

### Talking typewriters for the blind

Computer-simulated sound has recently been used to develop a typewriter that can talk to the blind.

Developed by computer science professor Ching Suen of Sir George Williams University, Montreal, and professor Michael Beddoes of the University of British Columbia, Spellex, or talking typewriter, allows a blind person to produce a text free of typographical errors without sighted help, something which has proved extremely difficult in the past.

The Spellex keyboard is connected to a computer and either a speaker or earphones. Each time a key is punched, the computer gives voice to the appropriate letter, number or symbol, and mistakes can be picked up immediately or afterwards. The typist actually hears "cap ai" when the capital "A" key is depressed.

Normally the typist would first type a sound version of the entire text (i.e. without actual printing). "The printer button can be checked so that nothing appears on paper initially," Dr. Suen explains. "When the complete text is typed, the typist can listen to it any number of times and check for mistakes. Using the edit facility he can correct the mistakes and insert or delete phrases. When he is satisfied with the sound copy of the revised text he presses the type command button and the text is printed out, with each line automatically set to the correct length."

Experiments with Spellex have shown that blind people can master the machine in three hours and read "spelled sentences" comfortably at 60 words a minute, says Suen. While Spellex increases typing accuracy significantly, it reduces the speed slightly. However this has proved to be a minor drawback and indeed, in some experiments, blind people typed faster than sighted members of a typing pool.

#### Costs

At present Spellex consists of a fairly large teletype machine and computer. But, says Suen, the prototype for electric typewriters with built-in "spelled speech" units is already under construction, at an estimated parts cost of \$500 (good business typewriters sell for approximately \$500).



Canadian Press photo

### May is the month for mothers

*The United States passed a resolution in 1913 designating the second Sunday in May a national holiday "dedicated to the memory of the best mother in the world, your mother". The observance of Mother's Day soon spread to Latin America, the Orient — and Canada.*

*Canada's most well-known mother, Margaret Trudeau, wife of the Prime Minister, is seen here with her elder*

*son Justin and her husband, at the indoor track and field games at the Maple Leaf Gardens in Toronto last February. Both their sons, Justin aged two years five months, and Alexandre (Sacha), five months, were born on Christmas Day. When she married Pierre Elliott Trudeau in 1971, Margaret was the youngest wife of any head of government in the Western world.*

With about 28,000 blind people in Canada and 400,000 in the U.S., he figures there will be a market large enough to make mass production, and hence reasonable prices, possible.

The Spellex typewriter can be connected to a computer wherever there is a telephone.

#### More devices for the blind

Sound has been applied in Canada in several other ways to assist the blind:

A buzzer has been installed on a traffic light across from the Montreal Association for the Blind which emits a sound when the light is green for pedestrians.

Sonar devices can be carried to indicate how close one is to an object as well as to distinguish, to some extent, between the nature of the objects (e.g. it can signal the difference between telephone poles and foliage).

Blind swimmers can use a machine

which emits a steady beep to help them identify the place on the shore where they entered the water.

A sort of homing device, which comes in two parts, can be used to identify doorways. One part is secured to the door while the blind person carries the other part with him. Once the two parts are within range of each other they emit a sound to guide the person to the door.

Wilfred Williams of the Montreal Association for the Blind sees some drawbacks to these technological aids for the blind. "The more mechanical and electrical devices there are available, the more dependent the blind become. If there is a failure, the dependent person would not know what to do."

The aim of the Association's mobility rehabilitation program is to teach the blind to identify everyday sounds to guide them, he said.