

## ROADWAY DEVELOPMENT OPERATORS' WORKSHOPS SEPTEMBER 2006

### REPORT TO PARTICIPANTS

Electronic copies of presentations given at the first series of Roadway Development Operators' Workshops have been attached for participants, including:

- Workshop Report September 2006 – Gary Gibson, ACARP
- Process Control and Continuous Improvement – David Gibson and Matt Bonnard, Beltana
- Roof and Rib Support Practices and Equipment – John Vincze, Springvale
- Development and Optimisation of Continuous Miners – Alan Bruce, Crinum
- Panel Advances – Jim Richardson, United

The Workshop Report September 2006 includes a consolidated presentation of the addresses given RDTG members Guy Mitchell (Mackay), Glen Lewis (Pokolbin) and Bob Miller (Penrith), together with a summary of the workshop sessions conducted after each of the presentations. These summaries are compiled after the introductory slide for each session, with separate reports provided for each location.

Summary reports have also been provided detailing feedback received from participants relating to R&D issues and opportunities, and the overall conduct and format of the Workshop. Further observations on the management of roadway development performance have also been included at the conclusion of the Workshop Report, and are also included over for consideration.

Also attached for information of participants are electronic copies of material provided by IHI Australia detailing developments in TBM technology and equipment, and material provided by Eastern Mining outlining application of an auger system for drivage of cut throughs.

A copy of a preliminary report on the Roadway Development Benchmarking Study (July – August 2006) is also attached for reference of participants, and includes details from 15 mines and one mining contractor spanning some 38 development units. Unfortunately, some of the performance data has not been made available at this stage of the project, and it is hoped that we will be able to build the data base to include all mines and all performance data during the second study in January – February 2007. The report can either be viewed electronically, or printed in landscape format on an AO plotter.

The participation of over 170 people in the first series of Roadway Development Operators' Workshops (Mackay – 37, Pokolbin - 78, Penrith – 61) during September 2006 confirms the need for such a forum where roadway development operators can get together, share experiences and learn of emerging best practice in roadway development systems, practices, technology and equipment. The four workshop presenters are to be commended for their presentations, and participants congratulated for the attendance, attention and participation in the workshops.

The Roadway Development Task Group (RDTG) trusts that participants and contributors found the Workshop beneficial and welcomes further feedback from the industry in relation to conduct of the Workshop and the issues raised therein, and opportunities and priorities for future Roadway Development R&D.

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## **ROADWAY DEVELOPMENT OPERATORS' WORKSHOPS SEPTEMBER 2006**

### **OBSERVATIONS ON MANAGEMENT OF ROADWAY DEVELOPMENT**

The first of the presentations at the Operators' Workshop demonstrated the performance capability of a "current technology" roadway development system. Clearly, good ground conditions are experienced at the mine and the mine has minimal outbye infrastructure to constrain performance. In the context of the recent Roadway Development report, and the key factors differentiating best practice operations identified therein, it is evident that leadership and management of the roadway development process is a significant factor underpinning the performance levels achieved.

In reflection, I suspect that because mines haven't achieved the full potential of the continuous mining system as applied to longwall gateroad development, most likely through failures to provide "fit for purpose" equipment and to effectively manage the roadway development process, additional development units are employed to achieve longwall continuity. Management effectiveness is then further eroded as the number of development units increases, and is not matched by a corresponding increase in the level of management resources applied. Is this the law of diminishing returns?

From a financial perspective it is estimated that the mine applies some \$0.5-0.6M per annum in direct management costs to manage and optimize performance from a single development unit which has an annual labour cost of approximately \$7.8M. Compare this with other mines that are potentially applying similar or lower levels of management resources to manage MULTIPLE units, each with an annual labour cost of approximately \$5.0-6.0M. It appears to be good business sense to increase management resources to optimize development performance and reduce the number of units being applied.

Following the presentation on development and optimization of continuous miners a number of people asked what costs had been committed by the mine to make the identified improvements. Clearly, the perception was that they themselves would not be able to commit such costs to improve the performance of their equipment. From a leadership and business management perspective we need to improve the understanding of the economic relationship between people, equipment and processes, and the dynamics of effective utilisation.

Mines typically undertake major overhauls of continuous miners on a four yearly basis consistent with Code D schedules. We therefore commit labour costs of \$20-24M (ie; 4 X \$5-6M pa) over the ensuing four years to operate a continuous miner at potentially sub-optimum rates due to fundamental design, engineering and/or maintenance related issues (a lack of fitness for purpose).

How much should we spend to address these issues in order to make a 10 or 20% improvement in development performance, and when should we expend that money? Should we leave the continuous miner in the mine until it has to come out for a Code D rather than getting it out, rectifying the problems, and removing the performance barriers? Or should we put up with it, man up another unit, and compound the problem even further!

Both the first (process control) and last presentations (panel advances) also gave insights into the application of visioning, strategy development, and execution phases of the management process, with key learnings from the latter, panel advance presentation including:

- the involvement of employees to develop the panel advance process, and to identify and remove barriers to the effective execution of the process;
- the priority given to effectively resource the panel advance process;
- utilizing the same people to do the same task each time to ensure repeatability, together with the clear definition of specific responsibilities and accountabilities;
- supervision and employees taking ownership of and responsibility for the process.

Management resources are leverage by the involvement of employees in the improvement process. This ultimately leads to a freeing up of management resources to develop better operating strategies and to focus on other improvement initiatives, thus developing a self-sustaining continuous improvement culture, rather than being dissipated in ongoing command, control and rectification issues.

With capital cost for a development unit approaching \$8-9M and annualized operating costs almost of a similar level, there appears to be significant upside from improved development performance, either by reducing the level of development assets employed in the event of stable longwall performance, or at least not increasing the level of development assets employed in the event of improved longwall performance. Management's challenge is to visualize what improved development performance could mean in a specific environment, and to develop and execute change strategies that will lead to achievement of the vision.

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