelitis (polio):

(1) More than half of the disease inspired locomotor handicaps were characterized by a paralysis which occured before the victim had reached age five. This is typical of handicaps caused by polio.[7]

(2) Other diseases, e.g. encephalitis and Bott Disease, are responsible for only a very small percentage of children's paralysis in Laos.[8]

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6. The popular explanation blames evil spirits.
7. Figures for Asian countries show that 82.6% of all polio victims were younger than age five when the disease first struck them. Though this percentage is for the period 1955-57, before large scale polio immunization programs were implemented, it probably corresponds to the present-day situation in Vientiane and the rest of Laos, where no extensive polio immunization programs exist. The figure 82.6% was derived by averaging the percentages given for eight Asian countries (not including Laos), in "La Poliomvelite Aujourd'hui", p. 346, Chronique OMS, vol. 24, No. 7, Juillet 1970.
8. Opinion of official experts assigned to the Vientiane Orthopedic Center.

The number of those who were paralyzed by a disease before having reached the age of five constitutes 15% of all the reported handicaps. So polio is a major cause of Vientiane handicaps. For this reason, polio and its effects will receive more elaborate discussion in the following paragraphs.

Journals on poliomyelitis usually report the average annual number of new cases for a five year period. Examination of the Vientiane survey data reveals an average of 9 polio cases per year for the period 1963-7.[9] This is equivalent to an annual incidence rate of .08 polio cases per 1000 persons, and has the following implication: (1) If this rate were to hold steady, and the Vientiane population to remain a constant 150,000 persons, one could expect 240 more Vientiane people to be crippled by polio in the next 20 years. (2) Making the same stipulations for Laos as a whole, one could expect 240 more people to be crippled by polio each year, and 4,800 people within the next twenty years.[10] These figures are for severe paralytic polio. The rate for all kinds of polio -- paralytic and non-paralytic polio, total, severe, and light -- would be higher.

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9. Thirty-four interviewed children, currently in the age range 5-9, were paralyzed in at least one limb by a disease and were in the age range 0-4 at the time of the disease's onset. These are accepted as polio victims. The total number of polio victims for the 1963-7 period increases to 46 if it is taken into account that (1) the 34 children were equal to only 82.6% of all persons victimized by polio during the 1963-7 period--some people are older than five years of age when polio attacks them (cf. footnote 7) -- and that (2) a number of handicapped people were erroneously omitted from the total of handicapped persons--a number equal to 15% of the reported handicapped (cf. III, A, 3). Finally, forty-six polio victims during the 1963-7 period is an average number of 9 cases per year. The above way of deriving polio figures for Vientiane is circuitous, but necessary: the records concerning polio at most medical institutions in Laos are incomplete, and the percent of paralysis victims utilizing the Orthopedic Center is still too small for informative statistical analysis (cf. III, C, 1).

10. This is speculative: The rural areas have not been surveyed, so it is impossible to say if the Vientiane incidence rate for polio is the same or even close to that of the rural areas.

If Laos were to adopt a polio immunization program, the incidence rate of polio victims could probably be rendered inconsequential, as demonstrated by the case for Canada and Singapore:

Comparison: Average annual incidence of polio cases per one-hundred thousand persons: Canada, Singapore, Vientiane.[11]

	Canada	Singapore	Vientiane
Before polio immunization program.	25.00	4.20	8.00
After polio immunization program.	0.01	0.15	----

11. The Canada and Singapore "before" rates are for 1951-5, the "after" rates for 1966-70. The Vientiane "before" rate is for 1963-70. The incidence figures for Canada and Singapore are derived from dividing the average annual number of cases for the given periods by the country's average population for the corresponding period. The Average population for the corresponding period. The average annual number of cases were stated in "Poliomyelitis in 1971", reprinted from WHO Wkly. Epidem. Rec., No. 31, 1972. The population figures were stated in UNESCO's Statistical Year Book, 1971.

At present, only two small polio immunization programs exist in Laos: Dooley Foundation has a program for some Lao Phuan refugees relocated south of ~~Tha Deua~~, and Asian Christian Service runs a similar program near Savannakhet. There is also a colera-smallpox vaccination program in Laos, conducted by the Ministry of Public Health. This program could probably include polio immunization. Further, as each village Nai Ban maintains a list of all people in his village, it would not be too difficult to check the percentage of children -- particularly those under 5 years of age -- who were receiving the immunization. This method would be more effective than the often suggested immunization of school children, for approximately eighty percent of polio victims are struck while still pre-school age (cf. footnote 7). The congested areas of Laos, where polio is probably most prevalent -- Vientiane, provincial capitals, and refugee relocation centers -- should be the first target of any polio prevention attempt.

To conclude this discussion, it can be demonstrated that preventing polio is far cheaper than rehabilitating polio victims. First, it is probably satisfactory to immunize only those Lao people in the age range 0-19; the calculated polio incidence rate for people in this range is 3.2 polio victims per 20,000 persons. Second, in the United States the treatment of one polio victim is equal in cost to the immunization of 20,000 persons.[12] So, assuming the U.S. cost ratio to hold for Laos, a 100% effective polio immunization program would eventually cut government spending by two-thirds.

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12. Quoted from an information sheet distributed by a WHO expert.

2. Medical care and handicapped people.

Handicaps can be alleviated and in some cases prevented if the handicapped person receives medical attention early enough. At least, the medical personnel can refer the patient to a physical rehabilitation center such as the Vientiane Orthopedic Center. However, from Graph #8 (page vii) one learns that only 63.0% of the interviewed handicapped people received any modern medical attention -- examination or treatment -- for their handicap. Thirty-seven per-cent received none or only traditional medical attention -- by herb or spirit doctor. One may feel that 63% is not such a low figure for medical treatment, but handicapped people, not the rest of the population, are being considered here. Further, "examination and treatment" includes -- indeed probably almost consists of -- that given by the lowest rank of medically trained personnel. Finally, the percentage receiving modern medical aid in the provinces is probably much lower than that for the capital city.

Graphs #9 and #10 (page vii) reveal respectively the percentage of persons in each handicap and cause-of-handicap category treated by modern medicine. This high percentage for locomotor handicaps and handicaps caused by war is credited to the military's relatively efficient medical system. The relatively poor showing for the other handicap and cause-of-handicap categories can be attributed to (1) the people's ignorance of the value of modern medicine and of the medical services available to them,[13] (2) the

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13. The people are also ignorant of some handicap causes. For example, many parents of paralyzed children did not know that there exists a disease -- polio -- which has a pathology of fever eventually followed by paralysis. So they thought that their children had been paralyzed by the injection which medical personnel had given for the fever. Though paralysis may indeed be caused by a badly administered injection, the number of such cases is surely very small.

prohibitive cost of prescribed medicine, and (3) the lack of respect and concern with which patients are treated by the hospital staffs, a problem that the Minister of Public Health proclaimed in a recent Xat Lao newspaper article.

The Minister's statement gives some hope that the last mentioned problem will be dealt with by the authorities. Problem (2) calls for special investigation by the government: both free and subsidized medicine is given to the Vientiane hospitals, but some patients complain that they never receive any. Problem (1) is the most difficult to understand. Vientiane is a city. People have radios and other modes of information. The Ministry of Public Health is located here. Why then are so many Vientiane people ignorant of modern medicine and its local sources ? The lack of relevant information presented by the local media supplies part of the answer. Radio, newspaper, posters, and traditional Moh Lam teams should all be used to educate Lao citizens about modern medicine.

3. Summary.

(1) Most handicaps were of the locomotor system.

(2) Disease was the main cause of handicaps.

(3) A program to prevent polio is needed. If such a program is not conducted, we can expect 4,800 more Laotians to be crippled by polio in the next twenty years.

(4) Too few of the handicapped received medical attention. Programs must be planned to educate the public about the value of modern medicine and about the services available to them. Something must be done about the prohibitive costs of medicine, and about treating patients in a more respectful and helpful manner.

C. REHABILITATION OF HANDICAPPED PERSONS: THREE PHASES.

Rehabilitation of handicapped persons consists not only of a physical phase, but also of psychological and socio-economic phases. This is because physical rehabilitation, for example the ability to use an artificial limb, does not by itself guarantee that the disabled person will have the confidence and skill necessary to re-enter society and secure a profession.

1. Physical rehabilitation.

Physical rehabilitation concerns restoration of an impaired capacity of the body. A good example of a Lao physical rehabilitation program is the Orthopedic Center of Vientiane. Artificial limbs and braces are made there, and physical therapy is expertly conducted to enable the amputee or paralysis victim to use the artificial apparatae. Another physical rehabilitation program in Laos is a joint effort of USAID and the Lao Government: a program for drug-addiction withdrawal.

One problem for either of these physical rehabilitation endeavors is simply that few people have ever heard of them. This is particularly true for the Orthopedic Center. Many Vientiane people suffering locomotor handicaps told the interviewers that they had never heard of the Orthopedic Center or that they thought its services limited to soldier amputees. Because the Orthopedic Center's services were not well publicized, only 18.7% of the interviewed people with locomotor problems ever received treatment there. Most of these were either soldier amputees automatically referred to the Center by the military hospital, or Vietnamese and Chinese

people, or the affluent Lao. The majority of less affluent Lao handicapped derived no benefit from the Center.

The information problem is even greater in the provinces, and there are additional problems which prevent the people there from receiving treatment at the Orthopedic Center. For example, consider a young polio victim in a provincial city or a rural area. First, he and his parents will probably have never heard of the Orthopedic Center or even know that there exists a way of helping severely crippled people to walk. Second, even if they did know, they would not be able to pay for the expensive air travel to Vientiane. (Air travel is currently necessary in many parts of Laos). Finally, there is no government run facility where the child could sleep and eat in Vientiane.

The information problem in the provinces (and the city as well) could be solved by an advertisement campaign: radio announcements could be broadcast and pamphlets sent to Nai Bans, village teachers, and the Commission of Rural Affairs agents. Air transportation, the second problem, is theoretically provided for: any patient who cannot be adequately treated at a provincial hospital has the right to free transportation to a Vientiane hospital. The Chao Khouengs have been instructed by the government to give a round-trip pass to any such patient and one attendant. However, most Lao people do not know of this; officials do not inform them. The final problem, that of a place to eat and sleep, is in the process of being remedied; the World Vision organization has consented to build a small dormitory at the Orthopedic Center for young polio victims and other crippled children. It is expected that the Lao Government will supply personnel to run the dormitory. Also, Asian Christian Services has a

hostel in Nahaidio, Vientiane, where handicapped people above the age of seven and from certain areas of Laos can stay while undergoing treatment. In summary, if the existence and services of the Orthopedic Center are properly advertised, and transportation, room and board given to patients, Laos could provide adequate and equitable physical rehabilitation service to the locomotor handicapped. Indeed, Laos could have the finest physical rehabilitation service in South-East Asia.

Although the program in Laos for the locomotor handicapped has great potentiality, no facilities exist for speech and hearing therapy, for helping the blind to compensate for their lack of sight, or for improving the intellectual ability of the mentally retarded. There is no professional care for the mentally ill either. If it is not economically feasible to establish such programs in Laos, then it might be possible to arrange accomodation with the facilities of a neighboring country such as Thailand.

One last comment on the subject of physical rehabilitation: seventeen of the people interviewed were cleft-lipped. This impedes their speech and physical appearance, and usually denies them marriage and participation in general social activities. It is a very simple operation to correct cleft-lip, one that can be done in Vientiane. These people must be informed of this by the proper authorities and encouraged to seek medical help.

2. Psychological rehabilitation.

Suppose an amputee is given an articicial limb. He still feels that he is abnormal and lacks confidence in his abilities. He returns to his village, stays in his house, and accepts the pity that is his lot. Clearly his attitude must change if his life is to have any meaning, if the money

spent on his physical rehabilitation is not to be wasted, and if he is to enter a job training program and become a productive member of society.

At the Orthopedic Center there is a psychological rehabilitation section. Mr. Su Gan Saygnasit, the social worker at the Center, is in charge, and an IVSer has been assigned to work with him. The program's purpose is to demonstrate to the patients that a handicapped person can still lead a full life. This is accomplished by having the patients participate in work, study, and recreation programs. As a step beyond this, Major Kham Phouang Philavanh, head of the Center's Profession Orientation Service, advises patients of the job training programs and work opportunities open to them. Unfortunately, there is no one to encourage and advise handicapped persons outside the Center. However, the Ministry of Social Welfare may provide Vientiane with a team of social workers in the future. Part of the team's duty could be to inform handicapped persons of available physical and economic rehabilitation programs and encourage them to join such programs.

3. Socio-Economic rehabilitation.

Earlier it was stated that almost 60% of the handicapped men of work age reported themselves "inactive". But in many other countries most handicapped people study, join in social activities, and have jobs. Their success in these endeavors is due in part to special training and job-placement programs. This section will discuss the possibility of such programs for Laos and give some information drawn from Vientiane's handicapped that might be useful in planning these programs.

Although the following discussion will concentrate on economic rehabilitation, social rehabilitation is equally important, especially in Laos, where value is usually found in social relationships and activities rather than individual activities. Because a handicapped person is likely to be left out of group endeavors unless he possesses a skill that is a social demand, it is helpful, for example, to teach a blind man how to play a musical instrument, a man confined to a wheel chair how to teach adult literacy, and so on. No program for teaching social skills to handicapped persons currently exists in Laos. However, social rehabilitation is made a little easier here because most Lao handicapped people live in rural villages -- including the many rural-like villages that comprise at least half of Vientiane City -- where they know the whole community.

Concerning job training programs for handicapped people, it is not enough to have the sort of program that trains a non-handicapped person how to do a certain kind of job or skill. The program must be able to teach an incapacitated person special ways of doing a job or skill. For instance, a normal man weaves bamboo by sight and touch, but a blind man must be trained to do the same with only his sense of touch.

Job training programs current in Vientiane do not include the specialized training that many handicapped persons require. However, these programs are still adequate to train many handicapped people, and do. For example, the Ministry of Veterans' Affairs and Victims of War conducts an economic rehabilitation program for handicapped veterans. Further, special veteran's villages with land for paddy and hill rice farming are open to handicapped veterans. Another program, Ban Amone, trains civilians in certain rural skills, and sometimes trains handicapped people.

If the needs of all handicapped persons are to be met, a special program for training handicapped people must be grafted onto the already existing programs, and the latter must be expanded so as the accommodate more handicapped persons. The overall program should probably follow these quide-lines:

(1) There must be agents to seek out handicapped persons, advise them of the economic rehabilitation program, and encourage them to take advantage of these programs.

(2) Research should establish what job opportunities and enterprises are open to handicapped people in Laos: it is worse than useless to train a handicapped person for a job that he cannot get.

(3) Job training is not enough. Job-placement should also be part of the program. This includes explaining to potential employers the practicality of hiring the handicapped.[14]

(4) Follow-up surveys should be conducted to see how many of the trainees received jobs and kept them. This will allow evaluation of the program and appropriate changes.

(5) An economic rehabilitation program for the handicapped is expensive. Hence, there should probably be one overall program, jointly run by interested parties, instead of a different program for each special group of handicapped persons, for example one for the military and one for civilians.

Several tables have been drawn up from the survey results in order

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14. For instance, 35 severely disabled and 12 able-bodied Japanese workers operate their own electronics company in Beppu, Japan. "International Rehabilitation Review", Second Quarter 1972, XXIII, No. 2, P. 21. In Laos, a number of handicapped persons work successfully at the Orthopedic Center and many other places. For a list of the professions enjoyed by Vientiane handicapped people, see Table #7, page x.

to suggest which handicaps pose particular problems for economic rehabilitation, and which jobs and skills are preferable for Lao handicapped persons. Hopefully, such information will be useful in the establishment of a program like the one described above.

Table #6 (page ix) indicates that people with locomotor handicaps -- particularly amputees -- are more likely to find work than others. However, the amputees interviewed were usually former soldiers, most of whom stayed on in Vientiane because the Ministry of Veteran's Affairs found jobs for them, e.g. custom's ticket collectors at the market (see Table #7, page x).[15] This does show, though, that job-placement programs can have a favorable impact.

The lowest percentages of handicapped workers were recorded for the mentally ill and retarded, the mute, and the totally blind. On the other hand, a relatively high percentage -- 26.9% -- was recorded for a group of 26 deaf-mutes 10 years of age or more, a category not rated in Table #6.[16] Most of the deaf-mutes sold inexpensive items at small stands in front of their family's home.

Overall, the conclusion to be drawn from Table #6 is that the blind,

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15. Most of these veterans receive compensation pay from the government which is reduced when they acquire a job. Thirty-seven percent of the interviewed disabled soldiers receiving compensation pay reported that they had a job. This compares more than favorably with the 24% figure for all the handicapped men over 10 years of age.

16. The deaf-mute category is not rated separately on any of the tables. Still, we acquired information concerning a total of 30 deaf-mutes living in Vientiane. For the percentage and number of all handicapped persons in <u>each</u> of the specific handicap categories analysed in this report, see Table #5 (page viii).

mute, mentally ill, and mentally retarded pose the greatest difficulty for ecoromic rehabilitation, but the record for the deaf-mutes proves that the most severely handicapped people can play a useful economic role in Lao society.

Table #7 (page x) distributes the working handicapped by profession. It shows that about thirty-five percent of them were involved in agriculture and animal raising activities or were non-agricultural laborers. Both sorts of work are physically difficult and can be done only by those handicapped people whose locomotor ability is not seriously impaired. The somewhat lower percentage of working handicapped involved in sales and special services (about 22%) is probably what should be expected for a semi-urban area such as Vientiane. A most encouraging sign was the percent of working handicapped who were either craftsmen -- 11.7% -- or involved with making and selling handicrafts -- 5.8%. This sort of work does not always call for great physical strength or use of every part of the body. Further, it can be a life-time profession that renders good wages and the joy of creative work. Craftsman-ship is also equally important in both the rural and urban areas.

It is probable that a program combining rural crafts and skills, agriculture, and animal raising -- emphasizing those modern methods that are currently feasible for Laos -- would be particularly efficacious for the economic rehabilitation of handicapped persons.[17] The emphasis is on rural economic activities instead of urban ones because most handicapped people in Laos, like most Lao people, live in the rural areas. Sending a handicapped person to an alien city environment for work might only add psychological and social problems to the physical ones he already has.

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17. Note that a person with an artificial leg is able to plow a muddy paddy field.

One exception to this general preference for rural economic activities may exist in relation to children with severe locomotor handicaps. They can be specially educated for accounting and tele-communication jobs that call for little mobility. Such a program is currently being considered by the WHO rehabilitation adviser at the Center in conjunction with UNESCO, UNICEF, ILO, and the Lao Government.

Table #8 (page xi) distributes handicapped persons over five years of age by level of education. Only 21.5% have done more than three years of study. Recent reports -- particularly some comments in the Xat Lao newspaper made by Ministry of Education officials -- claim that most people with only three years of study do not retain their reading ability after leaving school. Coupling this with the fact that many jobs suitable for handicapped persons require the ability to read, write, and do basic math reveals the seriousness of the handicapped people's education deficiency. In consequence, handicapped children should be encouraged to study as many years as possible, and adults should up-grade their reading, writing, and basic math skills. One program for this already exists in Laos: at the Orthopedic Center, government teachers educate the young polio victims who come for physical therapy, and the adult handicapped staying at the Center are taught by Dong Dok student-teachers and the Center social worker. The social worker has received adult literacy teacher training from the Ministry of Education.

Final remarks concern the Lao cultural attitude towards handicapped people. If a man is handicapped, particularly if he is born disabled, then it is thought that an unfavorable balance of merit-demerit (boun-baab) accumulated in his former lives. From this perspective, the man's

disability is as much a part of the way things are as the mountains and rivers. One accepts and does not shun the man, but one does not think of "rehabilitating" him. Likewise, the handicapped person views himself from the same cultural perspective: he accepts his condition and does not really think of changing it. The question presents itself, then, how are officials, the public, and the handicapped person to be convinced that his disability can be and should be reversed ? The best way is probably the simplest: start a small, well run job-training and placement program, publicize statistics showing the results of the program, and invite the public, officials, and handicapped persons to visit the training center. To observe handicapped persons conducting productive lives may help people to abandon the belief that inactivity is the necessary state of the disabled person.

4. Summary.

(1) Rehabilitation consists of three phases: the physical, psychological, and social.

(2) Physical rehabilitation programs that currently exist in Vientiane must be advertised as very few Lao people know of their existence. Lack of therapy facilities for certain kinds of handicaps, for example speech and hearing loss, must be compensated either by establishing such facilities in Laos or seeking accomodations with the facilities of neighboring countries such as Thailand.

(3) A special program teaching social skills and providing job-training and placement for handicapped people should be designed, and the existing non-special programs should be expanded to accomodate more of the handicapped people who can take advantage of them.

(4) Training in rural crafts and skills, agriculture, and animal raising would be especially efficacious for the economic rehabilitation of many Lao handicapped people.

(5) Reading, writing, and math skills of handicapped individuals must reach a higher level than that currently realized. This is particularly so because many jobs practical for handicapped people necessitate reading, writing, and math skills.

All completed questionnaire forms, i.e. all the survey data is stored at the Vientiane Orthopedic Center. The present report has utilized only a small part of the total information derivable from the completed questionnaire forms. Further, names and addresses of the handicapped persons -- important for further research -- are given with the forms, Finally, maps are being prepared to show the distribution by village of Vientiane's handicapped. All researchers are invited to use these materials.

Table #1: Elements surveyed, Vientiane, July-October, 1972

Ethnic Group	No. of families surveyed	No. of people surveyed	Average no. of members per family*	% of total no. of people surveyed
Total	17,889	115,285	6.4	100.00
Lao	14,172	93,837	6.6	81.40
Vietnamese	2,419	12,289	5.1	10.66
Chinese	644	3,671	5.7	3.18
Thai Dam	501	3,965	7.9	3.44
Lao Sung	114	1,270	10.9	1.10
Lao Theung	28	183	7.0	0.16
Lao Neua	11	70	6.4	0.06

Table #2: Number of Vientiane residents surveyed in 1972 compared with the Vientiane population for 1966-7**

	Lao	Vietnamese	Chinese	Other	Total
Survey Sample 1972	93,837	12,289	3,671	5,488	115,285
Total Pop. 1966-7	99,951	9,170	5,916	--	132,255

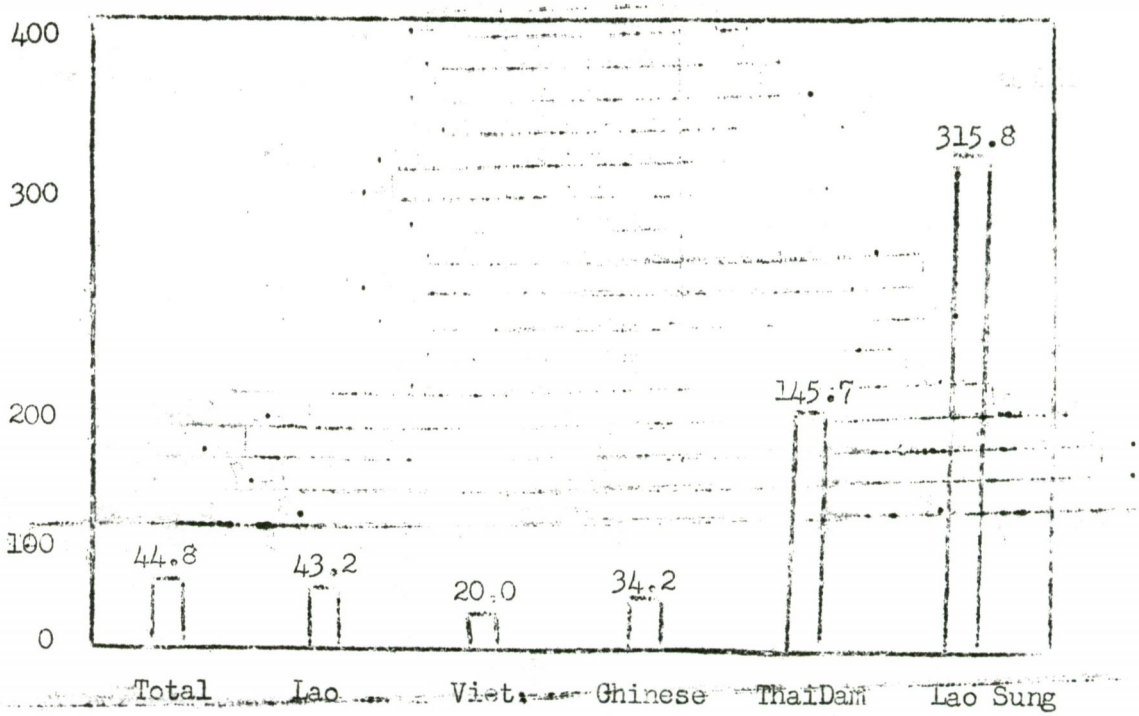
* For the Lao, Vietnamese, and Chinese, we assumed that each house contained one nuclear family. For the other ethnic groups it was necessary to ask how many families were within a given house. As the notion of "family" is understood differently by different groups, and as we had no time to do a rigorous survey on this particular matter, the above "average family size" figures may not be completely accurate.

** "Rapport, D'un Recensement Demographic, 1--Ville De Vientiane, 2--Ville De Luang Prabang, 1966-67," Presente par M. Sorasinh Inthavong, Ministere du Plan et de la Cooperation Service National de la Statistique.

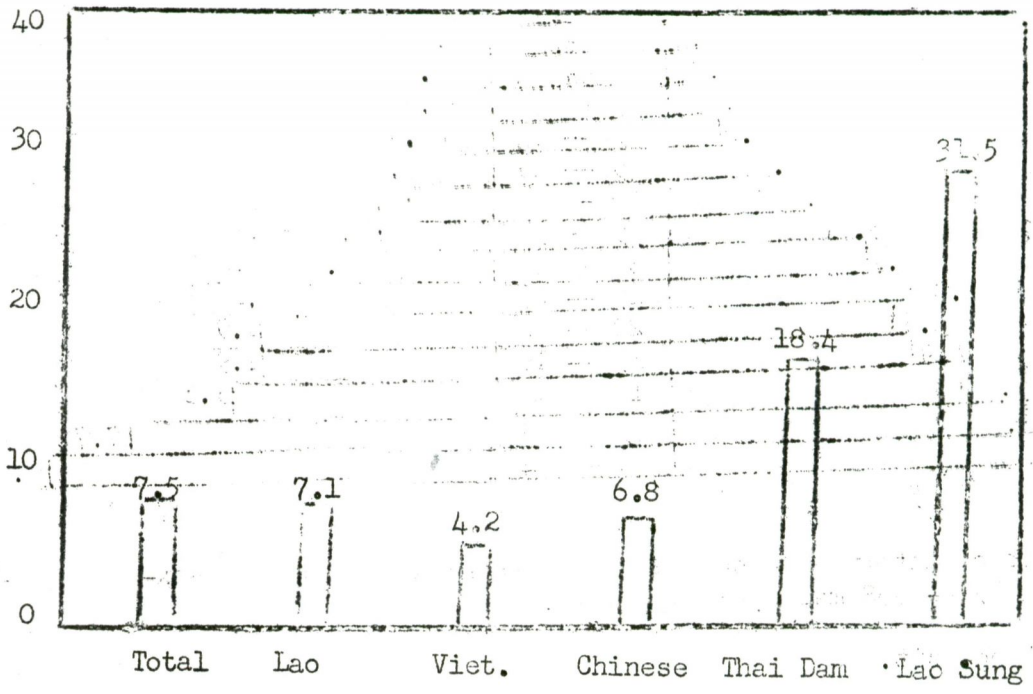
Table #3: Percent and number of total interviewed handicapped persons in each of the ethnic groups surveyed

	Total	Lao	Viet.	Chinese	Thai Dam	Lao Sung	Lao Theung	Lao Neua
Number	863	667	51	24	73	40	2	6
Per-cent-age	100.00	77.3	5.9	2.8	8.5	4.6	0.2	0.7

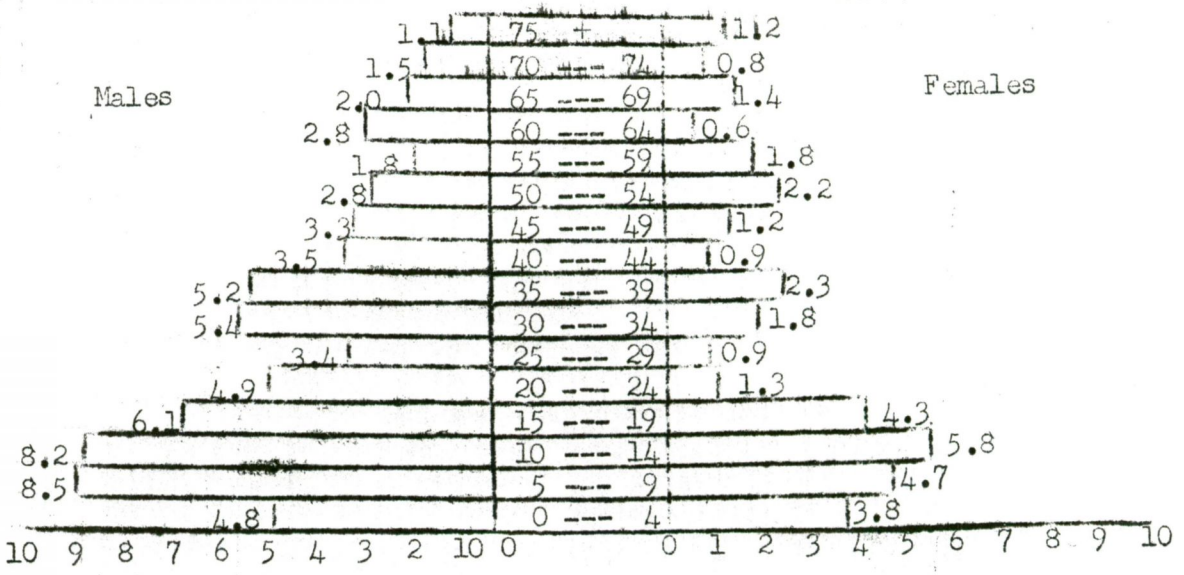
Graph #1: Incidence of families with-handicapped-persons per 1000 families



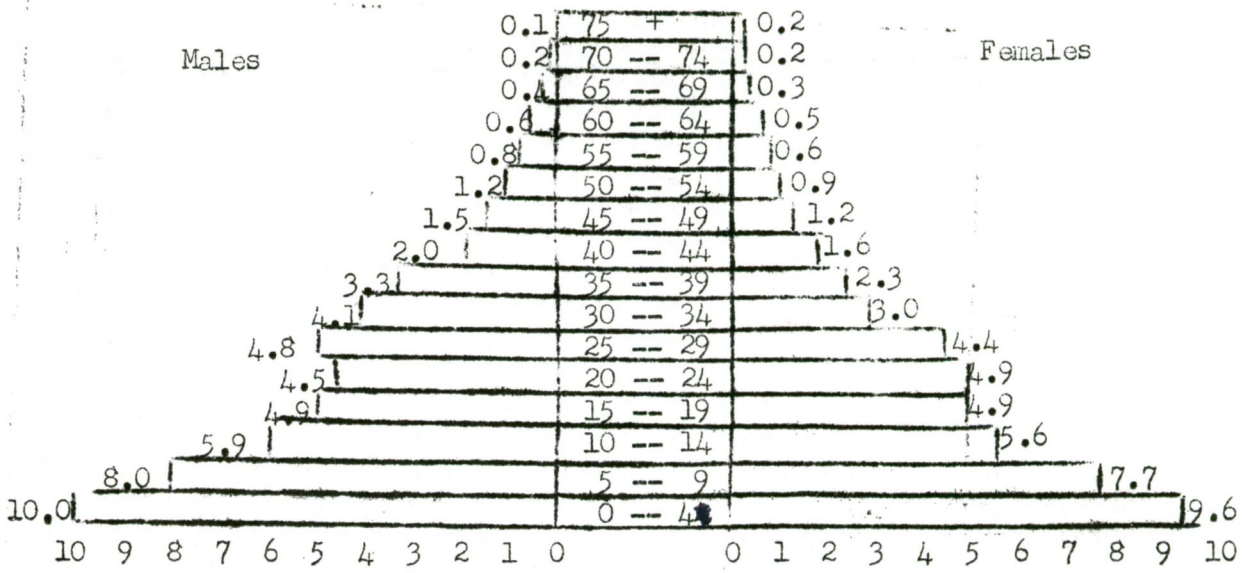
Graph #2: Incidence of handicapped persons per 1000 persons



Graph #3: Present age of handicapped persons: Percent of total in each age-sex category*



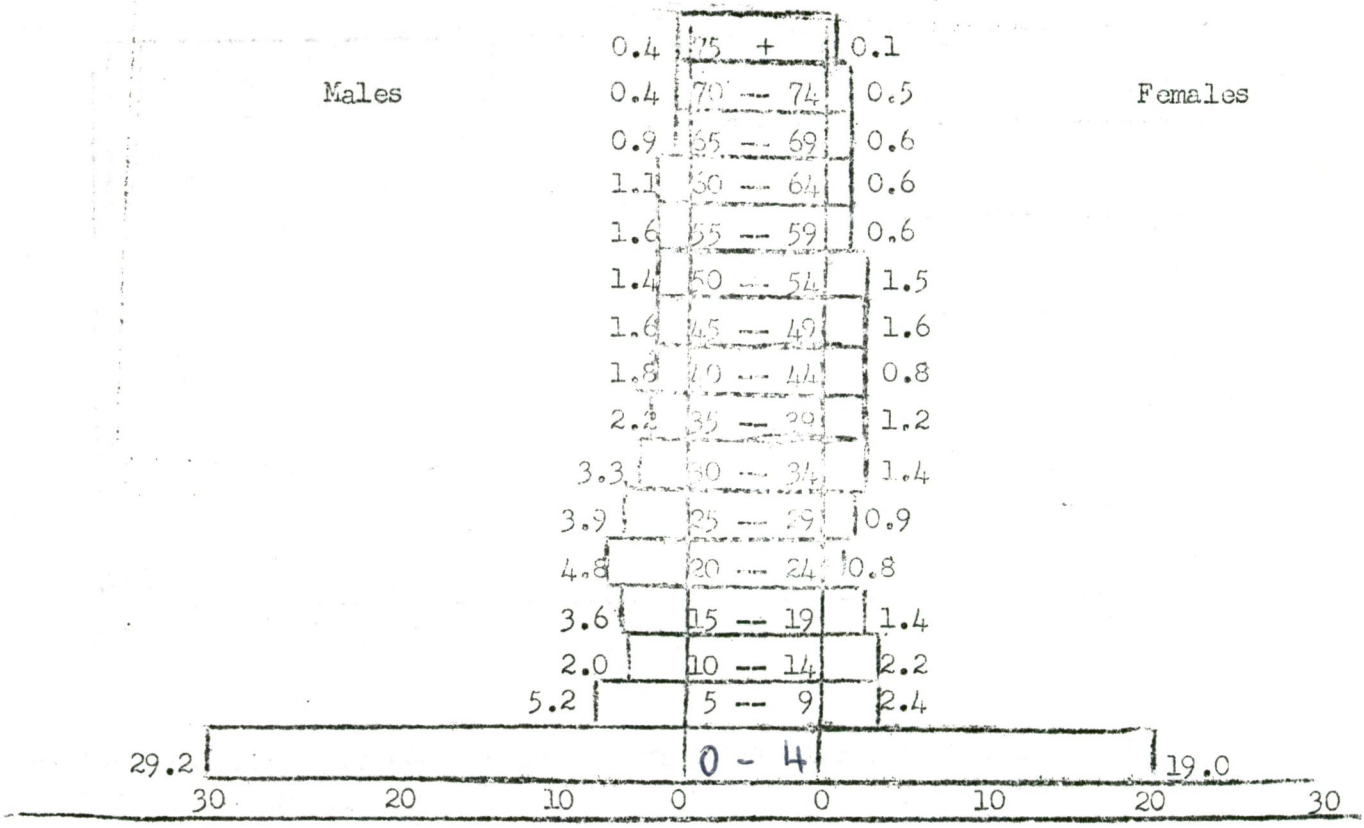
Graph #4: Percent of the total Vientiane population in each age-sex category -- 1966-7**



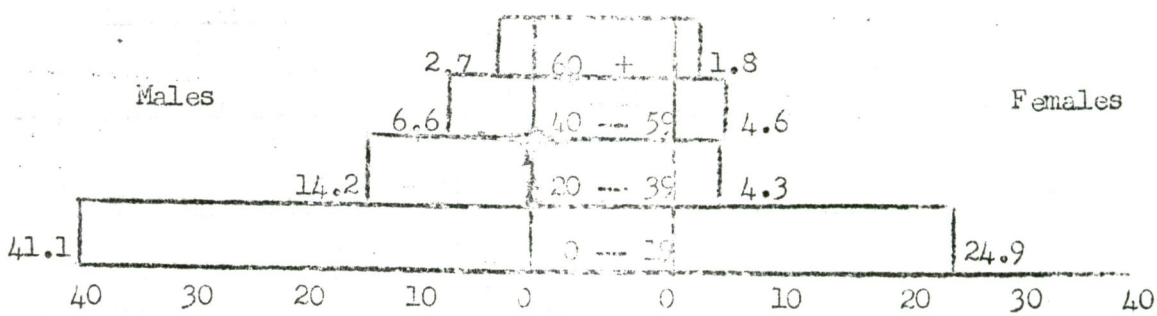
* Total number of interviewed handicapped persons analyzed into sex-age categories: 859 -- 558 males, 310 females.

** "Rapport," op. cit.

Graph #5: Age of handicapped persons at the time they became handicapped: Percent of total in each age-sex category.



Graph #6: Age of handicapped persons at the time they became handicapped: Percent of total in each age-sex category.



Graph #7: Percent of handicaps in each handicap category.*

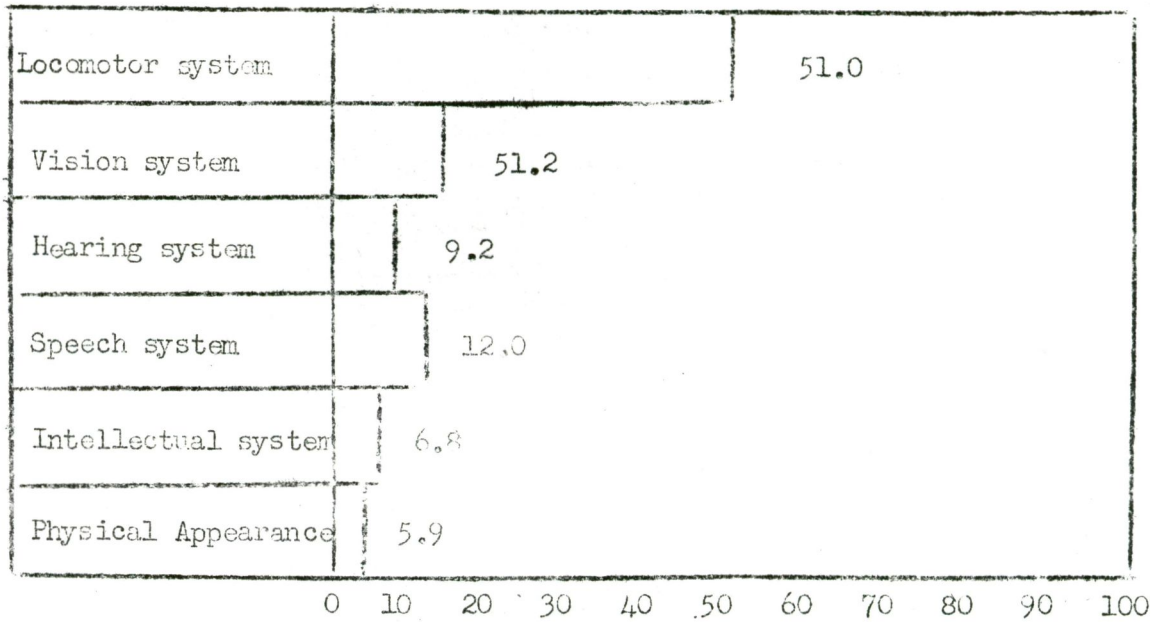
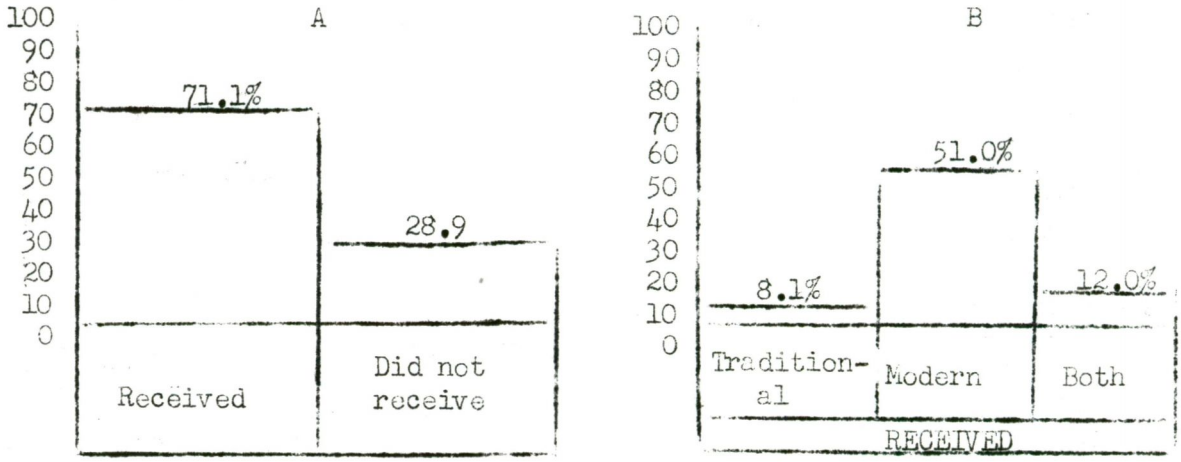


Table #4: Percent of total handicaps in each cause-handicap category.*

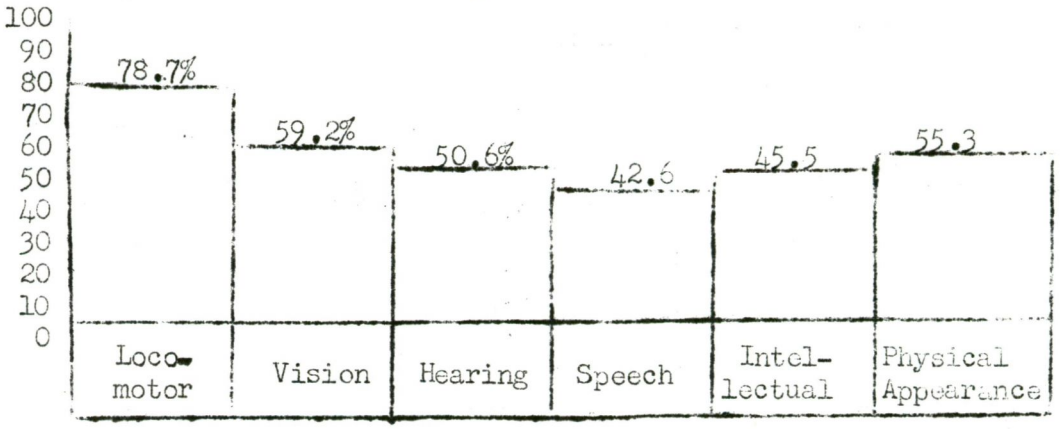
	All	Loco-motor	Vision	Hearing	Speech	Intel-lectual	Physical Appearance
Disease	47.3	46.5	66.2	49.4	21.9	59.1	40.4
Accident	11.9	13.5	11.0	15.7	3.5	9.1	14.0
War	12.6	20.7	11.0	3.4	0.0	1.5	0.0
Birth Defect	28.2	19.3	11.8	31.5	74.6	30.3	45.6

* Total of 953 handicaps. 76 persons had two kinds of handicaps. 7 had three kinds of handicaps.

Graph #8: A. Percent of handicapped persons who received medical attention (examination and/or treatment) for their handicap compared with the percent who did not receive any medical attention.
B. Those who received medical attention distributed by kind of attention received.



Graph #9: Handicaps in each handicap category: Percent receiving modern medical attention.



Graph #10: Handicaps in each cause-of-handicap category: Percent receiving modern medical attention.

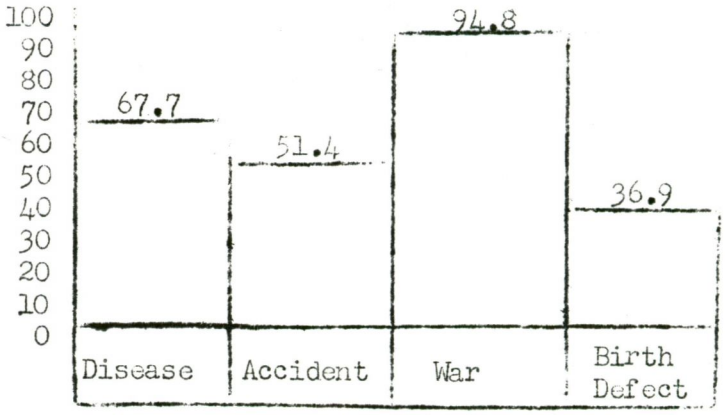


Table #5: Percent and number of handicapped persons is each handicap category

Category	Percent	Number
Locomotor	57.1	493
Loss of limb	9.4	81
Partial or full loss of limb's function	45.4	392
Epilepsy	2.3	20
Vision	17.0	147
Partially blind	11.8	102
Totally blind	5.2	45
Hearing	10.3	89
Partially deaf	0.6	5
Totally deaf	9.7	84
Speech	13.3	115
Severe stutterer	2.2	19
Mute	11.1	96
Intellectual	7.7	66
Retarded	3.6	31
Mentally ill	4.1	35
Physical Appearance	6.6	57
Lepers	1.3	11
Hump back	2.3	20
Cleft lip	2.0	17
Other	1.0	9
Total: Grand Categories	112.0*	967*

* There was a total of 863 handicapped persons interviewed, but some had more than one kind of handicap. Thus, the total percentage comes to more than a 100.0% and the total number is greater than 863.

Table #6: Handicapped persons age 10 years or more in each category: Percent who are currently working.*

Handicap category	Percent
Locomotor	23.1
Loss of limb	38.8
Partial or full loss of limb's function	20.9
Epilepsy	11.1
Vision	18.0
Partially blind	22.0
Totally blind	9.5
Hearing	20.3
Partially deaf	--**
Totally deaf	18.9
Speech	12.6
Severe stutterer	18.8
Mute	11.3
Intellectual	6.5
Retarded	6.9
Mentally ill	5.9
Physical Appearance	23.3
Lepers	54.5
Hump back	22.2
Cleft lip	00.0
Other	00.0

* One hundred and thirty seven handicapped people reported themselves to be gainfully employed at the time of the survey. Eighty one had received some formal education, and 19 of all the workers were females. House wives were not counted as workers, nor anyone who did only light work around or inside the house. Table #7 lists all the job-categories considered.

** The number of partially deaf persons included in the sample of handicapped persons is too samll -- 5 persons -- to permit a statistically significant statement about their employment. Two of the five reported that they were currently working.

Table #7: Distribution of working handicapped by profession.*

Profession category	Percent
Liberal prof. or technician(teacher)	1.5
Administrative executive	0.0
Administration Personnel	8.0
Official	2.9
Secretary	2.9
Office worker	2.2
Merchants and vendors	13.9
Operate a small stand	4.4
Make and sell handicrafts -- rattan furniture, bamboo goods, pottery.	5.8
Salesman	1.5
Other	2.2
Farmers, animal raisers, & foresters	20.4
Paddy and hill rice farmers	16.0
Animal raisers	2.9
Other	1.5
Non-agr. workers: skilled & unskilled	35.8
Craftsmen -- welder, mason, mechanic tailor, radio, watch, & shoe repair-men, artificial limbs maker, pipe fitter, license plate maker.	11.7
Vehicle operator -- truck driver, sam-lo operator	2.2
Factory worker	2.2
Custom's ticket collector at the market	2.9
General laborer	15.3
Other	1.5
Special Service Worker	13.1
Guard	5.9
Servants and similar workers	3.6
Other -- barber, musician, chauffeur, hospital orderly, prostitute.	3.6
National army	2.9
National police	4.4

* See footnote with Table #6. Profession categories from "Rapport," op. cit.

Table #8: Handicapped persons age 5 years or more: Distribution by level of education.

Level	Percent of handicapped men	Percent of handicapped women	Percent of all handicapped persons
Total	57.6	40.3	51.7
1st grade	7.2	6.7	7.0
2nd grade	6.2	7.5	6.6
3rd grade	10.1	9.0	9.7
4th grade	8.3	4.1	6.9
5th grade	4.4	1.9	3.6
6th grade	12.6	7.8	11.0
Higher	1.4	1.1	1.3
Other*	7.5	2.2	5.7

* Those who were educated in the wat, in a trade school, or similar institution. One hundred and eight women and 298 men were formally educated.

V. APPENDIX.

A. PERSONNEL AND FUNDING.

The main personnel involved in the survey work were seven in number. One of them, a volunteer with International Voluntary Services, Inc. (IVS) and attached to the Lao Government's Orthopedic Center, was covered financially by his normal IVS wages. The rest of the personnel were paid by the Student Summer Work Experience program (SSWE), a program financed by United States Aid to International Development (USAID) and run by IVS and the Ministry of Youth and Sports. SSWE paid 26,000 kip per student for ten weeks. After the ten weeks SSWE work-period was up, the World Health Organization (WHO) in association with the United Nations Development Program, contributed 48,000 kip so that five of the students could continue working for 20 more days and complete the survey. WHO also provided transportation throughout by allowing the survey team to use one of their Volkswagon buses and its Lao Government allotment of 60 liters gas per month. The total cost for gas and labor excluding the IVSer was 213,000 kip ($355.00). Finally, the Orthopedic Center granted one of its drivers for the task of transporting the research team to and from the field and provided free lunches for the student researchers.

As the IVS member of the survey team had previously conducted a survey project in Laos, he was the head of the project until the student members of the team had gained some experience. Decision making and general responsibility were then shared equally. Regrettably, no member of the Orthopedic Center staff worked full time with the team. If one had, there would be no need to conduct future Center surveys with the aid of an outside adviser. Initial provision had been made for an

Orthopedic Center counter-part, but the person selected was sent off to Savannakhet for other, temporary work.

B. NOTE ON THE QUESTIONNAIRE FORMS.

Two types of questionnaire forms were used, one which asked relevant questions of the Nai Ban and one which asked questions of the handicapped person. The questionnaire forms were devised by the IVS member of the survey team and Captain Souphan Intharat of the Orthopedic Center Staff. Copies of the forms can be obtained at the Center.

C. CRITICISM OF THE SURVEY METHOD.

It may be asked why the above survey method was used instead of (1) going to every house or (2) visiting a 10-20% sample which could have been more rigorously examined than the survey's larger population sample. Alternative (1) was impossible: there wasn't enough time to visit every house in Vientiane. The second alternative -- a rigorous sample -- would have been preferable if the survey team had been interested only in computing the incidence rate of handicapped persons. But in fact the team was equally interested in making significant statistical statements about the demographic characteristics (age, sex, education, etc.) of handicapped people. For this, a large number of handicapped people had to be contacted and there was no way of knowing before hand if a 10-20% sample of the total Vientiane population would yield enough handicapped persons. Hence, a very precise statement of incidence was sacrificed for breadth of information about other aspects of Vientiane's handicapped. In addition, by directly reaching more individual disabled persons than could have been contained in a 10-20% population sample, the survey

personnel were able to inform them about sources of help, e.g. the Orthopedic Center. Laos is not a rich country and therefore any survey or similar project should be utilized to accommodate as many purposes as feasible.

Another criticism of the survey method concerns the Nai Ban's list of families: These lists might omit poorer or refugeed families, a group which probably has a higher propertion of handicapped persons than other groups. Thus, any incidence rates or other statistical figures calculated from the population sample might only inform about the more affluent Vientiane people. However, it can be answered that there are not very many refugees resettled in Vientiane City -- government policy is to keep most of them outside the city -- nor do there appear to be many beggers. Further, handicapped people who we interviewed, but later found not to be on the Nai Ban's list, were observed to have a standard of living very similar to these handicapped persons on the list. Hence, the survey probably did not systematically exclude disavantaged people.

It could also be suggested that the Nai Bans and the people interviewed did not know their neighbors well enough to report accurately on the number of handicapped people in their village. However, one must remember that Vientiane is more like a conglomeration of villages than a city, and village people usually know their neighbors.

Finally, one may feel dissatisfied that the survey method ignored hospital reports of handicaps and sophisticated means of measuring the degree of a person's disability. However, hospital reports usually mention only disease or injury types, not the resultant handicaps.

Further, only 63% of the interviewed handicapped persons had ever received modern medical attention (Graph #8, page viii). As for employing sophisticated measuring devices, the survey did not have the necessary finances, equipment, and technical personnel at its disposal. The intention was only to give a rough but informative idea of the number and situation of Vientiane's handicapped and to indicate areas where further research with sophisticated equipment could profitably be under-taken.

The survey method, then, appears to have been adequate for carrying out its delegated tasks. There is another criticism -- concerning the small percentage of handicapped persons that were female and the small percentage that were children under age 5 — but this is discussed and accounted for in Section III, A, 3.