

Improved technology

by P.D.K. Robinson*

In the second of a series of five colloquia with the theme *Rescue 91 : Survival Initiatives for the Mining Industry*, the emphasis was placed on the harnessing of improved technology for the benefit of all the industry.

The Colloquium was held at Mintek, Randburg, and attracted some 150 delegates and speakers from a cross-section of the industry. Eight papers were presented, and panel discussions were held to round off the morning and afternoon sessions.

The purpose of the Colloquium was to allow mines and other groups to put forward innovative schemes in the management of technology that could be shared by everyone in their determination to ensure the survival of the gold-mining industry in the current difficult times.

PAPERS

The papers presented were as follows:

The introduction of detachable bits at Cooke No. 1 Shaft, by C.A.F. Sweet of Randfontein Estates

Survival through cost-saving measures in the engineering field, by E.J. Jurgensen of Freddie's

Survival through innovation, action, and a positive vision for the future, by G.C.V. Wade of Vaal Reefs

Measuring misaligned guides, by H. Sperlberg of CSIR

Rock-crushing innovations, by E. Trueman of Nordberg

Improved explosives technology—has it been worth the effort? by R.A. Lindsay of Sasol

Cost savings through corrosion monitoring, by M. Tullmin of CSIR

Enhanced efficiencies through technical developments in the survey departments, by D. Maree of Beatrix.

OPENING

In his welcoming address, Richard Beck, President of The South African Institute of Mining and Metallurgy, emphasized the need for greater effort to be placed on technology 'if our industry is to withstand the present and future pressures'. These pressures, he said, were the result of ever-increasing costs, poor metal prices, and technical challenges for the mining and metallurgical engineer alike.

Controversial subjects, he explained, had purposely been chosen for the panel sessions since 'it is from such discussion that new ideas and enthusiasm to do better are generated'.

KEYNOTE ADDRESS

Had determined action not been taken to arrest spiralling production costs, many mines—including major producers—would have been in serious trouble, reaching breakeven point within a few years. This was said by Lionel Hewitt, Managing Director of the Gold and Uranium Division of

Anglo American in his keynote address.

He explained that, while there had been only a marginal decrease in the number of kilograms of gold being produced, mines had been forced to substantially reduce their mining of lower-grade panels. 'Necessity', he said, 'is not only the mother of invention; it formulates our behaviour and attitudes'.

Among his suggestions, he proposed that, as far as possible, employees should be made responsible for bottom-line financial results, and that responsibility and authority should be devolved to the lowest applicable level.

PANEL DISCUSSIONS

The first panel discussion—*For improved productivity, should vertical and horizontal transport of men, materials, and ore be considered an engineering responsibility?*—evoked considerable participation from delegates, the consensus being that what is mainly required is team effort.

While there was little quarrel with the vertical aspects of the operation, the standards and the co-ordination of lateral transport came in for much criticism. A major complaint was that the amount of equipment does not correlate with the amount of ore moved. Another concerned the 'We and They' culture in regard to the division between mining and engineering sectors.

It was suggested by a number of delegates that the person responsible for the tramming should be the most-qualified one in the team, immaterial of whether he is a mining man or an engineer. The main concern was that lateral transport, including equipment, was not being managed at a satisfactory level and with a common purpose.

In his summing up, the Chairman, Peter Robinson, concluded that the team concept was the strongest point to emerge. He said that, to achieve this team effort, it was vital to look at the attitudes of people. He added that more attention would obviously have to be spent on training to overcome serious problems of lateral tramming.

Following a brief presentation by Sam Spearing of Anglo American, the afternoon panel discussion concerned *Backfill : is it worth the expenditure and effort in this time of survival?*

Mr Spearing said that, while the industry had seen no reduction in the overall seismic energy released from backfilling operations, what had been achieved was a very significant reduction in the damage associated with rockbursts.

There was general agreement on the merits of backfill, not only as a cost-effective support system, but also for environmental reasons such as the reduction of stope heat loads.

FUTURE

Three more one-day colloquia in the series are planned for 1992. The next one, 'Improved Organization', will be held in February.

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Mineral processing

The XVIII International Mineral Processing Congress will be held at the Darling Harbour Convention and Exhibition Centre in Sydney, Australia, from 23rd to 28th May, 1993. The Congress will be organized and hosted by The Australasian Institute of Mining and Metallurgy in its Centenary Year.

The magnificent Darling Harbour venue will provide modern facilities for plenary and parallel Congress sessions, simultaneous translation, and a comprehensive equipment exhibition, in the heart of Australia's largest city. Pre- and post-Congress tours throughout Australia will also be available.

The Congress will provide a forum for reviewing the technical, economic, and social challenges facing mineral processing in the 1990's and beyond. It will consider the world mineral-processing scene against a backdrop of Australia's diverse and thriving mine and mineral-processing industry.

Plenary sessions will permit the major issues facing today's professionals to be addressed by international authorities in the field. Parallel technical sessions will allow individual topics to be dealt with in more detail.

The Congress will continue the IMPC tradition of providing a forum for the presentation of new knowledge in the science and technology of mineral processing. It will also provide an opportunity to evaluate achievements in the application of research results to industry. The scientific programme will therefore integrate reports on recent advances in research and development with case studies from the practice of mineral processing.

PLENARY SESSIONS

Plenary sessions will precede the parallel technical sessions on each day of the Congress, and will explore issues that have a major international impact on the industry. The topics may include

- Mineral processing and the environment
- Value-added processing
- The mining industry's link with government
- Occupational health and safety
- The public image of the mining industry
- Sustainable development
- Technology transfer and the role of R & D
- Third-world mining and first-world consumption
- Training professionals for the industry.

Papers are invited on the plenary topics, and separate technical sessions may be held on these topics if warranted.

PARALLEL TECHNICAL SESSIONS

The Congress venue provides for up to four parallel technical sessions. Papers are invited for the following topics:

- Comminution and classification
- Dense-medium separation
- Hydrometallurgy
- Solid-liquid separation
- Novel separation techniques
- Modelling, simulation, optimization
- Downstream processing and scrap recycling

- Gravity concentration
- Flotation
- Physical separation and ore sorting
- Fine-particle processing
- Process control
- Plant and process design
- Environmental applications.

It is hoped to allow 30 minutes for each paper (20 minutes per presentation, 10 minutes discussion) in order to provide a stimulating forum for each debate.

SUBMISSION OF PAPERS

Authors are encouraged to submit papers on both new research results and on operating practices in industry. The Organizing Committee particularly invites papers describing the application of research results to industry and papers addressing the mineral-processing challenges of the future, such as the constraints imposed by environmental considerations.

Authors wishing to present papers are required to submit an extended abstract in English, not exceeding 500 words. Abstracts are to be submitted by 31st December, 1991. Authors will be advised of acceptance or otherwise by 31st March, 1992. Finished papers are to be submitted for refereeing by 31st August, 1992. Authors will then be advised of the Editorial Committee's requirements, and be requested to incorporate all necessary changes and return the paper by 30th November, 1992. They will then be asked to proof-read the camera-ready copy, which must be returned by 31st January, 1993.

The Congress Volume will be produced on a desk-top publishing system to a tight schedule, to ensure that the papers presented are as up-to-date as possible. Authors are therefore requested to compile their revised paper on an IBM PC compatible word processing program and to submit it in both hard copy and on disk. Microsoft Word is preferred, but Wordstar, Multimate, and Wordperfect are acceptable. If none of these options is available, an alternative is an ASCII text file. In all cases, the disk should be accompanied by a description of the word-processing package and the version number. Further details will be supplied to authors on acceptance of their abstract.

OFFICIAL LANGUAGE

The official language of the Congress will be English, and papers should be submitted in English. Simultaneous translation may be provided for plenary sessions subject to demand, and those expecting to attend are asked to indicate their preferred language for translation.

FURTHER INFORMATION

For further information contact

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