CO-Gas Safety Unintentional Carbon Monoxide Poisoning Case Study

ANN DANIELS, Survived in 2002

Ann Daniels

Age: 37
Fuel: 'White gas', a type of LPG (Liquefied Petroleum Gas)
Appliance & Location: Portable cooker in a tent on an expedition to the North Pole
Notes by CO-Gas Safety: Ann Daniels is a World Record-breaking polar explorer. She has completed over 14 polar expeditions. In 2002 she put together the first all-woman team to ski continually from land to the North Geographic Pole. Having heard about a near-fatal exposure to carbon monoxide that Ann and her team had on that epic expedition, despite their good knowledge of the dangers of CO, CO-Gas Safety asked her to write this case study and we are immensely grateful to her for doing so.

I first began my Polar adventures when I gained a place on a North Pole relay. I applied for a place on the expedition when my triplets were 3 and after a grueling selection process was delighted when, despite there being over 250 applicants, I secured a place. This expedition consisted of 5 groups of 4 women with 2 guides, each did a leg of the journey and were then replaced by the next 4 to ski Northwards. I was fortunate enough to be in the first team on the ice and it was here I fell in love with the arctic region and expedition life. After 17 days on the frozen arctic ocean we were taken out and the next lot took up the challenge. On the 27th May 1997 the final team made it to the North Pole which was a huge success for a group of inexperienced women.

After that expedition 5 of the women from the relay, including myself got together and planned an expedition to the South Pole. This time there were no guides and we planned, trained and put together the expedition ourselves, learning all the skills we would need to survive crossing Antarctica to the pole. After skiing 1130 km across the highest, coldest and windiest continent on earth we reached the South Pole to become the first British all women's team to make the journey.

Pulling the sledge, which weighed over 250 lbs

Taking a breather

I began guiding expeditions but had a yearning to ski all the way to the North Pole. Besides the relay this hadn't been completed by a team of women and in 2002 I put the team together and myself Caroline Hamilton and Pom Oliver began our journey from Ward Hunt Island, Nunavut. From the outset we were beset by problems I hadn't encountered before. Not even on the original relay. Temperatures for the first 27 days were between -46°C and -58°C. Everything froze. Our clothes, our

kit and even our brains slowed down in the extreme temperatures. Our sledges weighed over 250 lbs and progress was extremely slow.

We used stoves for cooking powered by Coleman fuel is a petroleum naphtha product marketed by The Coleman Company. Historically called 'white gas' (not white spirit), it is a liquid petroleum fuel (100% light hydrotreated distillate) usually sold in one gallon cans. It is used primarily for fuelling lanterns and camp stoves. See ***https://tinyurl.com/y3stlx9r***

Tent in which food is cooked

Dinner is served

Because of the conditions and terrain we always cooked in the tent. Something I have done on every expedition. Our tent was specifically made for the expedition and had vents inserted to eradicate the dangers of carbon monoxide poisoning. Because of the length of the extreme temperatures we were enduring, the vents froze up and weren't doing the job they were supposed to do. We didn't envisage there being a problem so didn't check the vents and on the 5th day paid the price. As I finished cooking and began to turn the cookers off I felt light headed and dizzy, as if I'd drank too much alcohol. I turned to Pom, who was sharing the cooking, to tell her the problem and watched her collapse in front of me.

It was obvious that we both had carbon monoxide poisoning and Pom was in dire straights. I rallied and Caroline and I dragged Pom out of the tent into the cold night air. It took over an hour before she came round enough for us to feel that she was out of danger and we put her in her sleeping bag but kept watch throughout the night in case there were any other problems. We all knew the dangers of cooking in the tent but thought we had enough venting to make sure this didn't happen and were more afraid of a tent fire.

We still needed to cook in the tent for the rest of the expedition as it's impossible to cook outside but we couldn't risk this happening again and so we cut a hole in the top of the tent, cut out the mesh on the tent vents and always cooked with the door open, even though the cold temperatures made this a very painful experience. We figured it was better to be in pain from the extreme cold than dead from Carbon monoxide poisoning. I am now more aware than ever of Carbon monoxide poisoning and make sure the tent is always fully ventilated and take fresh air regularly when the cookers are on.

We didn't have any further carbon monoxide episodes throughout the expedition, although did have many other obstacles, including cracking moving ice, huge ridges and of course extreme cold. After 80 days we successfully reached the North Pole and celebrated at the top of the world.

Since this expedition I've sledge hauled for thousands of miles on ice, mainly with scientific expeditions and take great care to make sure Carbon Monoxide poisoning is something I never have to deal with again.

While working on this case study, Stephanie asked Ann how she knew about CO poisoning and she said, 'I can't tell you exactly how I know but I'm a fairly intelligent person and CO is well documented and a pretty well-known danger. I read many factual books, watch the news etc. and it's something I knew about long before I started on expeditions. And before I took part in any expedition, I learnt about all the dangers and the importance of ventilation. I didn't exactly learn about what to do but it seemed pretty obvious that fresh air was the answer and getting rid of the residual CO in the tent essential. Just common sense I guess.

Whilst I was also affected, the mind is a powerful thing in an emergency and survival situation and getting to Pom was essential, so my instincts just kicked in and the adrenaline beat the confusion in my own brain. As for Pom, once she became lucid and we knew the tent was safe again all we could do was monitor her that evening and keep an eye on her during the days that followed, taking clues from her manor and ability to perform clearly. Obviously, we had no way of knowing when either of us were fully recovered. As we were dealing with mild hyperthermia, frostbite and temperatures of -58C there were a lot of difficulties to encounter and it was impossible to separate one from the other. We both managed to perform and survived to tell the tale.'

Breathing through frozen clothing in extreme temperatures is not an easy task

If you want to contact Ann Daniels for a talk, please visit website *www.anndaniels.com* which has a contact form and full information. Alternatively email her on *ann@anndaniels.com*

Celebrations at the North Pole. 1 June 2002. Feeling elated!

Note: See further confirmation of the dangers of CO at the North Pole by explorer Inge Solheim *www.f3nws.com/news/it-s-the-most-hostile-place-life-at-the-north-pole-with-inge-solheim-6ca3637592f* (article dated 12.12.19)