

# SPOTLIGHT

## on rock mechanics

by O. STEFFEN\*

Two Schools on 'Rock Mechanics in Mine Management' were held at the University of the Witwatersrand from 23rd January to 3rd February, 1984. The School was originally perceived as a repetition of the Rock Mechanics School held in 1978. On careful consideration, it was decided to change the emphasis from that of the purely technical application of rock mechanics principles to that of management concern with rock mechanics. The School programme reviewed basic principles, and stressed recent experiences and advances in the application of the basic theory. Emphasis was placed on risk evaluation and on the quality and quantity of data necessary to influence risk levels.

Each School lasted 4½ days, of which 3 days were devoted to lectures and 1½ days to case studies. The participants were divided into 4 case-study groups of their choice dealing with gold, coal, base metals, and shallow underground mines. A high degree of audience participation was achieved during the case studies and proved most successful.

### First Three Days

The Schools were opened by the President of the Institute, Professor King. Professor Salamon introduced the subject to delegates by addressing the role of rock mechanics in mine design and operations. Professor Budavari lectured the delegates for the rest of the first day, covering all the fundamental aspects of rock mechanics theories. Mr Peter Vos, General Manager at ERPM, was a guest lecturer on the second day and presented a most interesting talk on 'Rock Mechanics and Mining'. The rest of the day belonged to Professor Salamon and Dr Wagner, who covered the design requirements of underground excavations and pillar systems. The Wednesday was the last full day of lectures and was devoted to design of support. The lecturing load was distributed between Professor Budavari, Dr Wagner, Mr Ortlepp, and Dr Stacey. The last two lectures of the day were of a more general nature: Dr Patchet expounded on the practical limitations to the application of design principles, while Dr Steffen quantified the uncertainties of design into a risk analysis.

### Fourth and Fifth Days

After the formalities of the lecturing process, the fourth day and early part of the fifth day were devoted

to case studies. The case studies on gold mines were led by Dr Patchet and Mr R. More O'Farral, on coal by Dr H. Wagner and Mr C. Wiggett, on shallow mines by Messrs D. Ortlepp and B. Kotze, and on base metals by Messrs C. de Jongh and R. Kersten. These sessions gave the delegates the opportunity of questioning the application of theories covered during the lectures and of informal discussion.

A discussion on the organization and role of Rock Mechanics Departments concluded the proceedings at midday on Friday. Mr Jack Garbutt from Anglovaal and Dr Patchet provided a most stimulating discourse from which lively discussions followed. Dr Wagner formally closed the proceedings before lunch.

### Social Activity

A Cocktail Party was arranged for the Monday evening and a dinner for the Thursday evening so that delegates could meet members of the SAIMM School Committee and other senior members of the mining industry. The attendance by delegates at these two functions was disappointing, but vociferous singing and a wide variety of stories made up for the shortage of members. As a result of this poor attendance, the organization of such functions for future Schools will have to be reconsidered.

### General

It has become traditional for the organizers to receive comments from delegates, and this year, again, very valuable feedback was obtained. Generally, most delegates had very favourable comments and acknowledged benefit from their attendance. However, there were some who felt the course was too advanced, while others considered the School not sufficiently demanding. The majority agreed that the case studies were the most useful, and that they should be interspersed with lectures, any one lecturing period not exceeding one hour.

A total of 87 delegates attended the first School, and 90 delegates the second School. Responses like these from industry greatly encourage the SAIMM School Committee, which will be motivated to continue the Schools Programmes with renewed vigour and interest.

The year 1984 marks fifty years of growth for the South African Council for Mineral Technology (Mintek), since the founding of the Minerals Research Laboratory in 1934. To mark the occasion, Mintek organized the International Conference on Recent Advances in Mineral Science and Technology (MINTEK 50), which was held from the 26th to the 30th of March, 1984, at the Sandton Sun Convention Centre. Some 520 delegates attended, 150 from beyond South Africa's borders.

\* Steffen, Robertson and Kirsten Inc., 20 Anderson Street, Marshalltown, 2001 Transvaal.

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