

British Tunnelling Society

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NEWSLETTER APRIL 2002

INTRODUCTION

We regret that due to administration problems the January Newsletter arrived a month late. The April Newsletter should arrive on time, but with the Notice for the AGM, and not with your T&TI.

The AGM this year, for the first time, will be at the beginning of the May meeting. The explanation for this change was given in the last Newsletter.

We look forward to the last three meetings of the present session. Colin MacKenzie will give the Harding Lecture in June on his experience in tunnelling. As those who have worked with Colin will know this will be the highlight of the session.

There is also the half-day meeting on 9th April on a review of settlement on the Jubilee Line Extension. There are a large number of speakers at this meeting including John Burland and Robert Mair.

FUTURE MEETINGS

All meetings at the ICE at 17.30 unless stated. Flysheet on the meetings are circulated with T&TI and may be seen on the website.

9th April 2002 **Half day meeting on settlement, face loss and building damage - a review of the London Jubilee Line Extension experience**

18th April 2002 **Box Jacking at Haifa in Israel**

16th May 2002

AGM and Copenhagen Metro

20th June 2002

Harding Lecture

Colin MacKenzie on his experience in tunnelling

GOSSIP

In the January Newsletter we mentioned that Gareth Mainwaring and Colin Weeks received the tiennial Baker Medal at the ICE Annual Awards Ceremony in November 2001 for their paper on 'the Detailed Design of the Medway Tunnel Project'. However, we did not have a photo at that time.



Colin and Gareth receiving their award from the President Sir Joseph Dwyer

ANNUAL DINNER

The Annual Dinner will again be held at the Brewery, Chiswell Street on Friday 10th May 2002. For the first time ever the dinner will be followed by the presentation of the Tunnelling Industry Awards. The Awards will be presented by a well known personality, who cannot be named at this stage.

There will be no speaker this year (sounds of cheering from a certain quarter) and to complete the evening, there will be some danceable music, played again by 'Rhythm Cannon'

Application forms for places at the dinner have already been distributed to members. If you have not received one or wish additional copies, please contact Helen Natrass. Tel 0207 7260106, fax 0207 7260263, e-mail h.natrass@sir-robert-mcalpine.com

TUNNELLING INDUSTRY AWARDS

The first Tunnelling Industry Awards Ceremony has been arranged jointly between the BTS and Tunnels & Tunnelling International and will be sponsored by MBT Ltd. The Ceremony will identify and reward the best in British Tunnelling over the past year.

This years projects have, initially, been identified by the BTS Chairman and the Committee. From this list the Chairman, Peter South, Vice Chairman, Anthony Umney, and the Publisher of T&TI, David Wildman, will select a shortlist of three from each category and from the shortlist they will choose the winner. The winners of each category will be presented with a framed certificate at the Ceremony.

All selected projects will be named on the evening, with the shortlisted three given a Power Point Presentation before the winner is announced.

The Categories of Award are:

- Machinery/Materials Development Award
- Safety Award
- Excellence in Tunnel Design Award
- Achievement through Innovation Award
- Small Project Award (< £5m)
- Large Project Award (> £5m)

Some of the companies included in the initial nominations are:

AMCO, AMEC, Barhale, Morgan Est, Murphy, Nuttall, Skanska and Yates: MBT and Tunnelling Accessories: with designers, Brown & Root, Haswell, Maunsell and RLE.

The Safety Award includes nominations for tunnel fire protection measures and HAVS.

The BTS Committee would like to thank MBT Ltd for their Sponsorship of this event and for their contribution to the Tunnelling Industry over the past ten years.

TRAINING AND EDUCATION

The BTS role in advancing the state of its members' and the tunnelling industry's underground construction knowledge base is undertaken by the Training & Education Sub-Committee. This Sub-Committee is primarily involved in arranging educational opportunities and obtaining a general picture of training for all involved in the UK tunnelling industry.

The Sub-Committee's principal activity is the promotion of training courses. Following the success and profitability of the five-day, two module, Tunnel Design and Construction course held at the Holloway College, Egham, in June 2001, we are arranging for this course to be repeated with a few improvements in June 2002. Thanks are due to the ICE Conference Office and for the time and efforts of the course speakers, who come almost entirely from the rank and file of the BTS membership.

Details of the June 2002 course are given below.

The BTS has agreed to establish a bursary for MSc and or PhD students to facilitate tunnelling related research. The Society can make available up to £3,000 in any year. The bursary is available to student members and members of the BTS registered with a recognized academic institution and with sponsorship in place. Fifteen academic institutions have been approached, and the first application is currently under consideration.

The Sub-Committee has moved a little further forward in trying to establish a comprehensive picture of the current pattern of training for tunnelling personnel, site based as well as engineers, supervisors and managers. Best site practice in the industry appears to be the CTRL's Safety Passport scheme, but work is needed to establish whether and/or how this initiative could be brought into the industry on a more widespread basis.

BTS Training Course

The BTS is holding a course of five days total duration, entitled 'Tunnel Design and Construction' at the Royal Holloway College, Egham from 24th to 28th June 2002.

The course will provide a foundation in the many aspects of tunnelling from client requirements, through planning and ground investigations, design, the letting of contracts and practical aspects of the construction process. Experienced engineers from the industry will give the benefit of their experience to delegates through lectures and course study material.

The course will also incorporate a number of Health & Safety presentations based on the Society's Health & Safety course, which will not be run as a separate course this year.

Delegates will be offered the opportunity to attend for the whole five days, or alternatively to attend Module 1 - Design, from Monday 24th June to Wednesday 26th June, or Module 2 - Construction, from Wednesday 26th June to Friday 28th June. All delegates will be present for the core Health & Safety topics on the Wednesday.

There will be ample opportunity to question lecturers on their subjects, which include:

- Survey, site investigation and geotechnical aspects of tunnel design
- Temporary works design and construction
- Linings and ground support including NATM
- Mechanised tunnelling, tunnel plant and equipment
- Settlement associated with tunnelling, and the effect of compensation grouting
- The use of compressed air, ground treatment and grouting
- Contractual and commercial matters including risk
- Safety relating to design and construction
- Legislation

The course brochures will be issued shortly. Senior tunnellers, please encourage your junior staff to attend.

INTERNATIONAL TUNNELLING ASSOCIATION

The 28th Annual meeting of the International Tunnelling Association was held in Sydney, Australia, from 2nd to 7th March 2002 in conjunction with the Australian Underground Construction and Tunnelling Association (AUCTA) 11th Tunnelling Conference on Modern

Tunnels - Challenges and Solutions. Martin Knights and Anthony Umney represented the BTS at the two sessions of the General Assembly. Sir Alan Muir Wood, Honorary President, and Colin Kirkland, ITA Technical Auditor was also present.

Two new Member Nations joined the ITA - Chile and Croatia - giving a total membership of 52 Member Nations. Thirty-four Member Nations were represented at the meetings

The next meetings of the ITA will be in Amsterdam, on 14th to 17th April 2003, in Singapore, on 22nd to 27th May 2004, and in Turkey in 2005.

The BTS was represented in Sydney on eight, of the fifteen working groups, including two of the Animateurs, Donald Lamont - Health & Safety in Works - and Rodney Craig - Underground Works and the Environment. The various Working Groups are currently studying the following topics:

Working Group 2 - Research

The 'State of the Art Report' on seismic design of tunnel is completed. The report on 'Settlement induced by Tunnelling' will be completed in 2003 and the report on 'Risk analysis' in 2002. The Working Group is starting a new topic on site investigation for tunnelling.

Working Group 2 - Contractual Practices in Underground Construction

The Working Group approved a Document on 'Evaluation of Tenders for Consulting Engineers and Contractors'. Two draft Documents were discussed at the meetings and will be further developed - 'The need for better management of underground projects', and 'The use of a Disputes Review Board as an alternative dispute resolution mechanism'.

Working Group 4 - Subsurface Planning

This Working Group has been in existence for 27 years and has completed the draft of its final work. - 'Access Ways to Underground Facilities'. The Working Group is merging with Working Group 13 - Direct and Indirect Advantages of Underground Structures to form a new Working Group - Urban Problems, Underground Solutions.

Working Group 5 - Health & Safety in Works

The Working Group is finalising the redraft of the 'Safety in Tunnelling' booklet, which will be completed

during the year. The Group is working on a revision of the 'Tunnelling Safety Guidelines' and continues to work on the database of basic information on health & safety legislation.

Working Group 6 - Maintenance and Repair of Tunnels

The Working Group met with delegates from the PIARC Working Group on Fire, Life and Safety, to discuss the ITA Working Group's current work on 'Resistance of Tunnel Structures to Fire'. The PIARC Working Group is studying 'Fire and Smoke Control in Road Tunnels'. The two Working Groups are working together on fires in tunnels

Working Group 11 - Immersed and Floating Tunnels

The Working Group is planning to publish a new and extended 'State of the Art Report'. The first such report was published in 1993 and updated in 1997. It is hoped that the new report will be on the ITA Website and that a substantial part will be operational by the time of the next meeting in Amsterdam.

Working Group 12 - Shotcrete Use

This Working Group had the highest attendance in Sydney with 23 participants from fifteen different countries. The Working Group will complete its 'State of the Art Report' and 'Overview of Fire Protection Mortars' during the next year. The Working Group has also been working on 'Shotcrete Support Mechanisms' and 'Watertight Linings'.

Working Group 13 - Direct and Indirect Advantages of Underground Structures

The Working Group has finalised its report on 'Underground or Above - Ground - Making the Choice for Urban Mass Transit Systems'. The Working Group is now merging with Working Group 4 to form Working Group 20.

Working Group 14 - Mechanised Tunnelling

The Working Group has completed its work on 'Classification and Definition of TBMs'. The main work is now concentrating on a database of mechanised tunnelling information for prospective users in tunnel and tunnelling.

Working Group 15 - Underground Works and the Environment

The Working Group has been collecting data on projects, which have been placed underground for environmental and sustainable development reasons. 80 projects have been identified and more data will be collected during the next few months. The Working Group is also collecting data on how tunnelling affects the environment and environmental constraints on tunnelling.

Working Group 17 - Long Tunnels at Great Depth

The Working Group is concentrating on long traffic tunnels - railways and roads - with particular attention to the extreme conditions for risk assessment and risk management over the whole life of the project.

Working Group 18 - Training

The Working Group is concentrating on the collection of tunnel data, in electronic format, from across the world for teaching purposes, and the collection of teaching material from the other working groups.

Working Group 19 - Conventional Tunnelling

The new Working Group had its first meeting in Sydney with presentations from a number of Member Nations on the State of Art in their countries. The purpose and scope of the work of the Working Group was agreed.

Working Group 20 - Urban Problems, Underground Solutions

This new Working Group will be working closely with representatives of the Associated Research Centers for Urban Underground Space (ACUUS). With the progressive increase in urban populations around the world underground space will play an increasingly important role in solving serious problems in these cities. The Working Group will identify and classify these urban problems and will explore underground solutions.

CONFERENCES

Don't forget to look at the back pages of Tunnels & Tunnelling International and World Tunnelling for the forthcoming conferences. You can also look at the ITA website where most of the International conferences are given www.ita-aites.org

The next BTS Conference is on **Compressed Air Work** and will be held at St Catherine's College in Oxford from 25th to 27th September 2002. This international conference on engineering and health in compressed air work is being organized by the BTS Compressed Air Working Group.

Details of the conference will be circulated. Contact details – Barbara O'Donoghue, at the Institution of Civil Engineers, tel (44) 0207 6652311, fax (44) 0207 2331743, e-mail Barbara.odonoghue@ice.org.uk