

The bionic arm, shown here on Danny Letain, has sensors that can pick up muscle movement in his arm and allow him individual finger control.

Injured worker competing in Cyborg Olympics, offers hope for amputees

By Marnie Douglas

While the Paralympians compete in the Summer Olympics this September, a former Canadian Paralympic athlete is training for a unique Olympic-style competition in October, the Cyborg Olympics.

Danny Letain is a former Paralympic downhill skier who lost his left arm below the elbow 35 years ago in a workplace railway accident. The 58-year-old retired railway manager has never let the accident slow him down, however, and he stays active teaching barefooting and waterskiing in Maple Ridge.

Letain currently uses a body-powered artificial limb with a hook and a series of straps that mechanically maneuver the prosthesis.

Bionic man

But a robotic arm prosthesis being developed at Simon Fraser University is giving hope to upper limb amputees like Letain. The SFU team's new control system on the advanced bionic hand allows for a variety of different grip patterns that Letain says are "miles beyond" what he could achieve with his prosthetic device. The sensors pick up muscle movement from his stump and move the fingers of his hand.

"It allows me to operate all five fingers individually. It's amazing technology and I'm so excited to be a part of this team," he says.

Letain will travel to Zurich, Switzerland, this October for the inaugural Cyborg Olympics — the first-ever opportunity for individuals with physical disabilities to

compete in six different events using cutting-edge technology.

Danny is the “pilot” member of SFU’s eight-person MASS (Mass Activity Sensor Strip) Impact team, joining engineers, scientists, and prosthetists.

He’s entered in the Powered Arm Race category, where he’ll use the MASS Impact Arm to complete up to 60 everyday tasks, including picking up a paper clip and hanging laundry, in less than eight minutes.

WorkSafeBC lends support

Lloyd Deering, special needs officer with WorkSafeBC, said he heard about Letain’s involvement in the pilot project and then looked for an opportunity to also participate. Through its community relations funds and the support of Special Care Services, WorkSafeBC is contributing \$1,000 toward Letain’s costs to participate in the Cyborg Olympics, which has attracted more than 200 athletes from across the globe. MASS Impact is the only Canadian team.

“I met with Danny and took the information to our Community Relations group. He’s definitely stretching the limits, going beyond the norm. Plus, he’s advancing new technology, which we support whole-heartedly.”

“It allows me to operate all five fingers individually. It’s amazing technology.”

—**Danny Letain**, retired railway manager and competitor in the Cyborg Olympics

Scott McCloy, WorkSafeBC’s director of Government, Community and Media Relations, says supporting Letain was “just the right thing to do” given that WorkSafeBC is always working to improve the quality of life for injured workers. And his project meets those objectives.

“Danny got involved in this project all on his own, but when we heard about it, we wanted to help for sure. It supports improvements in the future for injured workers, and we hope the technology will eventually be more accessible for more amputees,” he adds.

Currently, the arm is only available for competition; it’s not yet ready for everyday use. But once the Cyborg Olympics are over, the SFU team will continue to refine and work on the arm. ☺

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