## Lack of oxygen supplies killed three in Kentucky mine disaster

Samuel Davidson 24 May 2006

Preliminary autopsy results shows that three of the five miners who died in Saturday's mine disaster in eastern Kentucky survived the initial blast, but died of carbon monoxide poisoning as they tried to escape. The findings underscore the likelihood that the three miners in Kentucky, like most of the West Virginia miners killed at the Sago Mine in January, would still be alive today if they had been given adequate oxygen supplies instead of outmoded respirators that provide at best one hour of clean air to trapped miners.

Amon Brock, 51, and Jimmy D. Lee, 33—the two other miners killed in May 20 explosion at the Darby Mine No. 1—died from multiple blunt-force trauma and heat injuries caused by the blast, according to Harlan County Coroner Philip Bianchi. He said further testing would be needed to determine how long the three others—Roy Middleton, 35, Paris Thomas Jr., 53, and George William Petra, 49—survived after the initial blast before succumbing to carbon monoxide poisoning.

Family members were infuriated when they heard that their loved ones suffocated to death. "It makes me upset that he smothered to death," Mary Middleton told the Associated Press about her husband Roy. "They need to have more oxygen for them."

"What they told me was, when they found my husband, he had the rescuer on, and he was trying to get out," said Tilda Thomas, whose husband Paris was killed. "I just think all miners everywhere need bigger oxygen supplies. The rescuers only have an hour supply, even if they work at all."

Paul Ledford, the sole survivor of the explosion at the non-union Darby Mine, told his brother Jeff that his oxygen supply only lasted five minutes. "I just thank God he made it," Jeff Ledford told ABC News. "Them other guys could have made it if you ask me, if they

had the right kind of equipment."

State investigators have interviewed Paul Ledford, but are refusing to release details of what he said.

Randal McCloy, the sole survivor of the January 2 Sago Mine disaster that killed 12 miners, said four of the personal respirators the miners were issued, known as Self-Contained, Self-Rescuers, or SCSRs, did not work and that the miners were forced to share air supplies during the 41-hour rescue attempt. The men who died in Kentucky on Saturday were using the same model of SCSR—SCE SR-100—used by miners in the Sago Mine disaster, according to Holly McCoy, a spokeswoman for the Kentucky Office of Mine Safety and Licensing.

The SCSR technology is more than 20 years old. Companies that manufacture these devices say it is not profitable to develop newer devices because the market for their use is so small. Federal and state authorities have done nothing to force the big coal operators to pay for the technology, although in many cases state-of-theart safety equipment is being employed in Canada, Australia and other countries.

In Canada, for example, mine operators, including those owned by US multinational firms, are mandated by law to provide refuge stations in the mines. These safe rooms—sealed-off areas as large as 50 feet by 148 feet that have an internal supply of oxygen lasting up to 36 hours, along with food, water, chairs and beds—are credited with saving the lives of 70 potash miners in western Canada in January who were trapped underground for nearly 24 hours after a fire at the mine.

Following the Sago disaster and a number of other miners' deaths, the Kentucky legislature passed measures to require that miners be supplied with equipment that would supply two hours of oxygen and that additional devices be stored alone escape routes.

The law does not take effect until July and there is no telling what loopholes the state government has allowed for coal operators to delay its implementation or ignore it altogether.

The federal Mine Safety and Health Administration (MSHA) also issued emergency rules requiring mine operators to provide added breathing devices and store supplies along escape routes. Officials investigating Saturday's explosion have not stated yet if the mine's operators had complied with that order.

Bill Caylor, president of the Kentucky Coal Association, told the Associated Press that it will take manufacturers of the SCSRs two years to fill the demand for additional oxygen supplies that have been placed by coal companies.

The death of the five miners at the Darby Mine brings to 31 the number of US coal miners killed so far this year. Eighteen have been killed in West Virginia and 10 in Kentucky. In all of last year 22 miners were killed throughout the US, including 8 in Kentucky and 3 in West Virginia.

The cause of the Kentucky explosion is still under investigation. Investigation teams expect to enter the mine sometime this week after ventilation is restored and dangerous levels of methane and carbon monoxide gas are reduced. Initial reports, however, indicate that methane gas leaking through a seal from an unused section of the mine may have ignited. Other safety experts believe that an explosion with the force of the blast could only have come from the ignition of coal dust. There have been many cases in which an initial methane explosion caused a secondary coal-dust explosion.

"Anytime you have an explosion that rips through a mine and travels 5,000 feet and is felt on the surface, that is almost assuredly a secondary coal dust explosion if not a primary dust explosion," Tony Oppehard, former general counsel to Kentucky's mine safety agency, told the *Louisville Courier-Journal* Sunday.

This month federal safety inspectors cited the operators of the Darby Mine three times for allowing the accumulation of coal dust and not spreading crushed limestone, a process known as rock dusting that reduces the chances of dust explosions. "These are not nit-picky violations," Oppegard said. "Those are crucial to mine safety and it's unfortunate that a lot of operators consider them to be nit-picky violations and

unimportant."

A review of MSHA records by the *Courier-Journal* found that the Darby Mine has been cited 47 times since April 2001 for not cleaning up coal dust and other combustible materials and not properly rock-dusting the mine. For these violations, the company was fined only once for \$500, with several other violations carrying the minimum penalty of \$55 or \$60.

Like at Sago, the Darby mine also used Omega Blocks to seal off the unused portion of the mine. Omega blocks are made of a composite material and are much lighter than the standard concrete block. Many safety experts have long been critical of the blocks, saying that they cannot withstand the pressure of an explosion. Mine operators prefer the cheaper materials because they can be put up more quickly than standard concrete blocks and require fewer workers to construct a wall with them.

Rescue workers who entered the Darby Mine reported that the explosion had destroyed the Omega Block seals. It is not yet known if the explosion originated in the sealed area, as it did at Sago. On Monday, MSHA halted the use of Omega Blocks as a means of sealing off unused sections of mines and said it would begin a reassessment of their integrity.

In 1992, MSHA approved the use of alternative materials in the building of seals if those seals could withstand a blast force of 20 pounds per square inch. However, many countries, even at that time, required seals that could withstand 50 pounds of blast. Even as far back as 1971, a Bureau of Mines report stated that explosions could be much stronger than that.



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