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Editorial, Special edition of the JOHSANZ "Occupational Hygiene in Australia"

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editorial

Occupational hygiene in Australia

**by David Bromwich,
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The papers in this special issue of the journal are based on presentations at the 24th annual conference of the Australian Institute of Occupational Hygienists (AIOH2006) which was held on the Gold Coast in December 2006. The theme of the conference, "Waves of Change", reflects the continual change in Australian workplaces and the need to not only adapt to the changes, but also to anticipate and understand the changes (such as the implications of our ageing workforce).

AIOH: a brief history

The first Scientific Officers in Occupational Hygiene meeting was held in May 1960, following a request to the Occupational Health Committee of the National Health and Medical Research Council in 1959. This group became the focus of occupational hygiene in Australia. In December 1979, a proposal was put to the meeting that a professional organisation be formed and thus, in February 1980, the Australian Institute of Occupational Hygienists (AIOH) was born, with 29 members.

From its outset, the AIOH established strong links with the two American industrial hygiene associations (the American Industrial Hygiene Association (AIHA), and the American Conference of Governmental Industrial Hygienists (ACGIH)) and the British Occupational Hygiene Society (BOHS). In the early 1980s, the AIOH

came to an agreement with the American Board of Industrial Hygiene (ABIH) to award certification maintenance points for various AIOH functions and started to run the ABIH core and comprehensive examinations in Australia. The entire first batch of candidates passed the examinations — a feat which has never since been repeated. By the mid-1980s, the AIOH had representatives on numerous national and state government committees on education and training, chemicals and standards development, and on committees established by other organisations such as the National Association of Testing Authorities (NATA), the Australian Institute of Petroleum, the Minerals Council of Australia, the Australian Mesothelioma Register, the ACGIH, and later the Australian Government's National Occupational Health and Safety Commission (NOHSC).

In 1987, the AIOH was one of the eight initial signatories to the agreement that formed the International Occupational Hygiene Association (IOHA). The AIOH President of the day, Pam De Silva, went on to become the second President of the IOHA. The IOHA represents 25 occupational hygiene associations internationally with issues like the international recognition of qualifications.

The AIOH was incorporated in 1988. In 1993, the AIOH had reached a size where it was able to establish a permanently staffed office to perform the administrative functions of running the Institute. It had matured to a point where it was run as a business as well as a professional learned society. By this time, the Institute was producing its own publications and running professional development programs.

In 1999, the AIOH Council commenced work on establishing a certification scheme for the maintenance and recognition of professional competence for hygienists in Australia. This scheme came to fruition in 2004 and was recognised by the IOHA in 2006. It is only one of six certification systems to achieve IOHA National Accreditation Recognition.

Organisation and goals

The current AIOH membership is approaching 500, and has been growing at 13% per annum for the last 20 years, after an initial rapid growth. There are a number of grades of membership: Fellow Membership (by election), Full Membership, Provisional Membership, and Associate Membership. The first three grades of membership are the professional grades. The Associate Membership is intended for those with an interest in occupational hygiene, or for students.

An elected governing Council (comprising the President, the President-Elect, the Secretary, the Treasurer and three Councillors) manages the affairs of the Institute. The overall objective of the AIOH is to help ensure that workplace health hazards are eliminated or controlled. It seeks to achieve this by:

- promoting the profession of occupational hygiene in industry, government and the general community;
- improving the practice of occupational hygiene and the knowledge, competence and standing of its practitioners;
- providing a forum for the exchange of occupational hygiene information and ideas;
- promoting the application of occupational hygiene principles to improve and maintain a safe and healthy working environment for all; and
- representing the profession nationally and internationally.

The AIOH considers occupational hygiene to be the art and science dedicated to the anticipation, recognition, evaluation, communication and control of environmental stressors in, or arising from, the workplace that may result in injury, illness or impairment, or affect the wellbeing of workers and members of the community. These stressors are normally divided into the following categories: biological, chemical, physical, ergonomic and psychosocial.

Occupational hygienists require knowledge of toxicology, physiology, occupational diseases, epidemiology, ergonomics and OHS law. They also require an understanding of the principles of hazard control, including process modification, ventilation, personal protective equipment (PPE), and associated administrative measures.

To support the administration of the AIOH, there are committees for: membership and qualifications; the newsletter; exposure standards; the annual conference; a certification board; ethics and constitution; education; communications; awards and sponsorship; and planning and development.

The AIOH interacts with other Australian professional OHS bodies through the Congress of Occupational Safety and Health Presidents (COSHAP has the objective of improving the standing of OHS professionals in industry, government and the community).

The Institute is active in the development of Australian OHS Acts, regulations and codes of practice through representations to government, industry and trade unions. Institute members participate on committees and working parties of the Australian Safety and Compensation Council, state OHS authorities, Standards Australia, NATA, and various other industry and employer organisations.

Training and education program

In 2004, the AIOH introduced the Certified Occupational Hygienist (or COH) professional designation, with annual examinations and requirements for continuing education. Not surprisingly, this has made the two days of Continuing Education Sessions run before the annual conference very popular. These courses are complemented by courses held across Australia (including Tasmania and the Northern Territory), which are organised by the Education Coordinator.

Past courses include skin management, exposure assessment, moulds, noise, expert witness and asbestos. Other courses in 2007 include biomonitoring, epidemiology and (again) asbestos. Future courses may include diesel particulate (other than in underground mines), globally harmonised systems, welding fumes, odours in industry, water treatment and the measurement and control of biological hazards, and crystalline silica.

A framework for providing mentoring to young hygienists by experienced hygienists has also been established.

The long-running Deakin Graduate Certificate and Graduate Diploma of Occupational Hygiene are accredited by the AIOH, and another university is currently going through the accreditation process. For many years, NOHSC also ran an accredited 13-week intensive course in occupational hygiene in Sydney.

Publications

To make some of the expertise of Australian hygienists more widely available, the AIOH has published four booklets that are available from the AIOH website (www.aioh.org.au).¹⁴ In addition, the annual conference proceedings are published each year and an indexed compact disc of over 800 papers dating back to the first conference in 1982 has been produced. This represents the collective knowledge of occupational hygiene in Australia.

For many years, an introductory occupational hygiene text by Dr David Grantham was used in many tertiary courses across Australia, with well over 5,000 copies sold.⁵ A fully revised second edition authored by experienced Australian hygienists and edited by Dr Cheryl Tillman was launched in December 2006.⁶ The possibility of a Chinese edition is being investigated.

Members of the AIOH receive a quarterly newsletter, now in an electronic form, with a varying amount of scientific content.

Papers in this issue

All of the papers in this special issue have been written by practising occupational hygienists from across Australia. They represent work undertaken in academia and in industry that addresses the practical issues in Australian workplaces and undergraduate OHS education.

In a quintessential Australian study, Kift, Reed, Mulley and Davidson studied dust and bioaerosols from shearing sheep in eastern New South Wales and found that, while the dust levels were acceptable, there was a risk of respiratory allergies.

In the second paper, Trott and Kift reviewed the public and occupational health aspects of the tattoo industry. This industry has its own culture and, by its nature, tends to be suspicious of authority. The authors highlight the problems associated with conventional training programs, as the level of education among tattooists tends to be low.

The paper from Benke won the 3M Prize for the best paper at the AIOH2006 conference. This paper alerts hygienists to the implications of an ageing workforce for future hygiene practice. Current exposure standards and PPE usage may require reassessment, and greater surveillance of the workforce will be required with an ageing workforce.

Tracking down the cause of indoor air quality problems can be notoriously difficult and Le Van has done an admirable job in determining the source of the problem and preventing its reoccurrence. It appeared that various sealants, moisture barrier treatments, and adhesives in hospital-grade carpet reacted with the lime in the concrete to produce offensive phenols and cresols (though the main offender was 2-ethyl-1-hexanol — probably from the alkaline degradation of the plasticiser di-(2-ethylhexyl) phthalate). The problem was eventually solved by coating the concrete with layers of epoxy to seal the surface, before replacing the carpet with a natural fibre carpet with mechanical fixings.

In the paper by Clues, Bromwich and Jones, over a thousand polymer-coated gloves used in industry across Queensland were examined (gloves were sourced from a glove-laundering facility developed by Jones). They found that the patterns of visible failure were very different from published studies with clinical gloves, and they offer reasons for this difference. Unlike other forms of PPE, less care often goes into the selection and management of gloves. The authors outline a management system that capitalises on the central processing of the gloves to assist in better glove selection. However, it was not known to what extent good gloves are disposed of and bad gloves are reused.

In a study by Aumann, Pisaniello, Lee and Sibly, OHS questionnaires given to 3,428 first-year university students in two states were analysed. Over half had been exposed to workplaces and 10% had had an occupational injury. There were differences between the values shared by international students and local students and between males and females, which would be useful when developing and implementing evidence-based OHS policies and training in our tertiary institutions. It appears that the students' values are a good predictor of behaviour.

In the final paper, Orfanos studied sulphuric acid exposure during the electrowinning of zinc in a smelter. Sulphuric acid had been found by the International Agency for Research on Cancer to cause laryngeal cancer, so the inhalable size fraction was measured.⁷ The size of the study was limited by the size of the workforce, but it was found that exposures from areas adjacent to the zinc plant cell house floor were significant, and similar to those known to cause laryngeal cancers. The study will form the baseline for evaluating the effectiveness of engineering controls and the use of respiratory protection.

Conclusion

We hope that these papers will give a better understanding of the range of work that Australian occupational hygienists perform, and that they will help to attain the goal of eliminating injury and disease in industry and the community in Australia.

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Have we heard from you?

The journal's aim is to improve the exchange of information between all those involved in OHS. Our growing readership indicates that this requires coverage of quite a range of perspectives and the journal's format encourages expression of this diversity. It affords a range of (more or less formal) styles of writing and other contributions.

These include:

- Feature articles
- OHS in brief articles
- Edited reports on conference proceedings
- Letters to the Editor
- Research reports
- Resources material (brief notes on organisations, persons, publications, workshops and activities)
- Conference and seminar listings
- Courses

Problems and solutions are equally interesting — the journal's emphasis is on the provision of current information and practical help.

Notes covering more detailed guidelines to contributors appear on page 288.



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