International Conference

Safety, Risk and Reliability – Trends in Engineering

St. Juliens, Malta

21 – 23 March 2001

Organised by IABSE on behalf of CIB, ECCS, fib, RILEM and IABSE

More than two years ago the Liaison Committee (LC), the body consisting of the Presidents and General Secretaries of CIB, ECCS, fib, IABSE and RILEM, proposed, after the memorable Innsbruck event in 1997, another conference in 2001. IABSE volunteered to and was entrusted to organise the event on behalf of the LC member associations.

On March 22 and 23, 2001, the international conference was held on the beautiful island of Malta on “Safety, Risk and Reliability - Trends in Engineering” and was as mentioned, organised by IABSE on behalf of CIB, ECCS, fib, RILEM and of course IABSE itself. The main statistics were 442 participants from 49 countries and 171 papers resulting in a programme of 91 oral presentations, 32 poster presentations, and 48 written contributions.

An information area allowed the Conference participants to learn more about the Liaison Committee and its Member Associations.
The papers covered a wide range of topics in the field and were authored or co-authored by people from consulting offices or contractors, and dealt with applications in practice. It goes too far to claim that risk analysis is already a standard piece of equipment in the tool box of the average designer, but increased use and interest could certainly be observed as a trend in present day engineering. Risk and reliability analysis in practice raises quite a number of expected and unexpected problems. Three typical gaps between theory and practice might be identified:

- theory is too complex
- practice is too complex
- lack of or imprecise data.

First, there is a need for researchers to seek simpler theories, better software, easy to understand presentations, better education, and so on. The day before the conference, 50 attended a short course on Risk Analysis. Second, practice is often too complicated. If a researcher finds a problem too complicated, he simply modifies the problem in such a way that it suites the available capabilities. In practice, on the other hand, one has to find the theory that matches the problem. This may lead to unacceptable improvisations or unsatisfactory solutions. Third, lacking or imprecise data is an issue, especially in the field of low probability events.

The question is how serious these gaps are. These shortcomings and problems are not unique properties of the risk analysis field. In most engineering applications similar difficulties are present. However, most of the time they are hidden behind a screen of familiarity and standardisation, which took years to build. Many engineers use methods and numbers in their structural analysis, not realising that these have been the subjects of debates between experts for a long time and one alternative was chosen for no obvious reason. One should not be too scared of differences of opinion and estimates. It is not the risk and reliability analysis, which causes these gaps and lack of knowledge. They are there anyway. On the contrary, it is a welcome opportunity to have a basically sound theoretical tool to discuss the gaps and bridge them. In the future, also in this field, a convergence of methods and opinions will occur.

Continuous co-operation between researchers and practitioners could stimulate this process.

It is always difficult to indicate the technical or scientific highlight of a conference, but in Malta certainly many discussions resulted from Benchmark studies, as reported by Messrs Bradbury, Holicky and Schneider. Quite a number of well skilled and knowledgeable persons from different countries endeavoured to solve a risk assessment and a structural reliability problem given by the Programme Committee. The wide spread of the observed results underlines the recognised need for standardised guidance also in these fields.

The Safety and Risk in Engineering, Malta 2001 Conference Report and CD - price for IABSE Members CHF 90.- and CHF 180.- for Non-Members - can be obtained from the IABSE Secretariat at:
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