Integrating Technology to Improve Mine Safety in the Wake of Recent Mine Disasters

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LET'S NOT ABANDON WHAT WORKS

Edward Clair

Editor's Note: The following is a transcript adaptation of Mr. Edward Clair’s remarks on Friday, November 2, 2007 at the West Virginia University College of Law’s Law Review Symposium: Thinking Outside the Box: A Post-Sago Look at Coal Mine Safety.

It is an honor to be here again. Last spring, Davitt McAteer, myself, and others laid out some of the challenges that have proven to be barriers to further improvement in mine safety and health, and then we suggested some ideas for further consideration. And I’m very pleased to be back today to talk about that.

I am a little embarrassed by the title of my presentation. I’m not here to tell you that nothing needs to be changed or that the status quo is the perfect answer.

What I do want to suggest to you, though, is that there is much in the structure of the U.S. approach to protecting miners’ health and safety that should be preserved, and I didn’t want to use the cliché of throwing the baby out with bath water, but there is a lot that has proven to be successful. I don’t want us to lose sight of that.

I put this chart up because I think it speaks volumes about the successes that have been accomplished under the Federal Mine Safety and Health Act of 1977. Today I will talk about that act, the Mine Act of 1977, and then the MINER Act of 2006, which was signed into law on June 15, 2006 by Presi-

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1 See U.S. Mining Fatalities 1978-2006 (“Fatalities”), infra Slide 2.
3 Id.
dent Bush after going through Congress in record time as a direct result of the Sago accident and the Aracoma and Darby accidents later in 2006. Then I’m going to talk about the S-MINER Act,\(^5\) the Supplemental MINER Act, which is a work in progress. It was introduced in both houses of Congress in June 2007. It was voted out of the House Education and Labor Committee just last Wednesday and is likely to be taken up by the House of Representatives before the month is out.

My point in this talk is going to be that we need to stay focused on the bottom line, and the bottom line is at the bottom of this chart.\(^6\) It’s zero, and that’s where we need to be. When the 1977 Mine Act was passed, there were just under 250 deaths of miners that year.\(^7\) That was by no means an historic high. It was, at the time, a rather average year, perhaps even low – compared to the terrible tragedies that marked the early 20\(^{th}\) century.

Remarkable strides have been made in both metal/non-metal mining and in coal mining to bring the number down from 250 to last year’s total of seventy-three. And this plateau in here was really where the debate was before Sago. For mining, it appeared that we had hit a plateau of somewhere in the neighborhood of fifty deaths a year roughly half coal, half metal/non-metal.

In the years immediately before Sago, we were searching to find what could be done to get to the next level and that would bring us down further towards zero. Then, of course, Sago, Aracoma, and Darby happened, and the terrible year of 2006 produced what I profoundly hope is an aberrational up-tick to the number 73 in 2006.

This year, of course, has been marked by the tragedy at Crandall Canyon in Utah. It was a double tragedy in that six miners died in the initial collapse of that mine and then, as we all know, as the nation held its breath during that terrible rescue and recovery operation, three very brave rescuers were also killed, bringing the total to nine.\(^8\)

The national and community tragedy was a personal tragedy for many of us in the Mine Safety and Health Administration because one of those rescuers who died was an MSHA inspector, who was underground assisting in the rescue effort.\(^9\)

I will come back to this graph at my close because I do think it speaks volumes for a nation and a program that has moved in the right direction.\(^10\)


\(^6\) See Fatalities, infra accompanying slide 2.


\(^9\) Id.

\(^10\) Id.
The Federal Mine Safety and Health Act of 1977\textsuperscript{11} was a landmark law that built on the 1969 Coal Mine Health and Safety Act,\textsuperscript{12} and it preserved many of the features of the 1969 Coal Act. These are the fundamental building blocks in the federal law governing mine safety and health.\textsuperscript{13}

The first block is comprehensive health and safety standards. These are standards that have been built up over time. The coal standards were originally written by Congress with a great deal of assistance from the Bureau of Mines in the Interior Department at the time.

These are the federal standards for mine safety and health in Title 30 of the Code of Federal Regulations.\textsuperscript{14} It is a very big book. It covers surface mines, underground mines, coal mines, metal and non-metal mines, equipment approval regulations, civil penalty regulations, and administrative procedures. It is really the core of federal regulation of mining in terms of health and safety. Those comprehensive health and safety standards govern everything, from when you enter the property to when you leave. The statute is a strict liability statute, and that means that the mine operator is responsible for compliance with those standards and employee misconduct is not a defense to a violation. The negligence that's associated with the violation will affect the amount of the penalty, but the operator must comply and he will be penalized if he doesn't.\textsuperscript{15}

The second fundamental building block is the mandatory training requirements. For underground mines, there is a requirement for forty hours of training;\textsuperscript{16} for surface mines, there is a requirement for twenty-four hours of training.\textsuperscript{17}

Annual refresher training and hazard training is required. Training is focused on having the miner know exactly what is required of him or her in terms of safety performance, as well as a mandatory annual instruction in miners' rights.\textsuperscript{18}

The third building block is mandatory inspections. Under the Mine Act, federal inspectors are at underground mines four times a year and at surface mines twice a year to conduct complete inspections.\textsuperscript{19} There's been a lot of press coverage lately about the failure of MSHA to complete mandatory inspections at mines due to staffing shortages. That is an unfortunate fact. The agency

\textsuperscript{11} Pub. L. No. 95-164, 91 Stat. 1290.
\textsuperscript{12} Pub. L. No. 91-173, 83 Stat. 742.
\textsuperscript{13} See generally Mine Act of 1977. See also Mine Act of 1977 Fundamentals, infra slide 3.
\textsuperscript{14} See 30 C.F.R. § 1.1 (2007)
\textsuperscript{16} 30 C.F.R. § 48.5(2) (2002).
\textsuperscript{17} Id. § 48.25.
\textsuperscript{18} See generally id. §§ 48.8, 48.11, 48.28, 48.31.
has since gotten additional funding and has authorized overtime and other movement of resources to complete the mandatory inspections.

While the mandatory inspections were not completed in some cases, there was a considerable federal presence at those mines, where inspectors focused on the high-hazard mining practices at the mine. But their inspection activity did not qualify as a complete inspection of the mine in its entirety.

The mandatory inspections led to mandatory citation of violations. The statute provides that inspectors must issue a citation if they believe that a standard has been violated. Every citation is assessed a civil penalty, the fourth building block. There is also withdrawl order authority in the enforcement scheme.

It is a very rigorous and tough health and safety statute. All cited violations are assessed civil penalties. Unlike OSHA, there are no de minimis violations that get no civil penalty; every violation is penalized.

MSHA had been criticized in the past for low civil penalties that were not an effective deterrent, and steps have been taken – and I’ll talk about those in a bit – to beef up the penalty provisions under the 1977 Act and, now, the MINER Act.

The fifth key building block is whistleblower protections. Under the Mine Act, miners who make safety complaints are protected from retaliation. The Mine Act has one of the toughest, if not the toughest, whistleblower protection provisions in the federal system. Miners who are discharged because they’ve made a safety complaint have a right to temporary reinstatement while their case is being litigated through the administrative/judicial review system. They have a right to temporary reinstatement if their complaint is not frivolous. The “not frivolously brought” standard is about as low as you can get in the federal system. And we, in the Solicitor’s Office and at MSHA, do not shy away from applying that standard as it was intended.

We now turn to the MINER Act of 2006 which made enhancements within the same structure as the Mine Act. The point I want to focus on today, and I think it was the focus of that statute, is post-accident survivability. And that clearly is a response to the Sago, Aracoma, and Darby accidents of 2006.

20 Id. (codified at 30 U.S.C. §§ 813(g)(2), 814(a)).
21 Id. § 820.
22 Id. § 814(b),(d),(e); § 817.
23 See id. § 820(a)(1).
24 Id.
26 Id.
27 Id.
The Mine Act focused on prevention of accidents. If that line of defense fails, and there is an accident where the miners are trapped, what can we do to ensure or improve their chances of post-accident survivability? The MINER Act requires more self-contained self-rescuers ("SCSRs") – breathing devices that last about an hour – lifelines, and training to facilitate escape.  

It is difficult to breathe with an SCSR on. They get hot as they work. They are not comfortable at all. They are not meant to be survival devices that can keep a miner alive for any great length of time. They are meant to help get you out of the mine.

Previously, there was a requirement that each miner have one SCSR. Now, there are requirements that miners have access to far more. There must be two immediately accessible to them where they work at the mine face. In addition, at distances towards the portal, there must be caches of more stored SCSRs.

Lifelines, a simple technology designed to guide miners out of the mine when it becomes too dark to see or when miners’ vision is impaired from the dust and smoke of an explosion, are now required.

Emergency response plans are also now required. This essentially forced mine operators to have plans in place that would assist miners in escape and also address the situation of trapped miners. The critical feature of every plan is the provision for breathable air for trapped miners.

The statute did not specify how much breathable air would be required or how it would be supplied. Congress left that to the agency’s expertise. The agency has put a marker out there that says there are lots of ways to provide breathable air, but we are looking for miners to be maintained alive, with air and the necessary water and food to support them, for ninety-six hours.

The MINER Act also addressed the communications problem that was so apparent at Sago, namely, the inability to know precisely where the miners were and to communicate with them. The tracking requirement is currently done mainly through a dispatcher system, where miners, as they travel about the mine, will check in with the surface control room through the mine telephone system. Thus, their location is known. Another technology exists where miners

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32 Id. § 876(b)(2)(E)(iv).
33 Id. § 876.
34 Id. § 876(b)(2)(E)(iii)(I).
can be tracked with some degree of certainty when a transponder that they are
carrying passes a fixed device on the wall of the mine.

The statutory goal by 2009 is wireless communications. To be able to
communicate from the surface to underground and have it come back up again
without the benefit of wires is really on the forefront of technological ability. We’re not there yet, but there is an enormous amount of work being done now
to develop and perfect a wireless communication system.

In the meantime, the MINER Act required redundant, hard-wired sys-
tems that can survive an explosion or at least increase the likelihood of being
able to communicate with trapped miners. This can currently be accomplished
by installing the redundant communications systems in separate mine tunnels.

Crandall Canyon had a redundant hard-wired communications system. They also had a PED system, which essentially is one-way from surface to un-
derground wireless communication. However, in the terrible pressure burst of
the coal ribs that support the roof, the state-of-the-art communication system
was wiped out. I feel certain that the explosions at Sago and Darby would also
have wiped out a redundant, hard-wired system. The MINER Act of 2006 also
addressed other post-accident survival issues, including rescue teams. Congress specified some of the requirements for rescue teams but left it to the a-
gency to develop rules and requirements for mine rescue teams through rulemaking.

A significant problem at Sago, as you recall, was the miscommunication
with the families. The MINER Act required that MSHA develop a program
where family liaisons are assigned to assist the families during a rescue opera-
tion and for the time period after that. MSHA has trained twenty-two liaisons
to fulfill that responsibility.

At Crandall Canyon, MSHA had three family liaisons assigned to be
with the families around the clock during three eight-hour shifts. The agency
supplied a knowledgeable liaison to assist the families in dealing with the issues
that attend to a protracted rescue operation.

The MINER Act also required that the agency develop procedures to act
as the primary communicator. If you recall, at Crandall Canyon, despite the
agency’s best efforts, the primary communicator appeared to be the mine opera-
tor, Robert Murray. All I can tell you is that the agency held regular news con-
ferences, frequently before Mr. Murray would talk to the press, and the press ran
video footage of Bob Murray. I suppose he was a far more colorful and ent-
tertaining spokesman.

I think the Crandall Canyon experience points up a tension and a chal-
lenge for the agency as it tries to deal with modern communications, technolo-

37 Id.
38 Id.
39 MINER ACT, 120 Stat. 493; see also Miner Act of 2006 Enhancements Cont., infra slide 5.
40 120 Stat. 493, 500.
41 Id.
gies, and expectations that the public has for twenty-four hour, seven days-a-week news coverage and information all the time, immediately. The agency can try to control the flow of information, but the news media prints what it chooses to print and puts on TV what it chooses to put on TV. In any event, the agency has taken steps to fulfill its requirement to be the primary communicator.

The MINER Act mandated higher civil penalties and established minimum penalties for particular violations having to do with unwarrantable failures.42 Those are the violations that are the result of aggravated conduct greater than ordinary negligence. They are high negligence violations that can lead to withdrawal orders.

Congress said the minimum penalty had to be at least $2,000 for unwarrantable failure citations and $4,000 for unwarrantable failure orders.43 There’s a minimum penalty of $5,000 for failure to notify the agency of an accident within 15 minutes.44 This again is an outgrowth of the accidents in 2006 where there was some delay in notifying MSHA.

On its own initiative, MSHA totally revised its existing penalty structure.45 The civil penalty system is based on a point system where the six statutory factors are each assessed a penalty point, which translates into dollars.46 The MSHA penalties previously were notoriously low. Through rulemaking, the agency changed its penalty system, and now the total penalties are somewhere on the order of three times higher than what they had been in the past.

I have a number for you that only tells part of that story. In 2006, the agency assessed $32 million in civil penalties. In Fiscal Year 2007, they upped that to $57 million, and the new civil penalties were only in place for less than four months of that twelve month period.47

So the civil penalties are, indeed, substantially higher. The goal, of course, is that the higher penalties will induce compliance, and there will be fewer violations, fewer citations, fewer penalties, and safer mines.

That’s where we were until June of this year, when Congressman George Miller, Chairman of the House Education and Labor Committee, introduced a bill, and companion bills were introduced in the Senate, that would substantially amend the MINER Act. Congressman Miller, by the way, had voted against the MINER Act because it didn’t do enough in his view. The S-MINER

42 Id.
43 Id.
44 Id. at 498.
46 See 30 C.F.R. § 100.3 (2007).
Act as proposed by Congressman Miller takes up the challenge and in a comprehensive overhaul of the Mine Act and the MINER Act does many, many things.

What I've tried to allude to with this slide “Everything Faster” is shorthand for “Whatever was in the MINER Act, just do more of it and do it quicker.” The bill was introduced in June, on the one-year anniversary of passage of the MINER Act. And on Wednesday, October 31, it was voted out of the House Committee. It is now on its way to the House floor where passage is expected. I recommend it to you. You can find it through the website and any number of reporting services. It is the latest word on mine safety and health improvements by legislation.

Under the “Everything Faster” heading, I will point out just a few things. And as I said, it’s comprehensive; there are many things. It says that 120 days, four months, after enactment, the wireless communications systems must be in place with the existing technology called a “leaky feeder.” There's a “wireless mesh” alternative, but either one of those two alternatives needs to be installed in mines. And then, any future enhancements must build on that system. That has to happen within 120 days.

By June 15, 2008, there must be interim final rules for refuge chambers. These are portable refuge chambers that would provide a safe haven for miners who are trapped underground. The alternative that the statute would provide for is a notch in the coal rib that has bulkhead doors and would also provide a safe haven.

I'm going to ask you to keep in mind the words “interim final rule.” That's a rule that is final when it's published. Then, as comment comes in afterwards, the agency may make adjustments, but the interim final rule becomes the law on publication.

Three months after enactment, there must be new final rules for mine seals. Seals were, of course, a major issue at Sago. The MINER Act had said NIOSH is to make recommendations to MSHA, and MSHA is to engage in rulemaking. MSHA is in that rulemaking now, but S-MINER Act would say that, within three months of enactment, there must be new seals rules. It speci-

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50 Id. § 4(a)(2).
51 Id.
52 Id.
53 Id. § 4(b)(iv).
54 Id. § 4(c)(4).
56 S-MINER Act § 4(c)(4).
ifies what the strength of those seals must be, and it also specifies monitoring and other things.

In the interest of time, I will compress this. There are at least eight, probably more, requirements in the S-MINER Act where Congress writes the standard, putting it into place in a short timeframe, and defers to the agency's expertise a little bit around the edges for fine tuning.

There are other provisions in the S-MINER Act for higher penalties, advisory committees, and an ombudsman. The ombudsman is in the Office of the Inspector General ("OIG"), not MSHA. It's the OIG who will oversee the way MSHA enforces the whistleblower protection provision and handles miner safety complaints.

Under the S-MINER Act several advisory committees are created. There's one that would look at whether mines should have a federal license to even operate. That's a much different approach than exists today. There would also be an advisory committee to see if all of these standards that apply to coal mines should also apply to metal/non-metal mines.

One of the most significant provisions is on health standards. Other speakers will be talking about this as well. Last spring, Davitt McAteer and I both talked about the 1992 court decision that stands for the proposition that, in order for MSHA or OSHA to update a health standard, it must go through a substance-by-substance risk analysis and feasibility analysis to determine what the new standard would be.

There are hundreds of chemical substances that are currently regulated with standards dating back to 1972. They have not been updated because of the rigorous rulemaking requirements. Last spring, at this podium, we said that the process to update these critical health standards didn't work.

Congress will have solved the problem if the S-MINER Act becomes law. Their solution essentially cuts through the notice and comment process, establishes the standard, and then says, "If there's a feasibility concern," meaning people can't comply because it's impossible, "then, the standard can be adjusted to the lowest level that is feasible."

One more closing comment about the S-MINER Act. I think what it stands for is the proposition that MSHA can't be trusted to do the right thing based on its expertise; so, Congress will take care of fulfilling the mandate to improve miner health and safety.

57 Id. §§ 4(j), 516.
58 Id. § 516.
59 Id. §§ 4(j), 516(l).
60 Id. § 4(j).
61 AFL-CIO v. OSHA, 965 F.2d 962, 927-73, 980 (11th Cir. 1992)
63 See generally AFL-CIO v. OSHA, 965 F.2d 962, 973, 980 (11th Cir. 1992).
The failure of trust in the agency, I think, is widespread and seems to be a given regardless of any particular Administration. From my perspective, it’s unfounded. However, we have to recognize that there is a distrust of the bureaucratic process. So, Congress will step in and set the standards.

The S-MINER Act also constitutes a broad recognition that the rule-making process is broken. The very technical decisions that were previously left to agency expertise will now be made by Congress. And the public input is, if not quite an afterthought, at least quite short-changed. The problem is that, based on my experience over more than thirty years with MSHA, in every rule-making, the agency has learned something through the public process, whether it’s from labor or the mine operators.

It is very difficult to get things right the first time. We learn from public input. And a one-size-fits-all approach – which is kind of jargon, but how else to describe it – is probably inappropriate for the complex situations we find in practice in the nation’s mines and in our economy generally. I think we need a flexible system. I think the rulemaking system has big benefits. However, I must admit that when it comes to updating controversial health standards, it clearly is broken.

I want to leave you with a challenge today. Keep this chart in mind, build on what has worked, and figure out how we get to the bottom line. And the bottom line is zero. Everything that is done with respect to mine safety and health ought to be measured against that yardstick. Does it help us get to zero?

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64 U.S. Mining Fatalities 1978-2006 (“Fatalities”), infra slide 2.
Let's Not Abandon What Works

Ed Clair
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U.S. Mining Fatalities 1978 – 2006
Mine Act of 1977 Fundamentals

- Comprehensive Safety and Health Standards
- Mandatory Training
- Mandatory Inspections - All Violations Cited
- Mandatory Penalties
- Whistleblower Protections

MINER Act of 2006 Enhancements

Post-accident Survivability

- More SCSRs and Lifelines
- ERPs including Breathable Air for Trapped Miners
- Tracking
- Redundant and Wireless Communications
Slide 5

**MINER Act of 2006 Enhancements Cont.**

- Rescue Teams
- Family Liaisons and Primary Communicator
- Higher Penalties

Slide 6

**S-MINER Act Proposal**

- Everything Faster
- Higher Penalties, Advisory Committees, Ombudsman
- Health Standards
U.S. Mining Fatalities 1978 – 2006