

Communications aid for paralytics

Paralytics who can neither speak nor use their hands will, it is predicted, be able to communicate by means of their eye movements and an electronic device developed at the University of Toronto.

The instrument, which is mounted on a standard frame for eyeglasses, contains a tiny computer. The user spells out words by looking at letters on a small built-in screen; the words are then typed out by an electronic typewriter.

The inventor, Ken Anderson, a post-graduate student in the Department of Electrical Engineering, says that with a bit of practice the user can spell out words and sentences at a rate of one character a second. "That doesn't seem very fast," he allows, "but what if you have no other way of communicating?"

A quadriplegic woman in her Thirties, who tested the device, was able to learn to use it fairly effectively within half an hour, says the inventor.

The system will be of greatest benefit to incapacitated people who do not have control of their voice and cannot use their hands for sign language or writing. Victims of cerebral palsy, those totally paralyzed by strokes, quadriplegics, as well as many accident cases could be helped with the new aid.

Anderson, who also studies medicine at U of T, points out that most paralytics retain control of eye movement.

The principle of the system — in essence detecting the minute changes in the orientation of the eye as it focuses on different positions on the screen — has been experimented with before, but this is believed to be the first practical device that actually works.

Canada Weekly is published by the Information Services Division, Department of External Affairs, Ottawa, K1A 0G2.

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Cette publication existe également en français sous le titre Hebdo Canada.

Algunos números de esta publicación aparecen también en español bajo el título Noticiario de Canadá.

Ähnliche Ausgaben dieses Informationsblatts erscheinen auch in deutscher Sprache unter dem Titel Profil Kanada.

The device, it is believed, is the first of its kind to use advanced digital electronic circuits, similar to those used in hand calculators.

"The trouble was," Anderson says, "that earlier systems of this kind took hours to set up and then they would work for maybe 30 seconds. Our device takes only 40 seconds to set up. After that, if you don't move the spectacles

too much, you can keep going pretty well as long as you want."

The prototype, excluding the typewriter, cost about \$1,000 to build. Anderson estimates it could be produced for about \$500, using inexpensive, standard, components. He is working at present on further improvement of the original design to make it suitable for commercial production.

News briefs

■ Electoral boundary changes that came into effect on June 11 mean membership in the Commons will swell by 18 to 282 after the next federal election.

■ The Federal Government plans to issue two different kinds of Canada Savings Bonds this fall, Finance Minister Donald Macdonald has announced. One type, called the Regular Interest Bond, will feature the automatic payment of interest by cheque or direct deposit into a bank account on November 1 each year. The other, called the Compound Interest Bond, will permit bondholders to have the interest compounded annually, thereby earning interest on the accumulated interest. The two bonds will be exchangeable for one another, subject to certain conditions.

■ The Canadian Radio-Television and Telecommunications Commission has ordered Bell Canada to convert its pay telephones back to charge only 10 cents a call compared to the present 20 cents. Most other telephone rates are going up.

■ A law setting out the framework for a referendum on Quebec independence will be presented to the Quebec national assembly before its summer recess, Premier René Lévesque said on June 16.

■ The deficit on autos and parts trade with the United States fell to \$137 million in the first three months from a deficit of \$318 million in the comparable 1976 period. Both exports and imports were at record levels.

■ Quebec will take a hard line on advertising, particularly television advertising, and it wants numerous changes to be made, such as banning the use of children in commercials, according to the Associate Minister of Consumer Affairs. If self-regulation does not work, there may be direct government intervention.

■ Long-term capital borrowing by Canadian governments and corporations on the international market in the first quarter of 1977 fell to about \$1 billion, substantially below the total of \$2.8 billion registered in the same period of 1976, Finance Minister Donald Macdonald said on June 18.

■ New Brunswick Premier Hatfield says Prime Minister Trudeau should call a provincial premiers' conference this autumn to discuss constitutional reform and the talks should go ahead even if Quebec Premier Lévesque refuses to attend. Hatfield said the conference could present an alternative solution for the people of Quebec to consider when they voted on independence in the referendum promised by the Quebec government.

■ External Affairs Minister Jamieson said on June 16 that Canada would make strong representations to have discussions of human rights included on the agenda of the Belgrade European security conference.

■ Statistics Canada reported 824,000 people out of work in May, a drop from 914,000 in April, but still about 115,000 higher than in May a year ago. The seasonally-adjusted rate in May dropped to 7.9 per cent from the record 8.3 per cent in April.

■ The Montreal Stock Exchange supports the Quebec government's goal of making Quebec a French unilingual province. The MSE said in a brief presented to a legislature committee on June 14, that the goal of French unilingualism in Quebec was compatible with the Canadian reality.

■ A new forum for consultation by a wide variety of public interests on economic policy matters is advocated in a new Federal Government discussion paper. The paper also proposes that a new wage-and-price monitoring agency be set up to replace the Anti-Inflation Board once controls are lifted.