

Education feature

Ten years in the development of the Tanzania Training Centre for Orthopaedic Technologists

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Introduction

The unique Tanzania Centre for Orthopaedic Technologists (TATCOT) for the English speaking countries in Africa, celebrated its 10th anniversary in 1991.

The German Technical Co-operation Agency (GTZ) laid the foundation stone of this remarkable development in Orthopaedic Technology on the 26th August, 1981 with the arrival of the first two expatriate teachers.

The decision of the Ministry of Health, Tanzania with the co-operation and support of the Federal Republic of Germany, to build the Tanzania Training Centre for Orthopaedic Technologists, is today rewarded with an enormous increase in the profession in Tanzania itself and the other English speaking African countries.

The Project

After an 18 month construction period TATCOT was able to celebrate its official opening in July 1983 under the leadership of GTZ expatriate Orthopaedic-Engineer and recent Vice President of ISPO, Sepp Heim.

Remarkable results could be shown by this date:

- the school and workshop were completed and installed.
- the three years training programme was running smoothly.
- the first and second years' trainees had completed their exams.
- it was possible to offer and conduct

workshops, short term courses and seminars on international level.

The development of TATCOT then progressed as follows:

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|---------------|---|
| May 1984 | International workshop on "Education, training and clinical services in prosthetics and orthotics technology for developing countries". |
| June 1984 | First group of 14 students completed their three years' training course. |
| January 1985 | First recognition of the course by the International Society for Prosthetics and Orthotics (ISPO). |
| July 1985 | Construction of students' hostel and staff houses. |
| November 1985 | Seminar on "TATCOT establishment and future plans in Tanga". |

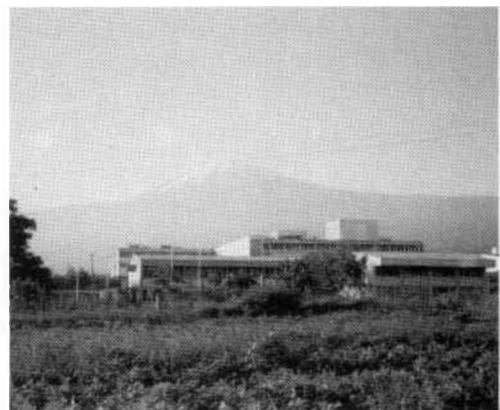


Fig. 1. TATCOT school building and Kilimanjaro Regional Medical Centre.

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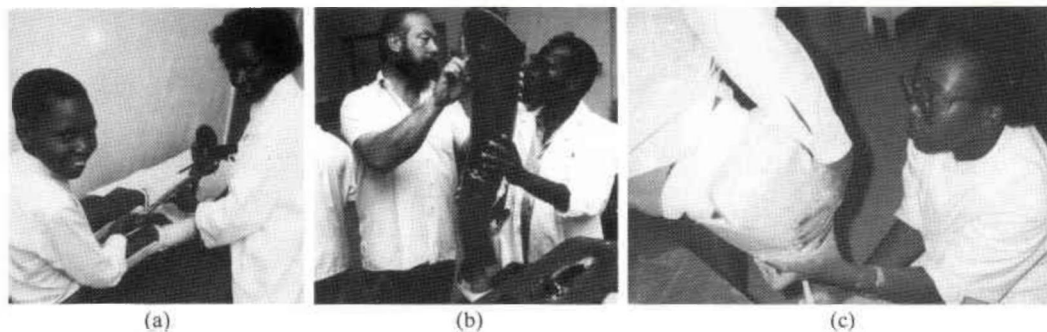


Fig. 2. a) Fitting knee-ankle-foot orthoses for poliomyelitis.
 b) Instruction during field work practice.
 c) Fitting a plaster model for an above-knee socket.

March 1986	Senate of the University of Dar-es-Salaam approved the training and examination regulations for the diploma in Orthopaedic Technology.	<ul style="list-style-type: none"> — Participation at ISPO World Congress in Chicago. — Exhibition at Dar-es-Salaam "International Trade Fair". — 17th World Congress Rehabilitation International participation in co-operation with the International Society for Prosthetics and Orthotics (ISPO).
June 1988	First group of 12 students were awarded diploma of the University of Dar-es-Salaam.	
July 1988	Regional Seminar held on "Rehabilitation and training of lower cadres".	
December 1988	Completion of the local component production unit.	
July 1991	Exhibition at Dar-es-Salaam "International Trade Fair".	
October 1991	Review of the curriculum.	
January 1992	Training programme for a one year course in lower limb orthotic technology (LLOT) established and training facilities completed ready to commence.	

Further activities planned for 1992 are:

- Regional seminar on "Poliomyelitis".



Fig. 3. Training in the design of prosthetic/orthotic components.



Fig. 4. Instruction as a clinic team member.

The three years training course

The development of the training contents for the three years course was influenced through the large experience of GTZ in establishing and operating service units and training centres in Tunisia and Togo.

The conclusion of these experiences was that, in order to meet the demand of the disabled population in Africa, a thorough training in theory and practice was needed to produce a well-trained independent working Orthopaedic Technologist. The course content of the TATCOT course is summarised in Table 1.

The well trained professional produced by this course should have;

- the necessary theoretical and practical skill

Table 1. Course content.

First year training	
Practical (72.4%) <ul style="list-style-type: none"> – General mechanical skills – Production of arch supports – Production of lower limb orthotic components and elements – Production of lower limb orthoses. 	Theory (27.6%) <ul style="list-style-type: none"> – Anatomy and Physiology – Technology – Biomechanics – Mechanics – Mathematics – Technical Drawing – Introduction to Health Delivery Systems and Primary Health Care concepts.
Second year training	
Practical (76.3%) <ul style="list-style-type: none"> – General mechanical skills – Production of lower limb prosthetic components. – Production and fitting of lower limb prostheses. – Production and fitting of lower limb orthoses. – Production and fitting of spinal and upper limb orthoses. 	Theory (23.7%) <ul style="list-style-type: none"> – Anatomy and Physiology – Technology – Biomechanics – Mechanics – Mathematics – Technical Drawing
Third year training	
Practical (75.5%) <ul style="list-style-type: none"> – Ankle-foot orthoses – Knee-ankle-foot orthoses – Other orthoses – Foot prostheses – Below-knee prostheses – Above-knee prostheses – Other prostheses 	Theory (24.5%) <ul style="list-style-type: none"> – Functional Anatomy – Pathology – Biomechanics – Clinics – Workshop Management

to give a high standard of service to patients;

- the potential of teaching and training others in more advanced techniques of orthopaedic rehabilitation.

The orthopaedic technologist trained at TATCOT, is expected to participate in rehabilitation in the following areas:

- as a full member of the clinical team;
- in the provision of orthotic/prosthetic appliances;
- in the administration and management;
- in new developments concerning orthotics and prosthetics;
- in lecturing and demonstration to colleagues, community and government groups and others professionally concerned with orthotics and prosthetics.

This very high demand on the performance of the qualified TATCOT graduate needs a very close follow-up and support through the training centre, to enable the former student to use her/his knowledge in the new professional environment. TATCOT therefore puts in a

great effort, to intensify contact with its former students and offers services such as:

- upgrading seminars and workshops;
- short term courses;
- school information;
- consultancy services.

Summary

The aspirations of TATCOT to form international links with important orthopaedic technology training institutions has resulted in an intensive co-operation with the

- Bundesfachschule für Orthopaedie Technik, Dortmund, Germany

and the

- National Centre for Training and Education in Prosthetics and Orthotics, University of Strathclyde, Glasgow, Scotland.

The solid and thorough training and the seminars and workshops at international level conducted at TATCOT has led to the good reputation which the centre enjoys.



Fig. 5. External examination of third year practice.

After 10 years of operation and existence TATCOT believes that it can be proud that it has achieved its aims.

A tracer study, recently carried out TATCOT displayed that in Tanzania, East Africa and other English speaking African countries, the Tanzania Training Centre is in very high demand to produce more Orthopaedic Technologists, to conduct more seminars and workshops, to enlarge the consultancy services on an international level and to research more in the production of components.

Future

As can be seen from the list of students (Table 2) some 140 Orthopaedic Technologists trained at TATCOT have returned to their home countries. It is very important to offer a modern training and adapt it to the demands and development of the different countries.

Besides the three years' training course and the one year "Lower Limb Orthotics Technology" course, the school is operating a production unit for locally made orthotics/prosthetics components. This unit was

Table 2. List of students 1981-1991

Country	Students
Tanzania	34
Zimbabwe	24
Kenya	14
Zambia	13
Ethiopia	11
Uganda	9
Malawi	6
Liberia	4
Pakistan	4
Madagascar	3
Sierra Leone	3
Botswana	2
Gambia	2
Nigeria	2
Seychelles	2
South Africa	2
Swaziland	2
Lesotho	1
Somalia	1
Germany	1
Total	140

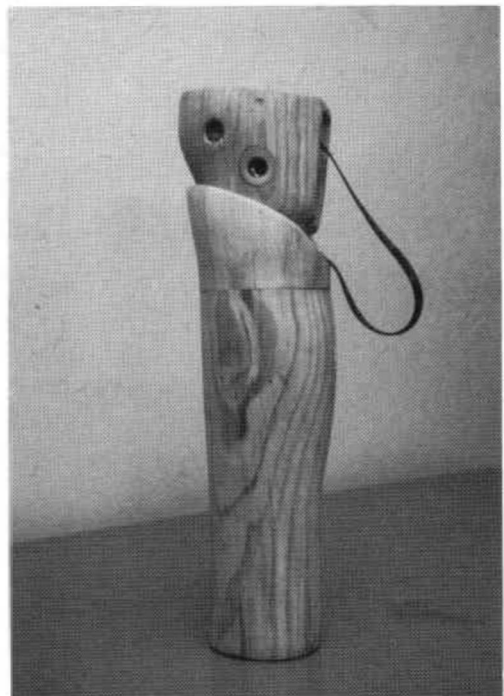


Fig. 6. Local production of knee components.

established with the intention of producing components which would minimise the cost of an orthopaedic appliance and be more appropriate to the environment. The fabrication of components in the production unit on a large scale will also reduce the time spent by students at present on the production of appliances. This should allow more time in the third year of the course for training in the evaluation of patients' needs and individual assessment for prescription of appliances.

If TATCOT succeeds in assisting with the establishment of functional operating workshops for the manufacture of orthopaedic appliances in the rural areas, it would be one important step towards the improvement of the Rehabilitation Services in the English speaking African countries towards the year 2000.

Application for admission at TATCOT three years training

For further information on how to apply for Orthopaedic Technology Training at TATCOT and the approach for obtaining the necessary financial assistance, please write to the:

Principal of TATCOT,
P.O. Box 8690,
Moshi,
Tanzania.



Fig 7 Orthopaedic workshops are contributing to the aim of improving rehabilitation services in English speaking Africa