Case Study
Improving Dragging Productivity through Improving Cast and Increasing Blast Size
Taft Coal, USA

Site Profile
- Taft Coal Sales & Associates is located in the Warrior Coal Basin near Parrish, Alabama.
- Largest surface coal mine in the state.
- Annual production rate of 750,000 tons of Thermal coal.
- Owned and operated by the Taft family.

Blast pattern consists of 7 7/8” diameter holes
Mine operates 45 yard dragline and truck and track hoe fleet.

Jerry Nagel and Alan Self discussing blast plan that started at 4 different points. (see video under Case Studies at www.i-konsystem.com)

Mining Issues
- Overburden surface is very undulating with numerous peaks and hollows.
- Blast size severely restricted with pyrotechnic detonators.
- Blasts had to stop in the middle of hills because of limited delay times.
- Blast breaks on hillsides compromised fragmentation and reduced dragline productivity.
- Vibration and air blast concerns.

Technical Solutions
- Used i-kon™’s accuracy and unlimited delay choices to double size of shots.
- Increased shots from 20-25 holes per row to 40-45 holes.

The Situation
- Coal deposits occur in three distinct seams.
- Overburden varies from 40’ to in excess of 160’ over top (Pratt) coal seam.
- Cast, fragmentation, dragline productivity, key operational issues.
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- Stretched out blast design to go “from hollow to hollow” eliminating hillside stops.
- Started blast from 4 different locations in order to blast up-hill for improved fragmentation.

Demonstrated Benefits
- Doubled the size of the blast while at the same time reduced air blast from 128 db to 121 db.
- Improved cast movement of material.
- Increased cast by 10-15% over pyrotechnic blasts.
- Reduced vibration levels while doubling blast size to 500,000 lbs explosives and producing 500,000 cubic yards of muck.
- Stretched blast design and added multiple start points to eliminate hillside stops.
- Significant increase in dragline productivity.

“Both Donnie and I have worked in coal for at least 25 years and we’ve seen powder salesmen coming by everyday selling you something that’s just going to do world’s better than what you’ve done and you learn to back up, take it a little bit slower because everything isn’t as great and wonderful as presented. But this i-kon™ technology has been as presented and it’s made a big difference in our blasting.”

Donnie Franklin
Mine Manager
Taft Coal Sales & Associates

“I was excited about i-kon™. Anytime a blaster can get a tool like this that he can program and make it do what he wants to do when he wants to do it, and it’s got checks and safety features like i-kon™ does - that’s a tool that a blaster wants to get into his hands!”

Alan Self
Senior Technical Rep
Nelson Brothers
Alabama USA

“You can also go back and change your timing at any point. It’s a really great product. Everything’s hot before anything starts shooting. With i-kon™ we’re able to shoot larger shots with less ground vibration, less air blast, we’re getting more cast and better fragmentation. End of story.”

Jerry Nagel
Blaster
Nelson Brothers
Alabama USA

“By using i-kon™ we lowered our vibration readings. And another big point, we’ve been able to increase the size of the shot and still keep our vibration and noise levels down. I’ve been doing this for 24-25 years and this last blast is the best I’ve ever seen. I’ve never seen a blast do that. It did a tremendous job.”

Glen Wilson
Drill & Blast Supervisor
Taft Coal Sales & Associates

“We have increased our cast by 10-15%. You can easily see it. That’s 10-15% that we don’t have to put iron on. No doubt, fragmentation is better. When you go down digging it, our track hoe usually has to make a couple of passes. The second pass he has to chop. Now he doesn’t have to sit there going chop, chop, chop. Within three lifts he’s down 15’. It’s unreal how i-kon™ breaks it up.”

Donnie Franklin
Mine Manager
Taft Coal Sales & Associates