

Thirteen years' experience in fitting war amputees with artificial limbs

by Alain Garachon

From its very beginnings the ICRC has been concerned with the war disabled and has done what it can to help them. After the Second World War it was involved in orthopaedic activities in various countries, such as Finland, Viet Nam, Jordan, Hungary, Algeria, Morocco, Israel, Egypt, Nigeria, Somalia and Yemen.

At the time such work was carried out by specialized firms using the technology of industrialized countries, but during the 70s the ICRC and WHO set up an orthopaedic programme in Yemen based on the local manufacture of orthopaedic components, to avoid having to rely on imports.

This policy, which was widely adopted by international cooperation agencies and even laid down as a principle under the general heading of "appropriate technology", led some experts to go to the other extreme of advocating techniques too remote from the basic requirements of the profession, although they appeared quantitatively more attractive in satisfying an ever-growing demand.

Over the past thirteen years, the ICRC has established 24 orthopaedic workshops in 14 countries. They have produced:

● prostheses	37,000
● orthotic appliances	11,000
● wheelchairs	3,400
● pairs of elbow crutches	68,000

Fifty-three expatriate associates, mainly prosthetists, were engaged in this work in 1990, together with some 300 local assistants.

In all programmes of this type, the ICRC endeavours to develop techniques and components appropriate to the economic capacity of the countries concerned, and has succeeded in designing and producing artificial feet and knees using local materials.

In many countries, however, basic raw materials such as wood and leather are becoming ever scarcer and more expensive. In Angola, for example, suitable wood costs US\$ 3,000 per cubic metre.

This situation has recently led the ICRC to employ cheap synthetic materials, such as polypropylene, along with local materials, of course, whenever these are available at a reasonable price.

In certain countries with many amputees (for example Viet Nam, whose authorities cite the figure of 60,000), machine tools of simple design have been developed for the mass production of artificial knees. This has the additional advantage of ensuring a degree of standardization in the quality of the finished product.

In a case such as Viet Nam, if one takes a figure of only 40,000 amputees and an annual production of 10,000 artificial limbs, each with an estimated life of four years, it would take four years to fit all the amputees and production would have to continue at the same rate. At least 200 prosthetists would be needed to maintain such an annual output!

Even in Angola or Afghanistan, where its output is highest (about 1,500 prostheses annually in each country), the ICRC is far from achieving such figures.

The other aspect of ICRC work in this sphere is *the training of local prosthetists*. The training courses comply as far as possible with the recommendations of the International Society for Prosthetics and Orthotics (ISPO), which has established various levels of training for developing countries. In general, trainees are prepared for level II, a three-year course. Level I is more or less equivalent to the training given in European countries.

Training programmes are carried out in close cooperation with the Ministries of Health concerned. Where this is not already the case, the latter are encouraged to give official recognition to the profession of prosthetist/orthotist to assure the future and further training of new graduates. Practical and theoretical courses are conducted by expatriate prosthetists and physiotherapists and also by local technical teachers and doctors. The final examinations are supervised by the teachers who run the courses and a representative from the ISPO. Appropriate training is also given to assistant prosthetists and craftsmen specializing in the manufacture of components.

The purpose of these programmes, apart from fitting as many amputees as possible, is to make the workshops technically and administratively independent so that the ICRC can eventually phase out its involvement.

Experience over the past twelve years has shown that good expatriate professionals are capable not only of fitting patients but also of manufacturing components and teaching, thus enabling their local counterparts to achieve a satisfactory level of technical independence. The same cannot be said, however, of administrative independence, over which the ICRC has no control after the hand-over.

Indeed, factors such as political will, operational budgets, administrative competence and working conditions are vital to the success or failure of a programme, irrespective of the technical level of the staff.

Many countries have insufficient resources to ensure a regular supply of local and imported materials and to pay their employees a decent salary. The latter are then compelled to take a second job in order to survive, or they leave the workshops.

The ICRC is now concentrating on these "administrative" aspects, in order to preserve programmes which took so much time and effort to implement.

Not all countries are prey to such difficulties, however, and very satisfactory results have been achieved in some of them: Yemen, Pakistan, Zimbabwe, Chad and Burma. Elsewhere, in Angola, Mozambique, Nicaragua, Ethiopia, Sudan, Uganda and Lebanon, despite the sound technical level of the staff, the ICRC has to maintain a presence in order to compensate for the administrative shortcomings of its partners.

In Viet Nam and Afghanistan, where programmes have been set up more recently, the ICRC's local counterparts have not yet reached the stage of technical self-sufficiency. It is regrettable in this connection to note that international cooperation agencies are interested first and foremost in the technical aspects of orthopaedic activities. Without underrating the importance of this, we feel that it is essential to attach equal importance, if not top priority, to ways of integrating such programmes into local structures so that long-term success is assured.

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