



Link Line



an update from **MASHA** on **YOUR** Mine Rescue program

Issue #7 December 2008

FAREWELL MONITRON, HELLO SENTINEL

In the new year, Ontario Mine Rescue will begin to say a long farewell to the Monitron, the electronic warning, test and pressure display system that monitors oxygen use on the BG4.

Drager Safety, manufacturer of the BG4 and the Monitron, has ceased production of the electronic display device, replacing it with a new electronics system featuring the Sentinel display unit, already in use elsewhere in North America and internationally.

Mine rescuers in Red Lake and Thunder Bay districts will be the first trained in Ontario to use the new system, which will be rolled out across the province over the next three years. Training materials have already been prepared for the new electronics

system.

Mine Rescue Officer/Consultants will begin to replace the Monitron and train mine rescuers on the Sentinel during refresher courses beginning in January. The Monitrons will be used as backups for districts that still use them.

The rollout should be completed across the province in 2011.

While the Sentinel fulfills the same basic function as the Monitron to monitor the remaining oxygen supply in the BG4, it offers several advances, including measuring the oxygen supply in minutes based on the wearer's breathing rate, calculating the wearer's absorbed body temperature – an indicator of heat stress, as well as a panic button and a “man down” alarm for mine rescuers in distress.



The Sentinel electronic display unit.

Eager for a rematch

Dave Lachance wants a rematch.

The captain of the first Ontario team to compete in the International Mines Rescue competition is pleased with their fifth place result, but believes he

and his Xstrata Nickel Fraser/TL Mine teammates, Ontario provincial champions, can challenge for the top.

“We’d love to (go back). We’d even love to see it hosted here in Canada,”

Lachance said, of the team’s appearance at the sixth International Mines Rescue competition in Reno, Nevada in July.

“We were the only ones to be there for the first time,” said Lachance, whose team competed

Fraser/TL team claims international fifth

against mine rescuers from Saskatchewan and nine other countries including Peru, Russia, India, the U.S., Poland, and the winner, Australia.

That experience will advance the team toward the top rung, Lachance said. Though the team was aware of the international competition after winning the Ontario competition in early June, it wasn’t until July that they learned they would represent Canada at the biennial event.

“We had about two weeks advance notice the competition was coming up,” he said. Preparation included getting “as much information as we could from MSHA about their rules and

Continued on page 2



Xstrata Nickel Fraser/TL mine rescuers are keen to improve on a fifth-place finish at their first international competition.

We need you!

If you have comments about the newsletter, or suggestions for future articles, please contact Susan Haldane at MASHA, (705) 474-7233 ext. 261, or susanhaldane@masha.on.ca



**Mines and Aggregates
Safety and Health
Association**

P.O. Box 2050, Stn. Main
690 McKeown Ave.
North Bay, ON P1B 9P1
PH: (705) 474-7233
FAX: (705) 472-5800
[www.masha.on.ca/
mine_rescue](http://www.masha.on.ca/mine_rescue)

New on the Web! Mine Rescue

Ontario Mine Rescue is on the web. No longer just a page or two linked

to MASHA's website (www.masha.on.ca), the new section features a

broad range of information and news relevant to Ontario Mine Rescuers.

Basic information includes a concise history of mine rescue in Ontario, contact information on current mine rescue stations, course descriptions, lists of mine rescue equipment and products, a summary of current research projects and more.

Through the site visitors can also review the winners and photos of recent provincial mine rescue competitions, as well as the current and archived editions of Link Line.

Bookmark it at www.masha.on.ca/mine_rescue.



ABOUT US

Ontario Mine Rescue, a part of the Mines and Aggregates Safety and Health Association (MASHA), over eight decades has trained and equipped thousands of volunteers who have fought fires, rescued injured personnel, and responded professionally to a wide array of incidents in the province's mines.

Under the authority of the Occupational Health and Safety Act and headquartered in Sudbury, Ontario Mine Rescue staffs, equips and maintains a network of mine rescue stations across the province that ensure mines within a specified geographic area have adequate emergency response capability.

Our role includes delivering training to first responders, providing advice, conducting periodic audits, ensuring MASHA-owned equipment is maintained to the manufacturers' recommended standards, and providing advice during a mine emergency.

Since its creation in 1929, Ontario Mine Rescue has established a reputation for high standards in training, equipment and emergency response, as well as in the development of good, safe mine rescue practices. We have served as an example for the establishment of training and safety programs to mine rescue organizations in other provinces and countries.

MASHA maintains a Mine Rescue Technical Advisory Committee (TAC) that provides advice and guidance to Ontario Mine Rescue. Under the leadership of the committee, we remain committed to continual improvement, ensuring the mining industry's mine rescue needs are met.

Reno rematch...continued from page 1

procedures.”

The U.S. Mines Safety and Health Administration (MSHA) was the host for this year's competition, held at the same time 20 American mine rescue teams battled in the U.S. National Mine Rescue Competition.

“The difficulty (of the scenario) was about the same” as those faced in provincial and district competitions, Lachance said. The team was told four men were missing underground and there were reports of smoke. “We were to find the missing miners and find the source of the smoke.”

The challenges were in adjusting to the differences – some in equipment, some in how the scenario is presented.

“It was pretty interesting to see the differences. They don't use a briefing officer. They use a guy to do mapping,” Lachance said. Map symbols are different, stretchers are equipped with wheels and, instead of radios, communication with the surface was by telephone – and a large reel containing hundreds of feet of wire that unwound as it accompanied the team.

Unlike Ontario scenarios, “it's more of a mock set up. Instead of an injured guy, there's a paper on the ground with all the information” about the injured victim, he said.

Also, “it's all based on time. You have 90 minutes to find a solution and then you're pulled off,” the team captain said, whether you succeeded

or not.

“We did complete it on time.”

And there was another noteworthy difference.

“It was a bit of an eye opener,” said Lachance. While in Ontario competitions every victim makes it, in the Reno competition “one guy could not be rescued, which in reality is possible.”

For the magnitude of the event – 30 rescue teams, one large convention centre, and several teams competing at once in different

floor areas – “it was extremely well organized,” he said. A translator, if necessary, was provided to each international team.

Organizers used eight different floor plans and changed the scenario slightly for the second day to ensure no team could gain helpful advanced knowledge, and judges presented their results to each team 20 minutes after they competed.

“You get your sheets and score, and you get 15 minutes to review and appeal,” Lachance said. “We appealed a few things and got a few points back.”

Xstrata's first aid crew of Joe Hinich, Pete Coderre and Greg Nadeau starred in the first aid mini-

competition, one of three mini-competitions, he said.

The trio were presented with a group of injured “victims” with realistic makeup and symptoms, and within a set time had to assess the injuries, determine the order of treatment, and begin treatment.

“They did extremely well and they only took two demerits,” placing them among the top finishers, said Lachance, crediting “our first aid training

in Sudbury is excellent.”

Other team members include Terry Dubois, Luc

Lalonde, Cliff Poirier and Dale Kinnonen.

The other two mini-competitions, involving regular team members repairing equipment, set them at a bit of a disadvantage despite some extra training before leaving for Reno.

In Ontario if something, like an iTX, doesn't work, a technician will fix it. “We just grab another and go,” Lachance said, but they want the equipment fixed first.

“I don't see that as an advantage. In an emergency you don't want to waste time fixing something,” he said.

“But at the end of the day, we all do things pretty similarly,” Lachance said. “We're there to try to save lives.”

“...at the end of the day, we all do things pretty similarly. We're there trying to save lives.”

Visiting the afterlife

If there's an afterlife for mine rescue equipment, it's the Ontario Mine Rescue exhibit at the Elliot Lake Nuclear and Mining Museum.

The exhibit has a BG 174, a Type N gas mask, Scott Air Pak, field phones, gas testing equipment, flame safety lamps, and an OXY SR45, says Ken Pierce, listing some of the artifacts in the exhibit he was instrumental in establishing.

The museum proudly declares itself the curator of the largest collection of mine rescue equipment in Ontario, if not Canada. The museum, in the city's Lester B. Pearson Centre, is also the northern home to the Canadian Mining Hall of Fame.

Pierce, a mine rescue officer for 20 years at the former Elliot Lake Mine Rescue Station, helped established the exhibit when the station closed in 1996 with the closing of the Stanleigh Mine, the area's last operating ura-

nium mine.

While most of the station's supplies and equipment were removed, thanks to Ontario Mine Rescue and Pierce, who decided to retire rather than move to another mine rescue station, much was donated to be preserved in the exhibit.

"We kept material here that would be of value to our museum and help keep our heritage in mining alive," said Pierce, who had moved to Elliot Lake in 1957 to work at the Rio Algom Mine where he became a mine rescuer.



Former MRO Ken Pierce with the mine rescue collection at the Elliot Lake museum.

Ontario Mine Rescue has continued to support the collection, though not financially, but by donating out-of-service equipment.

The museum traces the history of the Elliot Lake area from the lumbering and trapping days through the discovery of uranium mining, milling, and uses of uranium. It also traces the development of area mines and mine rescue, both in the district and Ontario.

That valuable heritage includes pictures of all the Elliot Lake District mine rescue competition winners from 1957 to 1996, as well as the district competition trophy. Approximately 1,500 mine rescuers were trained at the station over its 41-year history and for 15 of those years Elliot Lake mine rescuers won the provincial competition.

The collection of equipment is remarkably complete, Pearce said, though it lacks some of the modern pieces, such as a BG4 breathing apparatus.

"I don't think they would like to have one just sitting here," he said.

"Periodically, I go down to make sure everything is in place," said Pierce, who spends less time at the museum now than when the exhibit was being established, but still gives presentations on Ontario Mine Rescue to school groups and tourists.

"We start right back there with the Hollinger Fire in '28," and keep going to present days, he said.

"They're quite impressed, particularly those from southern Ontario and the U.S.," who are unaware of how well prepared and organized the efforts are to rescue lives and deal with mine emergencies, Pierce said.

Among the mine rescue exhibits at the Elliot Lake Nuclear and Mining Museum are photographs of mine rescue teams over the years.



Waiting for the call

Bob McLean is ready for the next callout.

The Mine Rescue Training Advisory Committee member may be out of practice, not having trained in more than 10 years, but with 30 or so years of experience, he's still ready.

"I really enjoyed my time in mine rescue," said McLean, who "sort of retired" from active mine rescue work in the early 1990s, but never stopped contributing or being prepared to answer the call.

"If the need was there, I was ready to throw the BG174 on my back and go underground," said McLean of his first years out of active service.

"The 174 was a top notch apparatus," said McLean, who as a TAC member approved the BG4 as a replacement for the 174.

"The first time I wore an apparatus was the mid 1960s – December 1963," said McLean, who trained on a McCaa apparatus.

"It's totally different. I wore the nose clip and the mouth piece and that tasted terrible."

McLean never wore the McCaa on a callout. It was replaced by the BG174 in 1966. The BG174 was a major improvement; one he learned to love inside out.

Continued on page 4

Just how hot IS it?

Research assesses heat stress risk in mine rescuers

Dr. Stephen Hardcastle wants to know how hot it is . . . not outside and not in a mine, but deep down inside hard-working miners, and in particularly, hard-working mine rescuers responding to a mine emergency.

Earlier this year two teams of Ontario Mine Rescue volunteers were put through their paces at Vale Inco's Garson Mine, while Hardcastle and researchers from the University of Ottawa monitored their working level and their internal body temperatures.

"The researchers were very happy with the results and the data it gave them," said Hardcastle, of CANMET Mining and Mineral Sciences Laboratories, who is directing the research for the Deep Mining Research Consortium and its partners, including MASHA and Ontario Mine Rescue.

The research project is to help determine work/rest ratios for different mining tasks under normal to severe environmental conditions so that workers can maintain a steady core body temperature and avoid heat stress situations, an important consideration as mines go deeper.

Heat stress occurs when the body's cooling system is overloaded, causing a rise in the body's core temperature. The nature of mine rescue – psychologically and physically challenging work in hot, often humid, and poorly ventilated environments – places mine rescuers at greater risk of suffering a heat stress disorder.

Researchers and Ontario Mine Rescue also hope to find the best indicator of a worker's core body temperature and an instrument to assess the risk of heat stress injury. Methods used in other jurisdictions centre

on monitoring ambient temperatures using wet bulb globe thermometers and work levels.

"Current screening measurements are a blunt instrument," said Hardcastle, pointing out that variables such as age, hydration, fitness and general health, mean that each individual will have a different tolerance.

Mine rescuers involved in the Garson study swallowed a pill-size sensor that monitored their internal body temperature and transmitted the results to a nearby receiver-equipped computer. They were also wired to monitor skin temperature and heart rate.

"The data will be used to better replicate results in the lab," he said, where volunteers do "work" in a hu-



Researchers monitored internal body temperature, skin temperature and heart rate.

man-sized "pop can" or calorimeter, an environmental chamber in which the temperature and humidity can be controlled and the volunteers more easily monitored.

The research will not uncover any new methods to control heat stress, Hardcastle said. The best methods are already known – appropriate rest periods to cool down and proper hydration, drinking water, before, during (if possible) and after completing a task.

Water is key, he said, "there's nothing like water."

Waiting for the call ...continued from page 3

"We had to take them apart and put them together wearing a blindfold. We used to have competitions to see who could do it fastest."

After training in Kirkland Lake with Kerr Addison, McLean moved to Rio Algom in Elliot Lake and received both refresher and competitive training from Ron Eveson, then the district's Mine Rescue Officer and a hard task master.

"We had some great teams there."

McLean was on the provincial competition winning team in 1972 and 1973, and won the district again in 1974 but missed out on a provincial three-peat.

The hard training had more than competitive benefits, preparing mine rescuers for the challenging work of saving lives. McLean doesn't know how many callouts he's responded to, but he remembers the 1981 Denison Mine Fire.

"That was something else. That was so scary," he said, of the conveyor belt fire that burned out of control for more than 24 hours and took 60 hours to extinguish. Three miners were missing and the dense, black smoke cut visibility to nothing.

"The scariest time is when you're waiting (to go in)," he said. Then "the adrenalin just flows though your veins and you're just going."

Mine rescuers extinguished the fire, in part by cutting the conveyor belt on either side of the fire to starve it, and found the missing miners in a refuge station.

"It takes a lot out of mine rescue members who go into these situations but you're trained to do it and you want to do it. You want to get these people out to their families. It's all worth it," he said.

"You think about those things today and it still gives you the creeps."

McLean, who represents mine contractors on the TAC, has travelled to various U.S. jurisdictions and witnessed other mine rescue organizations, but he believes Ontario Mine Rescue stands out.

"The way we train in mine rescue, now that's training. Ontario Mine Rescue has to be one of the best in the world. In fact, I think it is the best."



Mine Rescue Link Line newsletter is published by the Mines and Aggregates Safety and Health Association. The association is funded by mining and aggregates workplaces in the province, through the Workplace Safety and Insurance Board.

The information in this publication is accurate to the best of our knowledge. However, the association assumes no responsibility or liability for the accuracy or sufficiency of this information, nor does it endorse any product mentioned herein with the exception of those produced by MASHA. MASHA©2008

Would you like to receive this newsletter directly by email?
Please send your request to isabellacaron@masha.on.ca



Mines and Aggregates
Safety and Health
Association

P.O. Box 2050, Stn. Main
690 McKeown Ave.
North Bay, Ont. P1B 9P1
PH: (705) 474-7233
FAX: (705) 472-5800

www.masha.on.ca/mine_rescue