

# British Tunnelling Society

at The Institution of Civil Engineers

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## NEWSLETTER December 2006

### INTRODUCTION

There was a full house at the November meeting, which was a joint meeting with the British Geotechnical Association, when Richard Davies of Benaim gave a presentation on "Nicoll Highway Collapse, Singapore: Field Measurements, Observation and Factors involved in the collapse". Richard gave an excellent talk showing real time results as the collapse occurred.



Bill Grose with Richard Davies before the meeting

### OBITUARY

#### Bob Reed

Bob Reed died on the 27<sup>th</sup> September 2006 at the age of 74. Bob was born in India and attended school at Simla. After the family returned to the UK, Bob joined Kinnear Moodie & Co. as an apprentice engineer and was employed on various Kinnear Moodie tunnelling projects.

During the early 60's Bob was promoted to manage the Kinnear Moodie Experimental Length, at Finsbury Park, on the London Underground Victoria Line, one of two such contracts. When the Victoria Line construction began he moved to manage the construction of the Oxford Circus Station, probably the most complicated contracts on the project.

In 1968 Bob became the Project Manager for the Sherbourne Valley Sewerage scheme in Coventry.

In 1972 Bob joined the Lilley Group as their Regional Director in the Midlands. In the mid 1970s, he moved to Hong Kong where he was appointed the Construction Director for the Gammon Kier Lilley JV for their contract for the Mass Rapid Transit railway. The contract was mainly in soft ground with some high compressed air pressures particularly for the crossover tunnels.

Bob returned to the UK and was involved in a number of international tenders including the successful tender for Contract 4 of the Cairo Wastewater Scheme. He then moved to Cairo to manage the project.

When he returned to the UK he became Managing Director of Charcon Tunnels. He elected to stay when the Charcon Tunnels were taken over by the Costain Group.

Bob retired in 1997. He and his great friend Rupert McBean, who was his predecessor as MD of Charcon Tunnels, with their wives, visited their old school at Simla in India and climbed to the roof of the school to check that their initials were still carved into the roof timbers – they were!

Bob was diagnosed with asbestos cancer "Mesothelioma" and was operated upon to remove part

of his lung at the end of August, but never recovered and died at the end of September.

Bob spent all his working life in the tunnelling industry apart from 2 years on National Service in Malaya. He served on the BTS compressed air committee for many years.

Bob was a mason who became Master of his lodge. He was a fluent Urdu speaker. Bob was a gentleman to the end and will be missed by his many friends. He is mourned by his wife Sheila, their two daughters and two grand daughters.

### **Val Hempleman**

Val Hempleman, who recently died, as mentioned in the October Newsletter, was 84. Val kept the Royal Navy at the forefront of deep diving technology by establishing several world records and saving countless lives through his work on decompression tables.

As Superintendent of the Royal Navy Physiological Laboratory from 1968 to 1982 he worked to overcome "the bends".

In 1966 Val wrote the "Blackpool Tables " for compressed air tunnelling work, which became a worldwide industry standard. Until then tunnelling contractors had been using an ad hoc mixture of tables and imprecise procedures, so that tunnel workers suffered a much higher incidence of decompression sickness than divers.

In 2003 the Health & Safety Executive recorded that no lives had been lost in tunnelling through caisson disease, the bends, since the introduction of his decompression tables.

A full obituary can be seen in the Daily Telegraph 30<sup>th</sup> October issue. [www.telegraph.co.uk/news/main](http://www.telegraph.co.uk/news/main).

### **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 T&TI and details are also posted on the website a month or so in advance of the meeting.**

**18<sup>th</sup> January 2007      Limerick Main Drainage Project**

**15<sup>th</sup> February 2007      Joint Meeting Min South IMMM. Stabilisation of**

**Caverns at Coombe Down, Bath**

**15<sup>th</sup> March 2007**

**Glendoe Hydro Scheme**

**19<sup>th</sup> April 2007**

**Harding Prize**

### **GOSSIP**

A year ago we mentioned that Diane Mather had moved to Australia and was working for GHD in Brisbane. In September Diane and her husband had a little boy called Flynn.

Any interesting news about members to [rodneycraig@compuserve.com](mailto:rodneycraig@compuserve.com)

### **LOBBY GROUP**

Further information from Helen Natrass [h.natrass@sir-robert-mcalpine.com](mailto:h.natrass@sir-robert-mcalpine.com)  
Tel 07803 612556.

### **HARDING PRIZE COMPETITION**

Every two years we hold the Harding Prize Competition which is held for our younger engineers. The Competition is open to all aged 33 or under on 31<sup>st</sup> December 2006.

Entrants must submit an original paper relating to any aspect of tunnelling which they consider of interest to those in the tunnelling industry. The papers will be reviewed by a BTS Sub-Committee and a number of papers, usually three, will be selected for an oral presentation at the April 2007 meeting.

The winner will be given two tickets to the Society's Annual Dinner in May 2007 where there will be a presentation of a cheque for £500, a certificate and a copy of Sir Harold Harding, the founder Chairman of the Society, book "Tunnelling history and my own involvement".

Runners up who give oral presentations will receive a cheque for £100 and all other entrants whose papers are considered to be of an adequate standard will receive a cheque for £50. In addition all these participants and the winner will also receive a free membership of the Society for the next year, which includes a year's copies of Tunnels & Tunnelling International.

**The closing date for submission of papers is 31<sup>st</sup> January 2007.**

**Senior tunnellers, please support your younger engineers and encourage them to write a paper for this Competition. In 2005 and 2003 we had 8 or 9 papers which was excellent. We would like to have a similar number next year.**

The rules are on the website and have been issued with the September Tunnels & Tunnelling International. Copies can be obtained from the Secretary.

In broad terms the papers must be written by one person and should be a length of 2500 to 4000 words. The oral presentations will be or 15 – 20 minutes with 10 minutes of questions.

The Sub-Committee will assess the papers for:

- Content and understanding of the subject and its interest to the tunnelling profession
- Presentation and illustrations
- Quality and elegance of writing
- Clarity and fluency of presentation
- Whether the paper was prepared as part of an academic activity or as part of the author's job activities.

Allowance will be made for the age of the entrants and for any obvious assistance received.

## **NUCLEAR WASTE – THE CHALLENGE OF UNDERGROUND STORAGE**

Wilmington Conferences, supported by the Society, Tunnels & Tunnelling International and Nuclear Engineering International, are organising a two day conference "Nuclear Waste – The Challenge of Underground Storage" on 23<sup>rd</sup> - 24<sup>th</sup> January 2007 at the Congress Centre in London.

Through attending you will:

- Examine solutions to secure the long-term management of nuclear waste
- Understand how the tunnelling industry can meet the challenge of deep disposal
- Identify the preparation and implementation of the final disposal of spent nuclear fuel
- Review the preliminary investigation and the design implantation
- Discuss the lessons learnt from previous experience

**Book before 31st December and save money.**  
[www.wilmingtonconferences.com/radwaste2007](http://www.wilmingtonconferences.com/radwaste2007)  
**Register two delegates and the third may attend free!**

For more information on sponsoring /exhibition contact Gary Tween (44) (0)20 8269 7849 or [gtween@wilmington.co.uk](mailto:gtween@wilmington.co.uk)

## **INTERNATIONAL TUNNELLING ASSOCIATION**

The ITA General Assemblies comes round on a very regular basis with the 2007 Assembly being held in Prague from 5<sup>th</sup> – 10<sup>th</sup> May 2007. However, you will have to wait until September 2008 for the next one in Dehli, but then we will be back on the usual programme for the 2009 meeting in Budapest in May.

## **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 has issued an Interim Advice Note which is now on the website. 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](http://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**

### **The Compressed Air Working Group**

The Compressed Air Working Group (CAWG) continues to meet twice a year, thanks to financial support from the Society. Its membership consists of engineers, doctors and researchers representing both compressed air and diving interests. Two of the issues discussed at its most recent meeting are described below. Members of the Society are welcome to consult the group on hyperbaric issues. Contact Donald Lamont through the Secretary.

### **Radiographic Atlas**

CAWG has been working on the reproduction of a historic atlas of x-ray films relating to osteonecrosis. The original radiographic atlas was compiled in the mid 1970s through the work of Dr Philip Griffiths and defined the

classification of bone lesions which are symptomatic of dysbaric osteonecrosis. Twelve copies of the original atlas were made and distributed to orthopaedic specialists. Over time these copies have deteriorated and some have been lost.

Recently a copy was obtained by CAWG and high resolution digital photographs of the original films have been taken. These photos have been made into a digital presentation which, once it has been annotated, will be distributed free of charge to orthopaedic specialists and teaching hospitals. CAWG members are to contribute additional material to add to the comprehensive nature of the atlas.

Experts who have seen the new version have been highly complimentary about its quality and usefulness.

### **Doppler Monitoring**

CAWG is being consulted on a research report prepared by a team of practitioners and researchers led by the Institute of Occupational Medicine which is looking into the use of Doppler as a real time monitoring tool for assessing the effectiveness of decompression regimes in tunnelling.

Traditionally that effectiveness has been assessed through a retrospective study of decompression illness incidence, the most recent of which has just been published in the November 2006 edition of Civil Engineering – the general part of the ICE Proceedings.

Retrospective studies have varied in scope from being contract specific or covering a period of up to three decades. The IOM research is a world first in the application of Doppler monitoring to compressed air tunnelling and it is hoped to hold an open meeting off CAWG sometime in 2007 to discuss the results.

### **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](mailto:orders@thomastelford.com) or via the internet [www.thomastelford.com](http://www.thomastelford.com) ) from the ICE bookshop at Great George Street and other outlets.

### **HAVS BEST PRACTICE GUIDE**

The HAVS (Hand Arm Vibration Syndrome) Best Practice Guide is now on the website. There was an error in the spelling of HAVS in the October Newsletter for which we apologise.

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

## **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](http://www.ita-aites.org)

State of the Art of Fire Safety in Road Tunnelling, 8<sup>th</sup> – 9<sup>th</sup> February 2007, Zagreb, Croatia. [Jmarija@grad.hr](mailto:Jmarija@grad.hr)

1<sup>st</sup> International Tunnel Safety Forum for Road and Rail, 23<sup>rd</sup> – 25<sup>th</sup> April 2007, Lisbon Portugal. [www.tmi-intelligence.com](http://www.tmi-intelligence.com)

World Tunnelling Congress and 33<sup>rd</sup> ITA Congress, 5<sup>th</sup> – 10<sup>th</sup> May 2007, Prague, Czech Republic [wtc2007@metroprojekt.cz](mailto:wtc2007@metroprojekt.cz)