

British Tunnelling Society

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NEWSLETTER May 2004

INTRODUCTION

This May Newsletter is a little late due to the Editor's administrative problems. Our apologies.

The June informal meeting on the three new emergency crosspassages between the two Mersey Kingsway Tunnel, in Liverpool, completes the current session of meetings. After a break of two months the next meeting will be held at 6pm at the Institution on September 16th on Geotechnical Baseline and Design reports as Contract Documents, with speakers from the States.

Your Committee, with the new members elected at the AGM in May, under the Chairmanship of David Court, looks forward to providing a series of interesting meetings for the next session, including a meeting in October on the new BTS Tunnel Lining Design Guide, which has just been published.

CHANNEL TUNNEL RAIL LINK

The CTRL celebrated on 23rd March 2004 the completion of the London Tunnels, and the start of the Stratford International Station and the development of the Stratford site, at a luncheon in the Stratford Box.

The occasion included a Japanese ceremony for the successful completion of the two 7.5km long bored tunnel drives under the Nishimatsu/Cementation/Skanska Joint Venture Contract 220 with two Kawasaki TBMs.

The remaining tunnelling work on the project is the second 650m long Thameslink 2000 enabling work which will be completed later in the year.



The successful completion of the two Kawasaki drives (courtesy of RLE)

OBITUARY

It is with regret that we announce the death of Peter Samuel Cook.

TUNNEL DESIGN AND CONSTRUCTION COURSE

This year the course is being held at the University of Surrey, Guildford, from Monday 28th June to Friday 2nd July. The course provides a foundation in many of the aspects of tunnelling, including planning and feasibility studies, ground investigation, design for both soft ground and hard rock, and construction techniques and machines.

Delegates have the opportunity to attend either the five day course covering the full programme, or to attend one of two modules. Module 1, Monday to Wednesday, covers design and health and safety, and module 2, Wednesday to Friday, covers health and safety and construction. The brochure and application form has been sent out and may be downloaded from the website.

There is still room on this interesting and worthwhile course, so book NOW.

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.

17 th June	Mersey Twin Tunnels three new escape cross passages
16 th September	The Use of a Geotechnical Baseline Report and a Geotechnical Design Report as Contract Documents for Underground Works
7 th October	Special meeting on Tunnel Lining Design Guide

GOSSIP

Any interesting news about members to rodneycraig@compuserve.com

ANNUAL GENERAL MEETING

The Annual General meeting was held on 20th May. Three new members were elected to the Committee; Paul Hoyland, Balfour Beatty, Bob Ibell, London Bridge Associates, and Mike King, Halcrow.

At the Committee meeting, on the afternoon of the AGM, David Court, Nuttall, was elected Chairman for the next two years and Bill Grose, Arup, Vice Chairman. Details of the full committee and the chairman of the sub-committees will be given in the next Newsletter.

ANNUAL DINNER

On 7th May, a total of 472 members, partners and guests gathered for the annual dinner, which was again held at the Brewery, in the City of London. The numbers were slightly down on last year.

After dinner there was a short address from the Chairman, Anthony Umney, followed by the guest speaker, former Rolling Stone and current leader of the Rhythm Kings, Bill Wyman. He chose to speak for a short time and then took questions from the floor via a roving microphone. Helen Natrass assisted Bill for the presentation of the Tunnel Industry Awards.

The evening concluded with music of Jazz Folk fusion band All Jigged Out. The band was quieter than on previous occasions which was less disruptive to the vital networking. However, the band's fine musicianship may have been lost on those who preferred a more mainstream pop sound to dance. 'Ah, how will we ever please 'em all'.

TUNNEL INDUSTRY AWARDS

Full details of the Awards ceremony will be published in the June issue of Tunnels & Tunnelling International. The winners were:

Major Project	London Tunnels – Section 2 CTRL
Small Project	Skinningrove Relief Sewer
Achievement through Innovation	LaserShell™, TunnelBeamer™
Excellence in Tunnel Design	San Diego Mission Valley East LRT – SDSU Tunnel
Machinery/ Materials	Heathrow SWOT/PICCEX and HEXEX
Excellence in Safety, Health or Environment Performance	CTRL Contract 220



Major Projects Award. Anthony Umney Chairman, Alan Dyke, Managing Director Union Railways North, with Bill Wyman

TUNNEL LOBBY GROUP

Letters were sent in March to the Government on the postponement of the Kings Cross Phase 11 and a reply has been received.

The All Party Parliamentary Group for Underground Space (APGUS) met on 11th May in Portcullis House for a talk on "Tunnel Fires". Nicole Hoffmann, of Arup, and Robin Hall, of Mott MacDonald, gave a challenging and informative presentation, which was attended by a mixed group of BTS Members, Sponsors, Highways Agency engineers and Parliamentarians.

A small group of BTS Members were invited to lunch recently by Douglas Oakervee, the President of the Institution of Civil Engineers, to discuss underground and tunnelling matters with Parliamentary Under-Secretary for Transport, Tony McNulty MP and Lawrie Quinn MP, Chairman of APGUS. This was a most valuable opportunity to have the ear of a Government Minister and a supportive Member of Parliament for several hours, albeit informally. We took the opportunity of mentioning Kings Cross Phase 11 and CrossRail in amongst the wide ranging conversation about our industry.

We have made sure the BTS profile has been kept up in Westminster by attending the Annual Dinner of the Associate Parliamentary Engineering Group (APEG) and other meetings and receptions.

We do not have any dates fixed for future APGUS events at present. However, these are expected to include a visit to the London Sewers for Parliamentarians and the late October APGUS AGM, accompanied by a topical presentation.

Further information from Helen Natrass h.natrass@sir-robert-mcalpine.com

Tel 0207 8085141

BTS TUNNEL LINING DESIGN GUIDE

The new BTS Tunnel Lining Design Guide has now been published. The publication is dedicated to the memory of David Wallis, who set up the Working Group in 1999 when he was Chairman. David was actively involved with the guide until his untimely death in November 2000.

The guide has been funded equally between the Society and the Institution of Civil Engineers Research and Development Fund. The guide is an essential reference to the recommended standards and rules applicable to formulation for all manner of bored tunnels, shafts in any type of ground conditions.

The need for a single reference of recommendations and guidance for tunnel lining design has been recognised for a number of years. The Society considered that the valuable knowledge and experience of its members on tunnel lining design should be made available to the wider international underground construction community, and that a published guide was an appropriate medium. The Guide has been drafted for particular use in conjunction with relevant United Kingdom Standards, Code of Practice, customs and practice.

The Guide provides information and guidance on such topics as:

- The design processes' various stages
- Final usage requirements
- Choosing types of linings
- Lining systems and construction methods
- Stability problems in tunnels
- Poor appreciation of mechanical limitations of support systems.

The Tunnel Lining: Design Guide also provides essential information for those requiring to procure, operate, or maintain tunnels, or those seeking to acquire data for use in their design, with details of those factors which influence correct design such as end use, construction practice, and environmental influences.

The Guide is available, at a price of £65, plus postage and packing, (UK, 10%, up to a maximum of £8 of the order, or overseas 20%, up to a maximum of £50 of the order) by post from Thomas Telford Ltd., Units 1/K, Paddock Wood Distribution Centre, Paddock Wood, Tonbridge, Kent TN12 6UU. By fax 44 (0) 1892 837272, by telephone 44 (0) 1892 832299, by e-mail orders@thomastelford.com, via the website www.thomastelford.com or from the Thomas Telford Bookshop at the Institution.

COMPETENCE AND REGISTRATION

The Society has issued a questionnaire to all members with a view to establishing a broad understanding of the composition of the membership. The deadline for their return was the beginning of June and over 100 replies have been received. **The deadline has been extended to the middle of July** and the summary of the results will be discussed at the Committee's September meeting. It is hoped that the results of the questionnaire will assist us in developing a registration strategy which best addresses our members' needs and situations.

A sister organisation, the British Geotechnical Association, is proposing a step towards Registration of geotechnical engineers, with two categories. Details can be found in the May issue of Ground Engineering, and Roger Thompson presented the proposals at the BGA Conference on 9th June.

INTERNATIONAL TUNNELLING ASSOCIATION - Press Release

The International Tunnelling Association held its 30th meeting in Singapore from 22 to 27 May, in conjunction with the World Tunnel Congress 2004 "Underground Space for sustainable Urban development". The meetings were attended by 36 member Nations. The ITA welcomed two new Member Nations: Indonesia and Vietnam

Harvey Parker (USA) was elected the new President for the next three years. Four Vice Presidents were elected Koichi Ono (Japan)- First Vice President, Martin Knights (UK), Harald Wagner (Austria) and Yurcel Erdem (Turkey) and 4 new members of the executive council E. Grov (Norway), F. Gruebl (Germany), Y. Leblais (France) and M. Belenkiy (Russia). The Treasurer is F. Vuilleumier (Switzerland)

Reports of the Working Groups

WG 2 - Research

The document on "Risk management of Tunnelling projects", approved in 2003, has been published, and the recommendation on "Settlements induced by tunnelling" has been completed and will be submitted to the Executive Council for review. A first draft report on "Site investigations" has been prepared and was reviewed. For the coming year, the Working Group will work on the completion of this report and initiate a new action on the "Monitoring and Control of Underground Works". The Group has produced several documents over the past years, and more areas of investigation can be foreseen for the development of future works.

WG 3 -Contractual Practices

The contractual practices group has commenced its revision and update of the ITA's general principles for underground construction contracts. Innovative financing options, project delivery and construction and maintenance techniques all requiring reconsideration of ITA's guiding principles and the formulation of new globally applicable themes for contracting. The re-insurers recent entrance into risk management was identified as a significant market development in need of urgent consideration within ITA' contractual practices framework.

WG 5 - Health and Safety

The "Safety in Tunnelling" CD-rom project has been completed. The revision of the "Guidelines for good occupational health and safety practice in tunnelling" continued and it is hoped to have this document completed prior to the meeting in Istanbul. The Working Group agreed to commence work on a new project relating to guidance on fire safety for TBMs and other tunnel machinery. The Working Group hopes to collaborate with a number of organisations currently interested in the subject.

WG 6 - Maintenance and Repair of Tunnels

The Working Group reviewed the final draft of Document Guidelines for Structural Resistance for Road Tunnels, a joint document with the International Road Federation. This document is to provide guidelines for better protection of road tunnels in the event of a severe fire. In addition to the review Mr Rene Van De Bosch of the Netherlands gave a presentation on the Runhamer Fire Test which was performed in Norway this year. The Working Group Elected to continue their work by forming two task forces – one to develop a similar guideline for Fire Resistance for Metro Systems, and the other to start to develop a Rehabilitation Manual for Tunnels.

WG 11 - Immersed and floating tunnels

The catalogue of immersed tunnels has been handed over to the ITA's webmaster. The preparation of the report on settlements will go ahead as outlined in the meeting. The new activity will be to list the specific aspects of immersed tunnels to be included in the system of Instrumentation, Documentation and Verification (IDV), being a method to assure the viability of a facility from conceptual design throughout its operational life.

WG 12 - Shotcrete Use

Task 1 (State of the Art Report) has received contributions from 21 countries and is now ready for publishing. Reports on fire protective sprayable mortars; certification systems for shotcrete operators; and structural fibres for shotcrete reinforcement, are all planned to be ready for the Istanbul meeting. Contact with WG19 will be established to check for possible common topics.

WG 14 - Mechanized tunnelling

"Classifications and definition of TBMs with recommended keywords" has been completed with schematic drawings and will be placed on the ITA Website soon. The "TBM Glossary" has been completed in English, French, German and Japanese, and will also be placed on the ITA Website. The scope of work and schedule for "ITA Recommendation in Mechanized Tunnelling", which is the next theme for WG-14, was discussed. It was decided that the Working Group will

focus on excavating machine and fundamental equipment for functioning, which indicates that some comments on segments and other relevant items would also be included. Since robotics was still far from the field practice, those would not be included. The report should be completed in two years.

WG 15 - Underground works and the environment

The meetings heard six presentations on environmental considerations and problems in Member Nations' countries. The Working Group approved in principle the revised report of "Environmental and Sustainable Development Reasons for going Underground". Following receipt of written comments from members of the Working Group, the report will be finalised and forwarded to the Executive Council during the Summer. The meeting discussed the Working Group's other questionnaires and future work.

WG 16 - Quality

After the very recent publication of the general report on TUST, the activity of the Working Group will go on with the preparation of material for the ITA website and for didactical presentation. The true turning point is now the focusing on detailed and practical items, also by means of contacts with other WG, namely Conventional tunnelling, in order to prepare a short report on Selection of technical procedures for investigation, design and monitoring when difficult or changing conditions are encountered.

WG 17 - Long tunnels at great depth

The Working Group was informed about the decision of the Executive Council that the final version of the WG report on "Long Traffic Tunnels at Great Depth" has been approved and will be published soon. The working group decided to extend its domain of interest to cover the long hydraulic and pipeline tunnels only for the design and construction optimisation aspect.

WG 18 : Training

The discussion analysed the work done after Amsterdam's meeting: ITA standard presentation of the didactic material was finalised and was approved by ITA Executive Council and it is now available also the first teaching presentation coming from the Working Group's activity is available on ITA web site. For the future activities it was decided to develop a new collection of data on University Professors and tunnelling courses which will be the base of the University Network and to complete the preparation of teaching power point presentations coming from the activity of the Working Group.

WG 19 - Conventional tunnelling

In the first session 17 delegates representing 12 nations held a vivid discussion after the presentation of the Swiss, Brazilian, Japanese and Austrian Reports on the state-of-the-art on conventional tunnelling in their respective countries. In a next meeting in October 2004 the first draft of the ITA WG 19 Report will be discussed around the EUROCK-Congress at Salzburg.

WG 20 - Urban Problems, Underground Solutions

The group discussed the goal of the WG which is to publish a document which describes successful underground projects around the world and the urban problems they have addressed. The intended audience for the publication is planners and decision makers at all levels. Contributions on interesting and significant underground projects are requested from Member Nations. The contributions can take the form of a brief abstract where the project and the urban problems it addressed are described.

ITA OPEN SESSION ON UNDERGROUND SPACE FOR SUSTAINABLE DEVELOPMENT

Five papers were presented on the theme "Underground Space for Sustainable Urban Development". Harvey Parker (USA) spoke on the history of environmental and sustainable development, ITA's activities in sustainable development, and the effect of megacities on tunnel demand. Rodney Craig (UK) spoke on the work on ITA Working Group 15, Environment, and gave sustainable development case histories worldwide. In-Keun Lee (Korea) described the past and current state of the development of the Seoul subway including legal issues, construction issues, and important data on urban development resulting from subway construction. Jean-Paul Godard (France) spoke on Why Go Underground and presented ideas on how to improve the benefits of Underground Space. Finally, Sushma Goh (Singapore) addressed architectural considerations and design for humanising underground space. The co-chairs of the Open Session, R. Krishnan (Singapore) and Andre Assis (Brazil) led a lively discussion from the floor on the general theme of sustainable development

ITA SECURITY WORKSHOP

On Friday, May 21, 2004, the ITA Security Task Force held a workshop on underground security. The workshop consisted of a series of lectures and breakout sessions on the scope of ITA's work on tunnel security. The workshop considered the development guidelines and risk management tools to assist member nations to systematically, efficiently, and effectively

deal with emerging risk associated with antisocial acts against underground infrastructure and its users. It was agreed that ITA should continue its work on this important topic. The principles and tools have universal application and provide a framework for resource allocation and prioritization of security related initiatives while respecting the autonomy of member nations and their confidentiality requirements.

WTC 2005 IN ISTANBUL – 7 – 12 May 2005

"Let's Meet Where Two Continents Meet". The deadline for submitting abstract has been postponed until May 31st

WTC 2006 IN SEOUL – 29 April – 4 May 2006

"Safety in the Underground Space". The web site containing all the information is now on line.

WTC 2007 IN PRAGUE

The General Assembly has chosen Prague to host the 33rd General Assembly in 2007, May 5 to 10. The Theme of the Congress will be "Underground Space - the 4th Dimension of Metropolises"

CALL FOR PAPERS

2005 RETC 2005, Abstracts by June 15 2004

Tunnelling for a sustainable Europe, Congress 10th to 12th October 2005. Deadline October 2004 www.aftes.assoc.fr

World Long Tunnels 2005, Abstracts by 1st November 2004

ITA 2006 World Tunnel Congress, and 32 ITA General Assembly, April 2006, Korea. Abstracts Deadline 1st March 2005. www.ita2006.com

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

Engineering for the twenty-first century; ICE Annual President Conference 2004, 21st - 24th July. Key areas include; water and flood management; energy; waste; integrated transport; urban regeneration and design.

ITA – AITES 2005; World Tunnel Congress and 31st ITA General Assembly, 7th - 12th May 2005, Istanbul, Turkey

RETC 17th Rapid Excavation & Tunnelling Conference and Exhibition, June 27th - 29th 2005

World Long Tunnels 2005 Taipei, Taiwan, 7th - 10th November 2005