

ourselves, instead, escorting our wives from one perfume shop to another. Perfume is fantastically cheap in Paris, and as rumors spread as to which of the shops were offering larger discounts, the women scrambled about like bird dogs on a fresh scent. Naturally, it was unthinkable to allow the men to go off by themselves, as Paris is a city of male opportunity.

On Saturday, August 10th, we emplaned for home via the same KLM Constellation and crew that we had flown over with. We stopped off in Amsterdam, Holland, for five hours as guests of KLM and went on a sightseeing trip through its canals.

Once more, we lifted our glistening wings; this time for Shannon, Ireland. We crossed over London at night and for the first time realized the immensity of this great city while viewing its widespread, lacy patterns of light from the air. After alighting at Shannon briefly, we resumed our flight. We landed the next morning at Goose Bay, Labrador. Our flying time had been 17 hours and 20 minutes.

Before we were allowed to leave the plane, the interior of the cabin was sprayed copiously with insecticide. A U. S. Public Health officer walked up the aisle and ventured the opinion that we all looked mighty healthy. After showing our smallpox vaccination cards, and having our baggage inspected, we suddenly realized that we had been readmitted to the United States, and that our wandering had ended.

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## Technical Aspects of the World Congress

By **WILLIAM A. TOSBERG, C.P.&O.**

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More than 1000 people representing forty-one nations attended the 7th World Congress of the International Society for the Welfare of the Cripples in London. They came to England to exchange ideas for a better service to the physically handicapped. Many came to study progress in the field of prosthetics and orthotics, and among these was a large presentation from the United States. Mr. and Mrs. Tenenbaum and Mrs. Dorsch from the OALMA have reported their impressions of the Congress and of the preceding and following tours from the social point of view. It is my intention to report on the technical aspects.

Part of the Congress was a technical exhibit which included prostheses and orthopedic appliances shown by manufacturers from the United States, Denmark, England, Greece, Norway and Western Germany. The United States was represented by a panel showing the work of the Prosthetic Research Board. The development of a device from an idea stage until its production by commercial agencies was shown; also some devices which are not as yet commercially available but show sufficient promise to be considered for testing and development. Charts and photographs demonstrated the educational program conducted by the Prosthetic Research Board in cooperation with the American Board for Certification and the Orthopedic Appliance and Limb Manufacturers Association.

The display of the Milton and Adele Tenenbaum Company, attracted many visitors, and the remarks of Prince Philip, the Duke of

Devonshire, the Lord Mayor of London, and many people well known in the field of rehabilitation were highly complimentary. The outstanding quality of their skin gloves and of their prostheses for partial hand amputations has never been approached in any European country. The faithful reproduction of texture and color was admired by professional people as well as by laymen.

The German display demonstrated the close cooperation between Government, Limbmakers Guild and rehabilitation agencies, public and private. Their display consisted of tables, film slides and demonstration of working models. Their upper extremity prostheses showed the influence of American technology. It was only six years ago that a German Committee visited the United States to investigate American amputee service. Functional arm prostheses were not common in Germany then, but the devices shown in London displayed a high degree of progress in this field. Some of their techniques in the manufacture and fitting of artificial arms appear to be superior to ours. Prof. Dr. O. Hepp, the leader of the German team mentioned previously, is presently director of a government supported prosthetic research center. The braces displayed in their exhibit were made partially from light-weight stainless steel and from plastic materials.

A prize for the most comprehensive display of rehabilitation services was awarded to the Danish exhibit. Prostheses and braces were included in their display.

All of the European prosthetic and orthopedic appliances demonstrated were of superior workmanship, whereas design usually followed conventional patterns.

One exhibit, however, differed from all the others in this respect. It was the display assembled by the I. S. W. C. Committee on Prostheses, Braces and Technical Aids. Here were samples of new designs which had become available since the last Congress in The Hague, Holland, in 1954. It combined the work of many countries. America was represented by the adjustable leg and the alignment duplication jig which was designed by the University of California in Berkeley under the sponsorship of the Prosthetic Research Board. It can be presumed that several other countries will utilize this combination since the remarks expressed by many prosthetists were highly positive. Considerable interest was also shown in the cerebral palsy brace constructed at Newington Home and Hospital for Crippled Children by Mr. J. Rosenberger, C.P.&O. A unique foot splint made by the Winterkorn Company of New York found approval by many physicians.

France showed an artificial arm powered by a very small motor-battery assembly. It was demonstrated by an amputee with great facility. The outstanding German contribution was the Heidelberg arm, which has been seen in the United States already, and was commented on in a previous issue of the Journal. A Swedish amputee demonstrated a hydraulic knee mechanism which is described in another article of this issue.

Dr. M. Hiyeda from Japan showed some excellent examples from the Orient to show how prosthetic devices have to conform to the requirements of the regions and also the culture of their people. American and European artificial limbs are quite unsuited for use in rice paddies. Artificial legs as we know them do not permit the wearer to squat, a position which is essential in the Orient.



**AMERICAN CORNER AT THE WORLD CONGRESS**—A group of American prosthetists and research personnel pose for their picture with the Duke of Devonshire at the World Congress. In the background may be seen the exhibit of the Prosthetics Research Board, featuring the contributions of engineers, Veterans Administration personnel, physicians and prosthetists. Left to right: William Tosberg, C. O. and P.; Dr. Howard A. Rusk; Colonel Maurice J. Fletcher of the Army Prosthetics Research Laboratory; A. Bennett Wilson, Staff Engineer of the Prosthetics Research Board; the Duke of Devonshire; Milton Tenenbaum, the OALMA delegate to the Congress; and Dr. Eugene Murphy.

A field trip to the Roehampton Hospital was very interesting for the participating prosthetists. The British government purchases almost all of their lower extremity prostheses from the Hanger Company and their artificial arms from the Steeper Company. The Hanger Company employs about 1000 men and women in the manufacture and maintenance of their limbs. Their production figure is approximately 10,000 new legs and 100,000 repairs and alterations per year. Since the British government is the almost exclusive purchaser of these devices, the Government maintains a close surveillance over the production, income and profit of the company. Most legs are made from aluminum, preshaped on presses, and molded over different sized mandrils. Whenever wood sockets are used they are formed and shaped with hand tools. No routers were seen. The A. K. socket shapes closely resemble the so-called plug fit sockets which were popular in the United States until the end of World War II. Suction sockets are not yet popular in England. The knee brake mechanism demonstrated appears to be very good and can easily be adjusted by the amputee without removing the prosthesis. A pelvic hinge joint which allows flexion, extension, adduction, abduction and also rotation did not appeal to the writer, since it is rather bulky and does not appear feasible for most average A. K. stumps.

The majority of arms demonstrated at the Steeper Company were made from an excellent grade of molding leather. Pre-fabricated forearms were made from aluminum. Split hooks are not as popular as they are in the United States. Hands are made from a strong plastic material and are of simple design. They are well suited, however, to hold the handle bars of the bicycles and motorcycles that are seen in great numbers all over Europe.

A demonstration by patients with amputation at all levels proved the value of a well integrated amputee program. The gait picture appeared to be excellent in most cases. Of particular interest was the great number of knee disarticulations. The prostheses for this type of amputation were provided with an ingenious knee friction device which allows a gait better than that generally seen in the United States by amputees with a similar type of amputation. A great many children with lower extremity anomalies were demonstrated. The leg extensions were molded from leather and followed standard design.

A rather extensive discussion concluded the day. The general theme of the discussion was that the concentration of production stifles progress, although it creates a well tested device. Combined with good surgery and extensive use training, the British amputee receives adequate prosthetic service. He does not, however, receive the benefit of modern research, the results of which are available to the American and other amputees; such as the suction socket, plastic materials, modern alignment methods or hydraulic knee mechanisms. In most other European countries one or the other of these designs, methods or materials can be observed. Lack of competition seems to slow down their introduction in Great Britain.

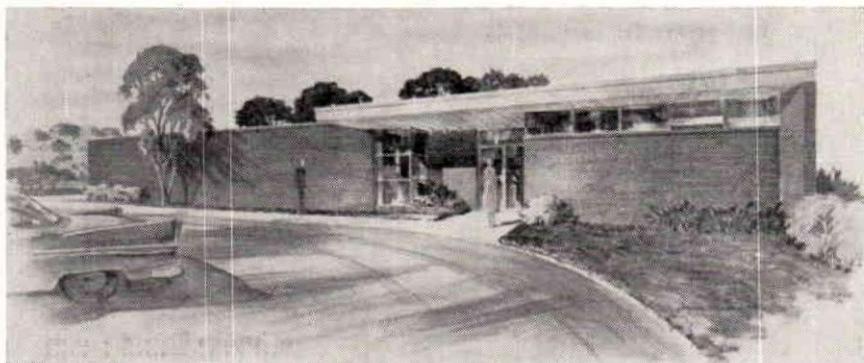
It was the impression gained by all that the team approach as practiced in Roehampton has proved its value. The visit and discussion by experts from many countries will contribute to acceleration of a technical research program.

### THE COPENHAGEN TRAINING COURSE

Another development of significance was the First International Prosthetic Training Course conducted by the Committee on Prostheses, Braces and Technical Aids under the direction of its chairman, Dr. K. Jansen. This course took place at the Orthopedic Hospital in Copenhagen, Denmark. About seventy students from twenty-three countries participated. They were almost equally divided into Physicians, Prosthetists and Therapists. Dr. H. Kessler and Mr. Donald Wilson from the United States addressed the group. Among the International Faculty were Captain Thomas Canty, USN, Colonel Fletcher, Dr. Inman, Dr. Murphy, Mr. Bennett Wilson and the writer from the United States; also participating were instructors from Denmark, England, Germany, Japan and Sweden.

This course was outstanding. Many phases of prosthetics were covered through lectures, slides, working models and shop demonstrations. Dr. Canty performed a cineplastic operation. Dr. Kuhn of Germany made upper extremity prostheses using plastic laminates and a vacuum system which allowed the formation of severe undercuts in some sockets without extensive efforts by the technician. This production method deserves further study. The writer demonstrated the manufacture and fitting of the U. C. type of A. K. socket; also the use of the adjustable leg and the alignment jig. Dr. Canty showed the method of cast taking for the Navy soft socket. Of particular interest was an elastic plaster of paris bandage as demonstrated by a German instructor. Mr. Lyquist, shop supervisor of the prosthetic shop at the Orthopedic Hospital, used this bandage to make a socket for Dr. Kuhn, an above-knee amputee. The uncorrected socket was then mounted on the adjustable leg and worn by Dr. Kuhn as a suction socket prosthesis. It would seem that such a plaster bandage could have extensive application in prosthetic techniques.

## New Buildings for Hanger



**HANGER OF GEORGIA NEW BUILDING**—This is the architect's sketch of the new building under construction by J. E. Hanger, Inc., of Atlanta, Georgia.

Construction of a new highway straight through their old location, led J. E. Hanger of Georgia and the Southern Prosthetic Supply Company to plan a completely new building, which is sketched above. Now under construction at 947 Juniper Street N. E. in Atlanta, the building will be occupied about the first of March 1958. The twenty thousand square foot structure adjoins adequate parking for employees and patients. All retail operation space is air-conditioned, and the rest of the plant is air-cooled.

The building is completely brick. It is set on a slope which makes it possible to have all retail operations at the street level, with wholesale and manufacturing operations at the lower level, where full truckloading facilities are available.

This will be headquarters for all Hanger retail operations in the Southeast. In addition the Linenkohl Minor Shoe Company, an affiliate firm, will be making custom orthopedic shoes under the same roof. Southern Prosthetic Supply Company will have considerably expanded space. This company is now manufacturing the SACH Feet, carving the setups as well as manufacturing the wood blocks.

### WORLD CONGRESS REPORT (Continued)

The Regnell Hydraulic Knee from Sweden was worn by several pilot wearers during the course. Through conversation with these amputees and from observation it appears that this device gives great stability on weight bearing, safety while walking and a very good gait pattern. The Copenhagen shop had fitted thirty-two Regnell knees. They were found to be greatly appreciated by all amputees.

Some of the outstanding lectures were those of Dr. V. Inman from California on normal and amputee gait, of Dr. Sr. Brandt of Copenhagen on Cerebral Palsy, and of Prof. O. Hepp of Germany on Bracing.

The course closed with a banquet which proved the Danes as wonderful hosts.

Exchange of information is one of the best means for improvement of knowledge, and improved knowledge will facilitate acceptance of the Prosthetist as a qualified member of the team working for improved amputee service.

The London Conference and the Copenhagen Course have convinced the writer that many people from many nations are working towards this goal. The United States is leading in the field of prosthetic education and research. By combining this work with similar efforts in other countries it is possible to elevate the standards in all countries. The next World Congress will be held at New York in 1960. This should give the United States an excellent opportunity to demonstrate further progress and at the same time to benefit from the work which will be exhibited by other nations. It is not too early to plan for such an opportunity.