

CONFERENCE INFORMATION

The 1 st International Conference on the "Reliability and Durability of Machines and Machinery Systems in Mining" was held in Szczyrk (POLAND) from the 16-18 June 1986. The conference attracted well over 100 delegates from seven countries. The conference reviewed current reliability and durability problems of machines and machinery systems in both surface and deep mine situations. The wide variety of research and technical papers reflected the many developments in recent years and the authority of the authors ensured the conference was a valuable forum for the discussion and exchange of information on improving reliability and durability. The program allowed for a full discussion of the papers presented and was divided into the following sessions:

Plenary Session.

Opening Address (J. Antoniuk, POLAND).

Charakteristics and Ways of Improving Machinery Systems Used in Coal Mining (M. Łakomy, POLAND).

A Method of Forecasting the Failure-Free Operation of Mining Shearers (M. Kołomyjcow, USSR).

The Influence of the Original Technical Concept and the Constant Changes in Perceptible Needs on the Reliability and Durability of Machines, Instruments and Systems in Underground Coal Mining (K. Spies, FRG).

Session I: Reliability, Diagnostics and Safety.

On the Reliability of Safety in Mining Problems (J. Antoniuk, J. Czaplicki, POLAND).

Reliability and Diagnostics of Toothed Gears for a Conveyor Belt Driver (W. Bartelmus, POLAND).

Safety of Winder Disc Brakes a Structural Approach (S. Brodziński, POLAND).

Reliability Control of the Winding Machines by the Computer (G. Eckardt, H. Grolik, GDR).

Problems of Reliability and Safety in Technical Systems (J. Jaźwiński, K. Ważyńska-Fiók, POLAND).

Application of Vibro-acoustic Studies in the Process of Improving the Dependability of the Arm - Mounted Cutter - heads of KGS-320 Shearers (T. Zakrzewski, W. Sikora, POLAND).

Session II: Technical Methods of Improving Durability

A System Approach to the Reliability and Durability of Mining Transport Machinery (J.I. Bogdanow, USSR).

Improving the Life Span of Mining Machine Elements as a Result of Treatment by Surface Work - hardening (S. Mikuła, POLAND).

Fatigue Strength of $6\frac{1}{2}$ mm Steel Designed for the Production of Gear Wheels (M. Ploch, POLAND).

The General Criteria for Lubricant Selection for Friction Points in Mining Machines (J. Spałek, POLAND).

An Elaboration of the Theoretical Method for the Reliable Determination of the Repeated Application of a Light Metal Roof Bar in Bauxite Mining (M. Tisza, HUNGARY).

Session III: Methods of Improving Reliability

An Examination of the Reliability and Efficiency of Mining Machines (J. Bocanzi, J. Siamegi, L. Lois, HUNGARY).

Increasing the Operational Reliability of Hoisting Machines in Vertical Shafts (B. Biriukov, W. Dwornikow, W. Fristrom, USSR).

Some Observation on the Operation of Winders Produced in the USSR and Used in Poland (S. Brodziński, T. Zmysłowski, POLAND).

A Comparative Analysis of Two Winder Hydraulic Disc Brake - Systems with Reserve (J. Czaplicki, S. Brodziński, POLAND).

An Estimation and Control of the Efficiency of the Underground Coal Mining System (W. Morozov, W. Reznikow, J. Owsjannikow, J. Zeleznyj, USSR).

Methods for Increasing the Life and Reliability of Impulse Machines (A. Kostyliov, E. Rusin, USSR).

Session IV: Tribological Conditions and Durability

Fundamentals of Gear Computations for Toothed Gear Life (W. Bartelmus, POLAND).

Methods of forecasting Wear in Complex Machine Systems (W. Grib, USSR).

An Assessment of the Load Distribution of the Individual Circulation Wheels in the Planetary Gear which are Working in the Drive Systems of Mining Machines (A. Skoć, J. Szopa, POLAND).

An Evaluation of the Grinding Elements Service Life (S.F. Ścieszka, POLAND).

Abrasive Wear in Contact with Particular Materials (S.F. Ścieszka, POLAND).

Session V.: The Reliability of some Technical Systems.

A Systematic Control of Mine Transport Equipment Reliability in the Creation and Operational Stages (E. Bogdanov, A. Wierchotuwrow, A. Zukow, I. Podczerniajeva, USSR).

Some Problems in Estimating the Reliability of Safety in Man - Machine Environment Systems (J. Chmiel, POLAND).

An Upper Estimation of the Survival Function for Hoisting Ropes (J. Czaplinski, S. Brodziński, POLAND).

Simulation Tests of Mine Transport Systems (J. Kuleczka, POLAND).

The Influence of the operational Reliability of Mine Winding Gears (J. Hansel, J. Kuleczka, POLAND).

Session VI: Some Durability Problems

Some Problems Connected with the Life of Mining Conductors (W. Boron, P. Krasucki, POLAND).

The Contribution to Dimensioning the Ribs in the Jacket of the Multirope Koepe Pulley of the Hoisting Machine (J. Koszelski, POLAND).

Test - Stands and Methods of Estimating the Quality of Combine Drive (Z. Michalak, USSR).

Machines Operating Under Extreme Conditions in Mining (V. Poturaev, V. Dyrda, USSR).

A Dynamic Model of a Coal Combine (E. Świtoński, T. Banasz, POLAND).

Some Problems of the Aerostatic Ways Employment in the Mining Industry (W. Wiercioch, POLAND).

The aim of the conference was reached as a wide review of the papers dealing with reliability and durability problems of mining machinery systems was presented.

The conference provided opportunities for many discussions and personal meetings which are already giving a base for farther cooperation between various research centres and which should stimulate the development of practical and theoretical knowledge on reliability and durability.

Mining technology in all participating production centres should benefit as many engineers from mines took an active part in the conference.

"Round Table" discussion indicated that there is a demand for this kind of meeting and a three year period between the conferences was recommended most frequently. Future conferences should be specialized and the most interesting current problem should be used as the conference theme e.g.

- application of computer science in reliability and durability problems,
- technological methods of improving reliability and durability.

It was also recommended that future conferences should be combined with an exhibition. In the exhibition the latest achievements and machines ought to be presented by means of technical lectures and exhibits. This is said to be the right platform for discussion between manufacturers and users of mining machines and machinery systems.

The conference was held in a mountain holiday resort and there was a little time for hiking and taking benefit from the sunny weather. On Tuesday evening a folk group of highlanders presented local folk dances and songs. The show was combined with a barbeque which all the participants enjoyed very much.

Conference Secretary

S.F. SCIESZKA