

British Tunnelling Society

at The Institution of Civil Engineers

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NEWSLETTER August 2005

INTRODUCTION

This August Newsletter is short as it is the holiday season, but it brings you up to date with the Society's activities. We look forward to the beginning of the next session on September 22nd with a talk on the Egnatia Project in Greece and to Underground Construction 2005 at Olympia in late October.

GOSSIP



A young John Scholey nearly 30 years ago taking a photo of himself in a culvert under the Prince of Wales Colliery at Pontefract.

Do you have any photos of members in their past which would be interesting to include in the Newsletter? None of the editor will be included!

Any interesting news about members to rodneycraig@compuserve.com

FUTURE MEETINGS and EVENTS

All meetings now start at the Institution at 18.00 unless stated, with tea and coffee on the lower ground floor from 17.30. The bar opens at 17.30 and is open until late. Flysheets on the details of the meetings are circulated in advance in T&TI and details are also posted on the website a month or so in advance of the meeting.

22 September 2005 Egnatia Project, Greece, Joint Meeting with ITA

26 October 2005 Design and Construction of the Smart Project in Kuala Lumpur.

Meeting in conjunction with Underground Construction 2005, at Olympia. Please note the date and location

TUNNELLING INDUSTRY AWARDS

The Tunnels & Tunnelling International and BTS Tunnelling Industry Awards will be presented after the BTS meeting at Underground Construction 2005 at a reception from 6pm to 8pm at Olympia on Wednesday 26th October. The drinks reception is sponsored by Brintex.

There has been a good range of entries for three of the Awards' categories – UK Project, International Project and Young Engineer of the Year, but only a limited number of entries for the three other categories.

UNDERGROUND CONSTRUCTION 2005

Underground Construction 2005 is being held at Olympia, London, on 26th and 27th October 2005. The Conference and exhibition is being organised by Brintex on behalf of the British Tunnelling Society and the Institute of Materials, Minerals and Mining.

The Sessions are as follows:

Wednesday 26th October

09.30 – 11.00 International Projects
12.00 – 13.30 Practical Aspects of Tunnelling
14.30 – 16.00 Tunnel Maintenance and Remediation
16.30 – 18.00 BTS Discussion Evening
18.00 – 20.00 Awards and Drinks reception.
(Reception sponsored by Brintex)

Thursday 27th October

09.30 – 11.00 European Projects
11.30 – 12.30 Tunnel Planning, Contracting and Risk
13.30 – 15.00 Tunnel Design and Innovation (1)
15.30 – 17.00 Tunnel Design and Innovation (2)

The programme, list of papers for each session, the Conference details and booking form are on www.tunnelling-show.com. Please book now. The early booking rate is to 14th August 2005.

BTS CLOSED FACE WORKING GROUP

After more than two years of research, data collation, text composition, review and re-write, the report of the Closed-Face Working Group (CFWG) has now been published by, and is available from, Thomas Telford.

The title is “Closed-Face Tunnelling Machines and Ground Stability - A guideline for best practice”. The report is similar in size and design to the BTS/ICE Tunnel Lining Design Guide. The report, which is a 76-page A4 publication, provides state-of-the-art information about the application and safe operation of closed-face tunnelling machine systems.

There are 10 separate chapters illustrated with tables, graphs, and photographs and the report takes the reader through the technical development of the two types of closed-face tunnelling systems (slurry and EPB); the methods by which each system is selected for a given tunnelling project; a description of hazards associated with urban tunnelling; the use of risk management systems; a review of site investigation methods; and an examination of the tunnelling process from the construction as well as the monitoring, recording and data reviewing points of view.

The report also includes an analysis of data collated from more than 100 international incidents of closed-face

TBM ground instability and collapse in an effort to identify common factors associated with such events.

Given the amount of tunnelling completed each year using closed-face tunnelling machines, the incidents of ground instability are rare. It is, however, critical that the incidence of such events is minimised and avoided through awareness and best possible working practices.

The report ends with a set of conclusions and recommendations that provide a checklist for best possible working practice and establishes a baseline upon which future development and use of closed-face tunnelling machine systems can be tracked and updated.

The report has been written by a committee of highly experienced and knowledgeable BTS members and industry professionals. Included on the steering committee were Alastair Biggart, Chairman, David Court, and Bill Grose, the report is addressed to all those involved in soft ground and closed-face tunnelling machine development and operation as well as those managing development of major tunnelling projects in urban environments.

The Report which costs £65.00 is available from Thomas Telford, (Tel 44 (0) 1892 832299, Fax 44 (0)1892 837272, orders@thomastelford.com or via the internet www.thomastelford.com) from the ICE bookshop at Great George Street and other outlets.

BTS DATABASE

The Society, four years ago, decided to prepare a database of UK tunnels constructed in the last 30 or 40 years. The data are being collated from published information in UK and from conference papers.

The database will be placed on the website and will cover basic information on each project. There will be a search system based on keywords or project names.

The first 200 projects covering large and small projects across the whole spectrum of tunnel uses from road tunnels to water, sewer and service tunnels will be ready by the end of August, when the database will go live on the website. Over the following months further projects will be added and those on the database updated as necessary.

Further information will be circulated to members when the database goes live.

TUNNEL DESIGN & CONSTRUCTION COURSE 2005

The Tunnel Design and Construction Course was well attended bearing in mind the down turn in the tunnelling industry with 28 delegates for Modules 1 and 2, 15 for

Module 1 and 7 delegates for Module 2, giving a total of 50 delegates attending. Last year 86 delegates attended.

LOBBY GROUP

The Associated Parliamentary Group for Underground Space (APGUS) has not yet been reformed following the election as we have not managed to find an MP to act as Chairman, following the defeat of Lawrie Quinn at the election. We will be renewing the quest for a Chairman after the Summer Recess and we will keep you informed.

Further information from Helen Natrass
h.natrass@sir-robert-mcalpine.com
Tel 0207 808 5000

SPECIFICATION FOR TUNNELLING

The Specification for Tunnelling has been in use since 2000 (and since 1997 as the Model Specification) and has now been tested through the whole project cycle. In addition to recent and forthcoming publications which may impact on the Specification, there have been changes to various codes and standards referenced within the document.

The Specification will therefore be reviewed and updated over the coming months, and the reviewers would welcome feedback from the industry on any issues that may have arisen from its use so that this experience can be included within the revised document.

Please send any comments to Mike King at Halcrow
kingm@halcrow.com

RETC

Some 20 UK members attended RETC and there were a number of stands. BTS material was on the T&TI stand. Some 10 papers had UK input.

INTERNATIONAL TUNNELLING ASSOCIATION

The Society would like to have at least one representative on each of the ITA Working Groups. There are two levels of members – Participants, who hopefully can attend some or all of the annual meetings, and Correspondents, who can respond by e-mail or on the working group forums on the ITA website to questionnaires or correspondence and who can review texts and send in their comments prior to the annual meetings.

Details of each of the working groups current work was given in the June Newsletter following the meeting in Istanbul. The list of working groups is as follows:

- WG 2 Research
- WG 3 Contractual Practices in Underground Construction
- WG 5 Health & Safety in Works
- WG 6 Maintenance and Repair of Tunnel Works
- WG 11 Immersed and Floating Tunnels
- WG 12 Shotcrete
- WG 14 Mechanisation of Excavation
- WG 15 Underground Works and the Environment
- WG16 Quality
- WG 17 Long Tunnels at Great Depth
- WG18 Training
- WG 19 Conventional Tunnelling
- WG 20 Urban Problems, Underground Solutions

If you would like to be on one of the working group, Please contact Donald Lamond
donald.lamont@hse.gov.uk or Gavin Bowyer, the Secretary.

HEALTH & SAFETY

BS EN 12336

The British Standard version of EN 12336 "Tunnelling Machines – Shield Machines, thrust boring machines, augur boring machines, lining erection equipment – Safety Requirements" has been authorised for printing and should be available shortly from the BSI.

BS EN 815 A1

The amendment to BS EN 815 covering enhanced precautions has likewise been authorised for printing as BS EN 815 A1 and should be available shortly from BSI

Changes in Explosive Limits for Methane

Recent research within Europe has provided evidence for a change in the Explosive Limits for methane. The lowest explosive limit (LEL) has been reduced from the currently accepted value of 5% methane in air by volume, to 4.4% methane in air by volume. The upper explosive limit has been increased to 17% methane in air by volume.

HSE has decided as a matter of policy to adopt the revised limits with immediate effect. A number of CEN standards already incorporate the change.

Action limits in Section 12 of BS 6164 are expressed as volume concentrations of methane in air and should be reduced proportionally, to reflect the change in LEL from 5% to 4.4%. The equivalent limits expressed as %LEL have not been altered.

Please contact Donald Lamont on 0151 951 4818 if further information is required.

CONFERENCES

Don't forget to look at the back pages of Tunnels & Tunnelling International and Tunnelling and Trenchless Construction for the conferences coming up over the next two years. Also the International Tunnelling Association website www.ita-aites.org

Tunnel China 2005, 7th – 9th September 2005, Intex Shanghai, www.tunnel-china.com

3rd EFEE World Conference on Explosives and Blasting, 13th – 16th September 2005, Hilton Hotel Metropole, UK, www.efee-web.org

IUT' 05 Live – The 4th International Underground and Tunnel Fair, 14th – 15th September 2005, Hagerbach Test Gallery, Sargans, Switzerland, www.iut.ch

International No-Dig, 19th – 21st September., Rotterdam, The Netherlands. www.no-dig2005.com

Tunnelling for a Sustainable Europe, AFTES Congress 10th – 12th October 2005, Chambéry, France, www.aftes.asso.fr

Underground Construction 2005, 26th and 27th October 2005, London, UK. www.tunnelling-show.com (see above)

World Long Tunnels 2005 Taipei, Taiwan, 7th – 10th November 2005, www.longtunnel/2005.tanceb.gov.tw

STUVA Conference '05, 28th November – 1st December 2005, Leipzig, Germany, www.stuva.de

ITA 2006 World Tunnel Congress, and 32nd ITA General Assembly, 22nd – 27th April 2006, Seoul, Korea, www.ita2006.com

INTER tunnel 06, 16th – 18th May 2006, Lingotto Fiere Exhibition Centre, Turin, Italy, e-mail intertunnel@mackbrooks.co.uk