

DETERMINATION and MORE



With Newly Acquired Computer Skills, Pat Takes Charge

By Heather J. Bridgman, M.S., R.E.

In 1954, at age 18, Pat (Klinger) Bodie was diagnosed with poliomyelitis. The polio attacked her motor nerves, causing paralysis but leaving her sensory nerves intact. She was able to move only her head and one wrist. She also suffered respiratory complications and spent a period of time in an iron lung.

Pat was determined, though, to continue her education and go to college. She began working with a local vocational rehabilitation agency—the Toledo branch of the Ohio Rehabilitation Services Commission—in 1959.

With financial assistance from ORSC for tuition and books, Pat attended the University of Toledo. Using the only assistive technology available to her at the time—a manual wheelchair and a mouthstick—Pat typed every paper herself. Friends would sometimes use carbon paper while taking notes in class so she would have a copy. In 1964, Pat graduated cum laude with a degree in English literature and a minor in French.

Getting to Work: The First Time

“When I went to college, I really didn’t know what I was going to do with an education,” Pat recalls. “I was completely paralyzed.” But in 1965, she got her first job with Toledo-based Libby Owens Ford Co. in their technical library. Her minor in French paid off, since the company

owned a subsidiary in France and many documents needed translating. Pat was told during her second interview that despite her disability, she must prove to be as productive as anyone else. She was given a six-month trial period. She stayed 10 years.

“I was very fortunate,” Pat says. “That was back in the early ’70s when there really were not a lot of disabled people out there working.”

Pat’s father transported her to work every day, and an attendant assisted with her books and papers. The company made a dictating machine that she could operate, thus providing her with another piece of technology besides her mouthstick. When her father passed away in 1973 and Pat could no longer get to work, she and Libby Owens Ford arranged for her to work at home so she could retain her insurance benefits. That lasted two years, until Pat decided to move into a nursing home, because she felt that her care was too much for her elderly mother to handle.

The private insurance made it possible for Pat to receive her first powered wheelchair in 1976 through the University of Michigan Rehab Hospital.

More Education

“I went into a nursing home for a month or so thinking that if I liked it, I would stay,” she says. When she first entered the nursing home, Pat realized she was one of the

youngest people in the facility. "When I went into the home, I thought, 'Oh my heavens, how am I ever going to relate?'"

Wanting to understand her environment, Pat decided to obtain more education, this time in geriatrics. ORSC assisted her in obtaining a master's in education in guidance and counseling, focusing on geriatrics, which she received in 1981.

Around this time, Pat met her future husband, Jim, who was also a resident in the nursing home because of benign meningioma, a tumor on the lining of the brain.

she had: She wanted to work for St. John's creating newsletters and calendars, and possibly doing research.

Marianne Wildermuth, administrator at St. John's, wrote a letter to ORSC stating that if Pat could become proficient in the use of computers, she would give her work. There was just one problem: Pat had never touched a computer.

Mary Lou Clemans, Pat's counselor at the Bureau of Vocational Rehabilitation, decided to send Pat to the Assistive Technology Services program at the Franciscan Medical

Initially, Pat wanted voice recognition, but due to the inconsistency of her voice and the fact that she was not yet in a private room at the nursing home, this method was discarded. Pat decided against the chin-controlled joystick because the model she tried was a large system with two monitors, a CPU and another control box. She thought it would be too much to put in her room at the nursing home.

The evaluation process showed that head-pointing would be Pat's most desirable method of access. She had fewer miss-hits, and using it was less fatiguing to her than the other methods. We recommended the HeadMaster Plus and WiViK, an on-screen keyboard, both of which are distributed by Prentke Romich Co.

The HeadMaster allows the head to take the place of the mouse. The user moves his or her head, and the mouse cursor on the screen moves in the same direction. The system consists of a head piece similar to a telephone operator's headset, a sip-and-puff or other auxiliary switch, and a small black box that sits on the computer's monitor to communicate with the headset. The HeadMaster Plus tracks both lateral and rotational head movement, while the switch controls the mouse clicking.

For her computer, we recommended an IBM 486 DX2-66 desktop system, which in January 1995 was top-of-the-line. The system had 8 megabytes of RAM, a 3.5-inch floppy drive, and an internal fax modem. We also ordered a color inkjet printer. Software included Microsoft Publisher, TMAK Click Art- "Newsletter," and PrintShop Deluxe, with WordPerfect for Windows ordered later.



As planning coordinator for Project MORE, Pat leads regular family/consumer information meetings. The meetings are audiotaped, and through her ECU, she operates a cassette player to play back the proceedings and write up the minutes.

Unfortunately, in 1983, Pat began to suffer the effects of post-polio syndrome, which caused further respiratory complications. She was moved to a hospital and slept in an iron lung at night. During the day, she did "frog-breathing" (a method of swallowing air to force air into the lungs).

After three weeks in the hospital, Pat was stabilized with this breathing technique and ready to return to her nursing home facility. However, she was told it could no longer accept her because she was too much of a medical liability. She instead moved to the Wood County home, which, fortunately, had many volunteers and much community support. Jim moved with her, and the couple married in 1986.

In 1991, Pat experienced another episode of respiratory arrest and was placed on a permanent ventilator. Once again, she was required to move due to her medical liability, and she and Jim moved to Mercy St. John's Center in Springfield, Ohio, in 1992. Jim died two years later.

Back to Work

After Jim's death, Pat contacted ORSC again and requested an appointment to act on an idea

Center in Dayton for a computer access evaluation. By this time, Pat was in her second power wheelchair, an Ivacare XPR, purchased with money from family and friends and through a fund-raising event. She was using a chin-controlled joystick.

In no time, Pat was up and running. She was creating newsletters, meeting minutes, fliers, and calendars for the nursing home, and getting paid on a contractual basis. "I never had anything more sophisticated than my mouthstick [for access], until my computer. Now, I don't know what I would do without my computer," Pat says. "I use it 8, 10, 12 hours a day!"

At her first appointment with the Assistive Technology Services program at the Franciscan Medical Center, a team including myself and an occupational therapist, Joyce Peet, helped Pat evaluate several methods of computer access. The equipment trials included voice recognition, a chin-controlled joystick and head-pointing.

Since the ventilator controls Pat's breathing, a sip-and-puff switch was difficult to use. At the time, Pat was using a custom-made switch to operate her room's environmental control unit. This switch was created by John Boer, a friend and member of the maintenance staff at Mercy Medical Center, the hospital affiliated with St. John's Center.

Although the HeadMaster allows for alternate switches for mouse clicking, to provide access to Pat's ECU as well as the computer, John developed a new device consisting of two switches. This device, resembling a couple of Nerf Ping-Pong balls, was the optimal size and sensitivity for Pat's wrist movements. One capitalized on Pat's ability to use ulnar deviation; the other used

In 1994, Pat received her computer, which was funded by ORSC. It also funded my initial and on-going rehab engineering services to provide installation, training and technical support. ORSC also funded services from Ron Miller, a local vendor, to provide additional software training.

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Through her involvement with ORSC, Pat learned about a federally funded grant known as Project MORE (Maximizing Opportunities

Tight Spaces

Fitting all of Pat's equipment in her mom at the nursing home posed quite a challenge. Although comfortable and neat, the room, about 8 feet by 10 feet, did not have a lot of extra room or shelf space.

Pat's Scanning Director, which she had before I met her, sat on the window sill or computer table, with long wires attached to the "Nerf ball" switch on her laptray. Wires were literally strung across the room, and they sometimes would get caught on things, knocking over the device. She used the Scanning Director to control her television, radio and telephone.

To further complicate things, the Scanning Director and computer had to be moved several times during the day to accommodate various activities. Unfortunately, when aides picked

Ohio Department of Education, Project MORE is a systems-change project that empowers people with disabilities and employers to take active roles in career development. Participants pick their own team members from family, friends and members of the community. They also receive a stipend to help fund service providers or purchase equipment. Toledo was the site of a demonstration project, and Pat wanted to become involved.

She began as a member of the consumer team, but wanting to do more, obtained approval of the four managing agencies to become a member of the management team. When the coordinator position for Project MORE's employment demonstration project became available, Pat applied and was selected.

In accepting the job, Pat had to give up some of her computer work at St. John's. Fortunately, another resident and Project MORE participant, Cynthia Fox, has taken over some of Pat's computer work. Cynthia is now employed by St. John's on a contractual basis as well.



Pat's twin bed takes up most of her room in the nursing home. She has only a couple feet on the side and at the end of the bed for her computer and to move.

it up, programming buttons on the front panel would get bumped and interfere with the settings.

The solution was to create an ECU system that Pat could control through her new computer. Because the computer is on wheels, it was available to her anywhere in the room and using it required less assistance.

We decided to use Infra-Red

Direct Control Software and One-For-All remote control, both by Home Automation Systems. The system provides an on-screen representation of the remote control, so all features could be accessed by Pat's HeadMaster Plus. The One-For-All remote was capable of learning signals for any infrared remote control, including Pat's cassette player.

Pat's new duties include tracking the daily operations of Project MORE. She works one-on-one with participants by facilitating their team meetings and setting up in-services for family and team members.

Part of her duties consist of taking notes during meetings. To do this, she records the meeting and writes the notes up later as the tape is played back. We decided a simple portable tape recorder could be used during the meeting. To play back the tape, John Boer and I devised an ECU that runs through Pat's computer. It uses a universal remote control that understands signals from any remote control device. We found a basic stereo system with a dual cassette player that allows remote control operation of all cassette tape functions, such as fast forward and rewind. Using her earnings, Pat decided to purchase these items independently.

Pat is also assuming some of the financial responsibility for equipment upgrades and plans to assume full responsibility in the near future. "I am independent," she says, "and so happy to be productive again."

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Pat's support group was important to her success in learning the computer and being hired as a planning coordinator of Project MORE's demonstration project. From left are Mary Lou Clemans, Ohio Bureau of Vocational Rehabilitation; Pat; Heather; John Boer, Mercy Medical Center; Cynthia Fox; Marianne Wildermuth, St John's Center; and Sharon Pruzanic, Project MORE.

and Resources for Employment). A collaborative effort among the Ohio Rehabilitation Services Commission, Ohio Department of Mental Retardation/Developmental Disabilities, Ohio Department of Mental Health and