

British Tunnelling Society

at The Institution of Civil Engineers

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NEWSLETTER August 2006

INTRODUCTION

We are in the quiet season and hope that you are all enjoying your summer holidays and renewing your energy for the new session in September. This Newsletter catches up on some of the things that we have not had room for in recent Newsletters.

With a new Committee and under our new Chairman Bill Grose we look forward to an exciting new session of meetings and new initiatives.

OBITUARY

Val Hempleman – the father of the Blackpool Compressed Air Tables died recently. We hope to have a short biography in the next issue.

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.

21st September 2006 **The Tunnel Operator's Association and the Issues which are Important to Tunnel Operators**

19th October 2006 **Design and Construction of the Dublin Port Tunnel**

GOSSIP

Any interesting news about members to rodneycraig@compuserve.com

LOBBY GROUP

On 9th May Thames Water hosted a visit to their sewers and the Abbey Mills Pumping Station in East London. A small group of three peers with Bill Grose and Helen Natrass from the Committee attended.



Lord Methuen, Earl Attlee and Lord Haworth in their gear ready for the sewer inspection

On 19th July a meeting was held in the Boothroyd Room, Portcullis House, with a presentation on the very topical subject of Deep Underground Nuclear Waste Disposal. Although nearly 30 Parliamentarians expressed an interest in attending only 5 attended with nearly 65 from the Society.

Further information from Helen Natrass h.natrass@sir-robert-mcalpine.com
Tel 07803 612556.

YOUR NEW COMMITTEE

The new Chairman is Bill Grose with Paul Hoyland as Vice Chairman. The Past Chairman is David Court.

The Chairman of the Societies' various Sub-Committees are:

Papers and Meetings	Michael Francis
Training and Education	Bob Ibell
Awards	Ian Williams
Finance and General Purposes	Paul Hoyland
Health & Safety and Standards	Jack Knight
Technical	Mike King
Parliamentary Lobby Group	Helen Natrass
Crossrail Working Group	Bob Ibell
Annual Dinner	John Scholey
Underground Conference 2007	David Court
BTS Awards	Chris Bambridge
T&TI Advisory Board	Myles O'Reilly
Newsletter	Rodney Craig
Website	Chris Bambridge
ITA	Donald Lamont

If you wish to contact any of the Chairman of the Sub-Committees please do so through the BTS Secretary

THE SOCIETY'S SECRETARY

The Institution of Civil Engineers has recently re-organised their staff supporting the various learned societies. Janice Leung-Philpott is now the Group Executive Engineering Knowledge and Jade Donovan is the new BTS Secretary. The contacts are the same as above.

INTERNATIONAL TUNNELLING ASSOCIATION

ITA General Assembly

The ITA General Assembly was held in Seoul, Korea from 22nd to 27th April 2006, in conjunction with the Korean Tunnelling Association conference "Safety in the Underground Space" Martin Knights was present as a Vice-President of the ITA and the BTS was formally represented by Donald Lamont as UK Member Nation Representative. Although only a small group of BTS members attended, the BTS contribution to both events was considerable.

35 Member Nations were represented at the General Assembly with around 700 delegates from 45 countries attending the Congress.



Donald Lamont representing the United Kingdom

Where do you get a Piper in Korea?

The Society, supported by the Institution Conference Office and the Edinburgh Conference Bureau, nominated Edinburgh for the 2009 ITA Annual General Assembly. Budapest, Hungary, was the other nomination.

Martin Knights presented the bid on behalf of the Society. When called on to make the presentation he was piped into the meeting of the General Assembly to the strains of "Scotland the Brave". The piper – a Singapore lady who became fascinated with the bagpipes when her father worked for the British Army in Singapore, had been flown in specifically to boost the impact of our bid and to give those attending a taste of what to expect in Edinburgh.

To reinforce the message about Edinburgh, the piper played a selection of tunes during the coffee break following the formal opening ceremony of the Congress. Unfortunately the bid was unsuccessful with very close voting in favour of Budapest of 18 votes to 17.



The piper with the President of the Korean Tunnelling Association, Alfred Haack, Past President of the ITA, Donald Lamont and Martin Knights

The ITA Open Session at the Congress was on "Managing Risks in Tunnelling" and was arranged and facilitated by Martin Knights. Martin Smith and Donald Lamont gave presentations. Congratulations to Martin Knights for putting together a very stimulating and informative session.

David Chapman and Donald Lamont were invited to chair technical sessions of the Congress and both presented technical papers. Barry New and David Chapman had earlier been members of the papers review board for the Congress.

We must also thank Jennifer Knights who supported Martin with the bid presentation along with Bill Grose and Shani Wallis who lobbied for Edinburgh around the Congress venue.

The next ITA General Assembly will be in Prague, Czech Republic from 5th to 10th May 2007.

Summary of the Working Group Reports

Working Group 2 – Research

The meetings were attended by 16 members from 12 Member Nations. The recommendations on Settlement Induced by Tunnelling were finalised and is now ready for publication. Two other documents – The Strategy of Site Investigation and Monitoring and Control of Underground Works were reviewed at the meetings and will be finalised in Prague. A new area for work is Risk Management.

David Chapman represented the Society.

Working Group 3 – Contractual Practices in Underground Construction

The review and characterisation of all previous contractual propositions has been completed. In order to provide guidance for contracting in the future it is proposed that the groups mission is to provide a unified framework that can be applied internationally on all underground projects which articulates the special issues to be considered when contracting and provide guidance on where specific information can be obtained.

Martin Smith, Vice Animateur, represented the Society.

Working Group 5 – Health & Safety in Works

Nine Member Nations participated in the meeting. The Safety in Tunnelling booklet has now been printed in Germany, Switzerland and Austria and has been translated into Arabic, Russian and Czech/Slovak. The revision of the Guidelines for Good Occupational Health and Safety Practice in Tunnelling will be completed before the Prague meeting. A proposal to develop a guidance document on Rescue Containers/Blast Shelters was endorsed.

Donald Lamont, Animateur, represented the Society.

Working Group 6 – Maintenance and Repair of Tunnels

The Working Group met for two sessions and was attended by representatives for 14 Member Nations. The draft Guidelines for Fire Resistance for Metro Tunnels were finalised. The document will be ready for review later in the year.

Charles Allen represented the Society.

Working Group 11 – Immersed & Floating Tunnels

The meetings were attended by representatives from 14 Member Nations. Information on new projects and developments were discussed. A searchable database is to be prepared of immersed tunnel projects.

Jon Baber, Vice Animateur, represented the Society.

Working Group 12 – Shotcrete Use

Three tasks are about to be completed – The State of the Art Report, Information on the Evaluation of Fibre Reinforced Shotcrete and the Compilation of Standards on Nozzlemen Certification. Tests on fibre reinforced shotcrete are underway at the Hagerbach gallery in Switzerland.

Three new tasks have been established – Construction Accidents related to Shotcrete, Suggested Methods for Shotcrete Panel Tests Preparation and Fire Protection for Shotcrete.

Working Group 14 Mechanisation of Excavation

The status of previous reports was checked. The questionnaire for demonstrating the current status in mechanised tunnelling was approved and will be sent to Member Nations. Three topics have been chosen for future work – Training Courses and Education for Young Engineers, High-lighting the Benefits of the Mechanised Tunnelling and Risk Management and Insurance.

Working Group 15 – Underground Works and the Environment

Eight representatives from six Member Nations attended the meetings. The final draft report on Environmental and Sustainable Reasons for Going Underground was reviewed. The meetings had three presentations on environmental aspects of underground works. A working structure for the future was agreed with the focus on the external environment during the construction and operation of underground facilities.

Working Group 16 – Quality

Eight Representatives from six member Nations attended the meeting. The Working Group has received an invitation from the Executive Council to define the new directions for its activity. It is proposed to define the interactions of the various tunnelling stages and the methods for a better evaluation of the efficiency of the project. A didactical example will be provided. The PPT presentation for the website is also ready.

Working Group 17 – Long Tunnels at Great Depth

Thirteen members from 7 Member Nations attended. The meeting focused on presentations of relevant case histories of the new Alpine Base Tunnel and comments on the outline for the next report on Long Hydraulic Tunnels at Depth.

Working Group 18 – Training

Seven representatives from 7 Member Nations attended. The work since the Istanbul meeting and the second edition of the Post-graduate Master course were discussed. The French delegate presented a didactic tool for teaching purposes which is now available on the website.

A list of professors involved in tunnelling is being produced. A standard list of subjects which should be provided by universities for a good preparation for a tunnelling engineer was developed which will be placed on the website.

Working Group 19 – Conventional Tunnelling

Sixteen delegates from 13 Member Nations attended the meeting to discuss the final draft of the Report on Conventional Tunnelling which was approved. Future work will be on Construction Contracts and Monitoring.

Working Group 20 – Urban Problems, Underground Solutions

Ten delegates from 9 Member Nations attended the meeting. The group worked intensively in pursuit of its objective of creating an overview of the typical challenges of urban city planning and the sustainable solutions which are offered for underground space. This will lead to a comprehensive report on urban problems, underground solutions, key decision factors and unique case histories.

THE SOCIETY'S CHAIRMAN'S VISIT TO MADRID

On 21st June, Bill Grose was invited by the Spanish Association for Tunnelling and Underground Works (AETOS) to Madrid. The day started with a visit to the M30 construction site, at which Professor Manuel Melis Maynar, President of Consejo, hosted a trip to see the

tunnelling works where the World's largest EPB machine, Herrenknecht's 15.2m diameter TBM, was working on the north tunnel. An article on this machine is in the June issue of T&T.



Manuel Mellis standing next to the model of the Herrenknecht TBM

In the evening Bill presented a lecture entitled "Recent Tunnel Collapses, their Impact and Lessons Learnt" at the Annual General Meeting of AETOS. The visit was hosted by the President of AETOS, Manuel Arnaith Ronda (also the Director General of Infrastructure of Madrid) and Gustavo Armijo Palacio, Director of Developments at Geocisa. The evening finishes with the customary drinks at the bar!

VISIT TO GLENDOE

A visit was arranged, at short notice, on 8th August, to Loch Ness to view the early stages of the Glendoe Hydroelectric scheme. Nine Society members attended. Angus Spiers of Jacobs/SSE hosted the visit. In the past we have had site visits, but not for many years, and it is good that such visits are now being arranged.

Following a brief description of the project, the programme and the construction methods being used by the principal contractor Hochtief, the party was split into three groups for the site visit to view the drill and blast main access tunnel, the tailrace tunnel where the 5m Herrenknecht hardrock/shotcrete TBM is under assembly and the dam on the hilltop plateau.

Helen Nattrass, one of those visiting said that she was very lucky to be taken round by Derek Williams, the Jacobs/SSE Geotechnical Engineer, who demonstrated the rockmass characterisation system being used by the contractor for tunnel support and also gave an illuminating commentary on aspects of the shotcrete and tunnel monitoring.

The Committee is very grateful to Angus Speirs and Jacobs/SSE for making the visit possible.

NITROGEN MONOXIDE WORKING GROUP

As mentioned in the April Newsletter, a British Tunnelling Society led Working Group has been set up to address the issues raised by the Chemical Hazard Alert Notice (CHAN) 28 on Nitrogen Monoxide (NO) issued by the Health and Safety Executive in April 2003, revised July 2004.

The Notice withdrew the Nitrogen Monoxide (NO) Occupational Exposure Standards (OES) from EH40 and stated, "...long term (8-hour TWA) exposures to nitrogen monoxide should not exceed 1ppm". The Notice also advised "... employers should determine their own working practice and in house standards for control so that repeated exposure does not cause ill health".

The Working Group is issuing an Interim Advice Note which will be published on the website this month. Work is still proceeding on its main Best Practice Guidance document.

INTERNATIONAL TUNNEL INSURANCE GROUP CODE

The Code was published on the IMIA website www.imia.com at the end of January 2006. It should be noted that the BTS is not party to the publication of the Code.

HEALTH & SAFETY

Guidance on Shift Work

The HSE has recently published guidance on shift working. The reference is "Managing Shift Work: Health and Safety Guidance."

TUNNELLING AS THE SOLUTION TO SOCIAL PROBLEMS

Given the importance of tunnels to local infrastructure, public awareness of the value of tunnels as part of an integrated transport network is probably greater in Merseyside than in many other areas. However, the extent of some local enthusiasm for tunnelling has reached new heights (depths?) if a recent letter to the editor of one of the local Merseyside newspapers is anything to go by.

The letter's author in supporting earlier correspondence on the need for more integrated transport writes "We have volunteers in all social activities so why not in tunnel construction?". He then shows his lack of knowledge of modern tunnelling by continuing "Most tunnels are fairly easy to cut manually and volunteering would enable people to make a huge contribution towards the transport system". His final comment offers the Government a solution for antisocial behaviour

"Also the naughty youths could cut cycle tunnels at the side of rail tunnels". Perhaps this is one way to reduce the cost of tunnels!

BTS CLOSED FACE WORKING GROUP

Copies of the Report are selling well. 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.

HAV's BEST PRACTICE GUIDE

The HAV's Best Practice Guide is now on the website

The document which has had a significant contribution from the HSE provides the industry with a Current Best Practice Guide to the management of HAV's and is essential reading for all.

FIRE PROTECTION ENGINEERING FOR UNDERGROUND STRUCTURES

The Society is jointly organising with the ITA a Workshop at the Institution of Civil Engineers on 6th October 2006 entitled "Fire Protection Engineering for New and Existing Tunnels" which is being sponsored by BASF. The Workshop will be chaired by Alfred Haack, Chairman of the German Research organisation, STUVA. Bookings and enquiries should be addressed to the ICE Conferences, Institution of Civil Engineers, One Great George Street, London SW1P 3AA, conferences@ice.org.uk

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

Shotcrete for Underground Support, 12th – 15th September 2006, Whistler, Canada. www.eng-confintl.org

Tunnelling Towards 2010, 17th – 20th September 2006, Vancouver, Canada. www.tunnelcanada.ca

International Symposium on Utilisation of Underground Space, 6th – 7th November 2006, Sharm El-Sheikh, Egypt www.egyts.com