

Meanwhile, a revolutionary wheelchair developed by Dr. Orest Roy of the National Research Council is now rolling off the assembly line thanks to an Ottawa-based high-tech firm.

Matrix Marketing and Management Inc. of Ottawa began production of the first-of-its-kind device for the Canadian market last spring. If successful, Matrix plans to go international with the wheelchair which, in addition to having a number of advantages, could halve the price of the standard \$5 000 (Cdn) motorized wheelchair.

The new wheelchair differs from regular models because it brings its occupant almost to the eye level of those standing around. The added height also makes work at desks or counters easier.

Unlike the standard model, this wheelchair is mounted on a circular turntable that rotates on four stabilizing castors. Because of this, it can move in virtually any direction on a small turning radius. There is a single drive wheel under the seat and a steering hoop that rests at waist level. When the hoop is turned, the device moves about and at a speed determined by how hard it is being squeezed.

Another advantage comes from the wheelchair's much smaller size which makes it far more manoeuvrable, particularly in a confined area. It is not, however, suitable for outdoor use because of its small wheels and inability to handle rough terrain.

Bliss Is the Ability to Communicate

Speech-impaired people often have a physical disability which means that besides being unable to speak, they also have difficulty moving about. As a result they often suffer the added hardship of isolation.

Help, however, is finally on the way. It comes in the form of a special symbol language known as Blissymbolics created by Charles Bliss and further developed by the Blissymbolics Communications Institute in Toronto — the centre responsible for the worldwide registration and dissemination of Blissymbolics. The Bliss system is currently used in many languages in 32 countries by more than 30 000 people.

Blissymbolics is a language that enables people who cannot speak to communicate complex ideas by indicating symbols pictured on a board. The more than 3 000 Blissymbols are created by using combinations of basic shapes, letters and numbers. To communicate, the user indicates one symbol after another until a complete thought is formed.

Ongoing development of Blissymbolics by IDON Corporation, an Ottawa-based research and development

firm, and the Government of Canada will soon allow many of the 30 000 users to communicate over ordinary telephone lines. Testing is now being done in the homes of four Montreal residents. These four, all severely disabled, have become avid users of their Bliss "phones."

Some of the world's most sophisticated medical diagnostic and treatment hardware is designed and manufactured in Canada

Giota Boussios, a 23-year-old woman with cerebral palsy who has one of the computer telephones in her home, cannot speak and cannot move, but can comment using Blissymbolics. Says Boussios, "I never thought I'd be able to do anything. Now I feel it isn't right not to have a telephone." One of her phone-mates, Frank Filipelli, comments, "I never thought I would ever have a telephone in my home. For handicapped people on their own it is very important. More people need to have them."

Indeed, the project has exciting possibilities. Some believe that the system may eventually help speech-impaired people learn to read. Others say it may be possible to add a sound generator to help people understand speech or even learn to speak. Many look forward to the day when the system will link Blissymbolics users in rural areas with centres of Blissymbolics education.

Towards the Future

Developments in Canadian medical technology continue to race ahead. But the main tools in the field are the minds of the researchers and scientists themselves. Reporting advances with explosive speed, they provide medical science with the implements and techniques needed to heal the sick.

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