



## Reinventing *DAVID'S WHEELS*

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As Executive Director of the Society for Manitobans with Disabilities, David Steen is a man on the move. Thanks to the innovations developed by EMAT staff, he is now going places in style behind the wheel of his specially adapted 2002 GMC SLE 4X4 truck.

"A lot of the adaptations involved disconnecting electronic switches and relocating them to suit the driver's specific needs," says rehabilitation specialist Paul Tustin. "This particular truck is the largest vehicle we've ever adapted although the principles of the work are the same as they are on smaller vehicles."

EMAT had previously worked its technological magic on David's 1973 Dodge Dart and again on his 1986 Toyota Four-Runner. He consulted EMAT staff before purchasing the GMC vehicle to ensure it had the type of steering column and controls conducive to modification.

It did and the EMAT team – including Paul, Ed Slyker and Dennis Stanley with input from other EMAT staff -- soon went to work to convert the truck into a customized vehicle meeting David's need for reduced reliance on hand control and greater foot operation. Paul says EMAT is capable of making "any adaptation not commercially available."

David's new truck now has a steering disc on the floor which he turns with his right foot. The gas and brake pedals

were moved and are now operated by his left foot. Turn signals and windshield wipers are operated through an EMAT designed micro controller called a Barkerboard. This controller allows the driver to operate different functions with a single input switch. Existing switches for the door locks, power windows and electronic four-wheel drive were moved to floor level where David is able to operate them with his feet. A commercially available electric shifter was installed which is also operated with his foot.

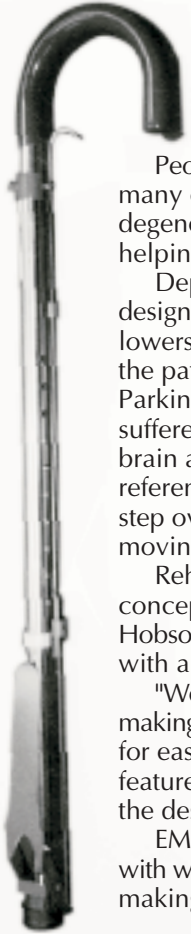
The results of their work are remarkable and, more importantly, enabling to people like David.

David says the EMAT team's work is helping many people to live independently in the community as well as promoting quality of life through both high-tech solutions, like the truck adaptation, and low-tech solutions such as devices that enable people to move easily from a wheelchair into the driver's seat.

"From the consumer's point of view, these people are miracle workers," says David. "They don't just tinker with someone else's technology as I know they develop much of their own. Every step of the way is innovation."



# Helping Parkinson's Clients Walk *Special Devices* Provide Needed Lift



People who live with Parkinson's Disease face many challenges in their struggle with this degenerative disease and the EMAT team is helping them overcome at least one hurdle.

Department staff have developed a specially designed cane with a hand-operated trigger that lowers a retractable, spring-loaded antenna into the path of the user. One of the mysteries of Parkinson's is the disease's ability to "freeze" sufferers in their tracks when messages to the brain are interrupted. With the antenna as a reference point, the user's brain is stimulated to step over it, thereby enabling them to continue moving forward on their own.

Rehabilitation specialist Paul Tustin says the concept resulted from a request from Dr. Doug Hobson who sent the department a wooden cane with a non-retractable reference point.

"We improved on the original concept by making the antenna retractable and multi-coloured for easier visibility," says Paul. "The design is featured on our web site, generating interest in the design from people as far away as Italy."

EMAT has developed a similar design for use with walkers and the low-tech solution is currently making life a little easier for 12 to 15 users.

Helping other people is often an "uplifting" experience for many and EMAT staff might know the feeling better than most.

The department has developed many lifting devices to help people live their lives as independently as possible, and their work continues.

According to EMAT rehabilitation specialist Paul Tustin, the department strives to meet the lifting needs of clients, from personal lifts to devices that make daily chores easier for people with limited mobility. Paul says there are a wide variety of devices already available, including devices to lift people from wheelchair height to vehicle or bed height. There are also devices to assist people who may be helpless if they should fall, lifting them to a height where they can help themselves. Still other devices help wheelchair users lift and transport heavy items like a holiday turkey from oven to counter.

"All of these devices are designed to suit individual specifications," says Paul, noting needs assessments are conducted with clients, families and therapists. "Safety is always the utmost consideration in everything we design."



## CAOT Salutes EMAT

EMAT was recently honoured with a special citation award "in recognition of significant contributions and support to the profession of occupational therapy." The Canadian Association of Occupational Therapists presented the prestigious award at its annual general meeting in October.

Nominated by the organization's provincial chapter, EMAT staff received a special commemorative plaque and a large box of chocolate bars, no doubt to help give our staff the energy needed to continue helping their clients.

**EMAT**  
in the Community



Always willing to share their expertise with the community at large, EMAT staff conducted presentations at two prominent industry-related events in recent months.

At St. Amant Centre's 11<sup>th</sup> annual conference on Research and Applications Related to Developmental Disabilities, EMAT Rehab. Engineer Bill Brereton presented a paper about the "Electronic and Mechanical Assistive Technologies Program at Winnipeg's Health Sciences Centre: Designing, Building and Maintaining Assistive Technology - A Publicly Insured Service for Manitobans."

A few weeks later, Bill made two presentations to members of the Canadian National Agricultural Safety Association; both on innovations promoting farm safety. The event was co-sponsored by the Canadian Farmers with Disabilities.