

# gizmo

THE TETRA SOCIETY OF NORTH AMERICA: CUSTOM ASSISTIVE DEVICES

## Three-in-one innovation solves year-round need

**REGINA:** When asked to come up with a design for a child's sled, a Tetra volunteer suggested instead a multi-use device equally at home on snow, trails and roads.

Sara Gunn asked Tetra to create a sled for her daughter Leandra, currently three-and-a-half, because it is tough to push a wheelchair over the town's wintery sidewalks. But volunteer Gerry Wurtak, figuring that the town is only snowy half the year came up with an innovative, year-round design – a three-in-one device that combines the functions of stroller, bicycle trailer and sled.

Wurtak adapted a running stroller to create a lightweight device, with removable parts securely held in place with pull-pin locking devices.

With a little unclipping, it goes from being a three-wheeled stroller, to a two-wheeled trailer tethered behind a bike, to a sled sitting on two sleek runners. Features include:

- When used as a stroller, the person pushing has access to a brake and emergency button;
- When it's a bike trailer, the front wheel is removed, and the arm that connects the unit to the bicycle clips into its place;
- And when functioning as a sled, all three wheels are removed, runners are slotted into place, and a pull bar clips into the housing for the front wheel.

The design allows the use of Leandra's detachable wheelchair seat, reclined at a 45-degree angle as she lacks muscle tone in her neck and shoulders. It is designed to allow for a larger seat and lower footrests as she grows.

"She loves it," said Leandra's grandmother, Tania Kutsak – she is helping out with Leandra as mom Sarah is pregnant with

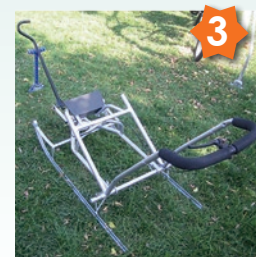
her second child, due in October. "Leandra loves having the wind in her face – it's her favourite thing in the world."

Kutsak said the family goes for walks and bike rides most days with Leandra, who has cerebral palsy due to a congenital viral infection.

"We originally wanted something to pull behind us when we went for walks in the winter, not for downhill tobogganing. We go for walks quite often, but trying to get her wheelchair through snow is very difficult. The front wheels get stuck in snow banks and ruts and slush.

"We bought her a little sled from Canadian Tire for Christmas. She was quite sick and never got to use it, and now she's too big for it this year."

An occupational therapist at the Wascana Rehab Centre, Regina, recommended Tetra. The family first spoke to Wurtak in June. He delivered the project in mid-July.



**EASY AS 1-2-3:**  
IT'S A BIKE TRAILER,  
IT'S A STROLLER,  
IT'S A SLED...

**ON THE ROAD:** (ABOVE)  
MOM SARA GUNN WITH  
LEANDRA (PICTURE WAS  
POSED, HELMETS ARE  
WORN WHEN IN USE)

**INSET:** LEANDRA GUNN



### NOW MORE ACCESSIBLE

The Tetra Society of North America, along with other societies that make up the Sam Sullivan Disability Foundation, has added a new dimension to its online presence.

A link on the Tetra home page now explains, in traditional and simplified Chinese characters, how Tetra volunteers provide customized assistive devices to people with disabilities.

According to Statistics Canada, "Canadians of Chinese origin make up the largest non-European ethnic origin in Canada" – totaling just over one million people. Meanwhile,

according to the US Census Bureau, the Chinese community there numbers approximately 3.6 million.

(It is not known what percentage of Chinese North Americans have disabilities, but the US Census Bureau reports 18.1 per cent of Americans have some form of disability.)

"We are very excited to be launching our new Chinese language web pages, which will broaden our reach and help ensure that our programs are open to all residents of Canada and the United States," explained Tetra's executive director Duane Geddes.

## 中文簡介

# GTA Gizmo Awards:

## TETRA VOLUNTEERS THANKED FOR BREAKING DOWN BARRIERS

### Simple kitchen table provides the best solution

**HALIFAX:** A deceptively simple Tetra project should net some worthwhile results for clients in a group home.

Halifax's Tetra group was asked to enable residents with disabilities to move towards independence by creating a wheelchair accessible food preparation surface, which would not cause an obstruction in the kitchen. Volunteer Bob Hirtle scratch-built a Duncan-Fyfe-style foldaway table, which can be wheeled away when not in use.

"It was a very simple project, really," he said. "The people at the group home wanted a table they could roll two wheelchairs under, and sit each side and prepare food.

"Staff are training the clients there to be self-sufficient, so they can live by themselves. Then they go and get apartments in various parts of the city."

He said the table is 102 cm (40 ins.) wide, with two large, fold-away leaves. He made it on wheels so it can be pushed against the kitchen wall like an end table when not in use.

He built the table from oak plywood because it was easier than adapting an existing model. However, Hirtle has a quite a reputation for scouring suitable parts from the area's second hand stores, which he modifies for Tetra projects. "It keeps the costs down and recycles as well," he said.

Now in his fourth year with Tetra, Hirtle says the best part of volunteering with the non-profit is the unpredictability.

"It's fun because you never know what you will get," he says. "But I'd say 90 per cent of the enjoyment comes from dreaming up what you can do to make it work for them. Actually building the device is the easiest part of it."

He said a memorable recent project involved creating a plastic joystick cover for a lady's power wheelchair to prevent people accidentally knocking the controls when talking to her and causing the chair to jolt.

**ONTARIO CHAPTERS:** Volunteer engineers were honoured for designing devices that remove some of the barriers faced by people with disabilities in the Greater Toronto Area (GTA).

Their work was recognized at the 2009 GTA Gizmo Awards in July, which brought together around 100 clients, volunteers and supporters. It was held at Rose Theatre, Brampton, and admission included a performance of the Norm Foster golf-themed play, *Foursome*.

Ontario Lieutenant-Governor David Onley presented awards, speaking of his great respect for the Tetra organization and the Toronto, York, Hamilton, Peel and London chapters being featured.

Highlighted were an adapted chair that allows a 10-year-old Hamilton boy to venture out in the snow with his parents; a project that enables a man to continue playing pool following an injury that left him in a wheelchair; a contoured wheelchair joystick handle; and a wheelchair grocery cart.

Organizer Glenn Barnes, Tetra's Ontario development coordinator, said that the event raised funds, but also sent a message to the community.

"The tangible result is an amount of money, but the general message we send to people is priceless," he said. "You cannot buy that kind of understanding.

"It's one thing telling people about the concept of Tetra, but people often don't fully



**BEHIND THE SCENES:** (BACK ROW) TETRA EXECUTIVE DIRECTOR DUANE GEDDES, SYLVIA BALIKO, AHTHAVAN SHURESHKUMAR; (FRONT) GLENN BARNES AND THE HON. DAVID ONLEY

understand until you show them the actual devices created by volunteers. You show them a wheelchair sled or an adaptive pool cue, and it is immediately clear what Tetra is all about.

"Another great aspect of the event is, of course, to say thank-you to the volunteers. We would not be able to offer the projects if people did not donate their time and expertise."

Barnes described the ceremony as "an elegant event" that "showed what Tetra is all about" and was particularly impressed by Onley's "fine words about the organization."

The Lieutenant-Governor spoke of how Tetra is in the business of helping people to overcome barriers, and so face greater opportunities than they would otherwise.

## In the spotlight

### THE FOLLOWING PRIZES WERE AWARDED:

**COMMUNITY IMPACT AWARD**  
Joe Ruitenberg, London Chapter, for his long-standing dedicated service with the London Chapter.

**TOOLS FOR TYKES AWARD**  
Mike McNally and Sylvia Baliko, Hamilton Chapter, for building an adapted snow'n'rec chair.

**MOST INNOVATIVE AWARD**  
Jorge Silva, Metro Toronto Chapter, for building a specially contoured wheelchair joystick handle.

**DEBBIE DONALD QUALITY OF LIFE AWARD**  
Athavan Sureshkuma, Peel Region, for his wheelchair grocery cart.

**GIZMO OF THE YEAR AWARD**  
David Crane, Metro Toronto Chapter, for his adapted/reinforced pool cue.



**MOST INNOVATIVE AWARD WINNER:** JORGE SILVA AND THE HON. DAVID ONLEY

# Technology & Independence:

## DESIGNING A SOLUTION THAT MAINTAINS COMFORT WHILE INCREASING EASE OF USE



**BACK PAIN SOLUTION:** PHIL THOMAS (ABOVE) USING HIS NEW TETRA COMPUTER STAND.

**GUELPH:** A Tetra solution “makes a difference every day” to a New Hamburg man with a range of health problems.

Phil Thomas, 66, worked with his local Tetra chapter to find a way to use his computer with comfort and independence. As active as he can be with health conditions including serious back pain, Parkinson’s disease, prostate cancer, kidney disease and lung disease, he tries to spend two to three hours a day using his computer.

However, Thomas’s back pain is such that he can only sit in a regular chair for five minutes before having to stand for another five. His occupational therapist found the solution. He now sits in a recliner, which is so successful he had the shape reproduced in foam to create a bed.

“When you are lying back in a chair, you soon realize a computer was designed to be used at a desk,” said Thomas. “It was difficult to get it close and access the peripherals.”

“We rented a hospital food tray as a temporary solution; however, it had many drawbacks – aesthetics, instability and difficult to adjust.”

Precariously balancing his 11-kg (28-lbs) Apple iMac on a hospital tray did not work out. The tray wheels did not slide under his chair – as they are designed to do with a bed – and Thomas needed assistance with it when he moved in or out of the chair.

His occupational therapist recommended Tetra, and he soon found himself talking to Guelph chapter coordinator Ross Morrow and technical volunteer Elgin Featherston.



“It was kind of hard to figure out what it was we would do – but then, there is no easy Tetra project,” said Featherston. “Originally we were thinking of building another type of hospital tray that would be easier to move, but that didn’t work out.”

“But Phil had this articulated arm he had bought for the computer, the type you can attach to a wall or a desk. There was no wall nearby for it, and no way to attach it to the chair readily.”

“So what I did was build a column beside the chair and mount the column on a base that was big enough to set the chair on. There is a tray, or small table, he can store his keyboard on.”

The chair is heavy enough to counterbalance the computer, so there is no fear of tipping when Thomas stands, and being separate means it can be moved out, if required.

Thomas said Featherston even created a portable tray to house his keyboard and mouse, and that the complete project has made a big difference as “computing fills a large part of my waking hours,” ranging from banking to writing to web surfing.

Wife Marilyn said: “We are thankful every single day for the Tetra solution to Phil’s request. It makes a difference every day. It’s so perfect. It’s amazing.”

Featherston, a retired engineer, was modest about his work. He added that Tetra represents “a perfect opportunity to put whatever talent I have to use.”

### TETRA ELECTRONIC SPECIALIST SUPPLIES SOUND ADVICE

**NANAIMO:** An ingenious Tetra project to enable a lady with multiple sclerosis to operate her Lifeline emergency call service has a side benefit: she is now able to answer the phone.

Nanaimo coordinator Martyn Kinsella-Jones was asked to find a way to enable Sharryl Lafortune to continue to rely on the Lifeline service after her condition had progressed to where she was physically unable to press a button or manipulate a switch.

The Nanaimo Lifeline program serves more than 1,030 households, offering a service to those “medically at risk when alone.” Typically, users wear a small unit around their necks, and can push a switch to call for help if they fall or otherwise need immediate attention.

The system is connected to the user’s phone, which dials out to a monitored switchboard if there is an emergency.

“Unfortunately, the client has no motor function in her hand,” said Kinsella-Jones. “So we had to see if we could do something voice-activated. One of our volunteers is an electronic specialist, who came up with a voice-activated switch. We tested it and it worked first time.”

“The people at Lifeline said it works like a charm. There might be some interest in a voice-activated switch, as there are others with a similar level of function.”

The microphone is attached to the client’s bed, he explained, which means that Sharryl has only to turn her head and raise her voice slightly if she needs help. He said that she has an attendant during the day, but the project enables the client’s husband, Mike, to step out of earshot.

“We also found the client can answer the phone using her switch, which is a bonus,” said Kinsella-Jones. “If her phone is set to hands free, she can take the call.”



**SOUND INVESTMENT:** THE VOICE ACTIVATED LIFELINE SWITCH.

## TETRA VOLUNTEER IS TURNING OVER A NEW LEAF



**PAGE TURNER:** REMAP CLIENT KARIS USING A PAGE TURNER TO STUDY INDEPENDENTLY. A SIMILAR MODEL IS NOW AVAILABLE VIA TETRA.

**KAMLOOPS:** A Tetra volunteer is putting the finishing touches to a page turner that can be built and shipped across North America.

Ralph Adams built a page turner, which he uses as an example of adaptive ingenuity, in conjunction with the UK equivalent of Tetra.

He decided to build a page turner after talking to Tetra colleagues in Vancouver, and subsequently learned of one created by English and Scottish REMAP chapters, whose volunteers shipped plans and parts.

“The REMAP page-turner is an excellent example of the devices that the Tetra Society and REMAP build: it requires skills in electronics, woodwork, metalwork, and drafting,” said Adams. “It was built by a team of volunteers with different skills, separated by long distances – and it increases the independence of those using it.”

He says the design allows flexibility, as it allows users to read paperbacks and also to turn back a page, in case they accidentally skip ahead; many commercial models allow neither. It can be operated by a mouth-operated sip n’ puff switch, if required.

For now, Adams is using his model to recruit volunteers and promote Tetra to potential clients. He is modifying the plans to change it from European metric construction to imperial, and to include a motor that is readily available in North America, so it can be more readily replicated this side of the Atlantic.

“The total cost appears to be around \$300, the largest part being the electronics and motors needed,” he added. “Delivery would be about a month, assuming I’m making one at a time.”

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