rescuer divers once the surface has been reached – but at the end of the day if you can't face the risk, don't dive!

References

1 Reilly T, Wooler A, Tipton M. Occupational fitness standards for beach lifeguards. Phase 1: the physiological demands of beach lifeguarding. *Occup Med (Lond)*. 2006; 56: 6-11.
2 Reilly T, Iggleden C, Gennser M, Tipton M. Occupational fitness standards for beach lifeguards. Phase 2: the development of an easily administered fitness test. *Occup Med (Lond)*. 2006; 56: 12-7.

Dr Nick Cooper
SO1 Health, Headquarters
British Forces Germany Health Service
Wegberg, BFPO 40, Germany
E-mail: *<nick.cooper723@land.mod.uk>*

Key words
Letters (to the Editor), health, standards, rescue

Maintenance of Professional Standards

Dear Editor,

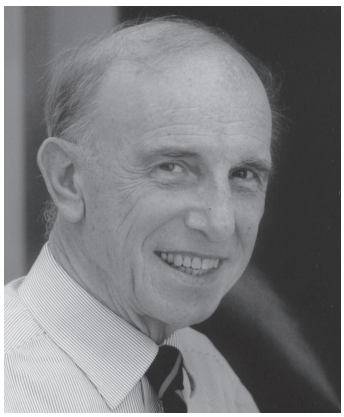
Here are the details of the Maintenance of Professional Standards (MOPS) points approved by the Australian and New Zealand College of Anaesthetists (ANZCA) for the SPUMS 34th ASM, Fiji, 6–10 June 2006.

- Meeting sessions: 12 CME points, under Code 111.
- Hypothetical sessions (8 June 2006): 6 QA points, under Code 211.
- Airway workshops sessions (9 June 2006): 8 CME and 4 QA points, under Code 700.

Jan P Lehm
Department of Diving and Hyperbaric Medicine
Prince of Wales Hospital
Randwick, NSW 2031, Australia
E-mail: *<lehmj@sesahs.nsw.gov.au>*

Key words
Letters (to the Editor), meetings, MOPS

Obituary
Brian Andrew Hills



Physiologist
Born: Cardiff, Wales,
19 March 1934
Died: Brisbane,
13 January 2006

Brian Andrew Hills was the head of the Golden Casket Paediatric Research Laboratory at the Mater Medical Research Institute in Brisbane for 10 years, where he studied surfactant and its role in health conditions such as sudden infant death syndrome (SIDS), asthma and glue ear. It was a research interest seemingly far removed from his engineering training, which offered a new insight to biological puzzles.

An outstanding student, he was awarded a full scholarship to Cambridge University in 1952, where he obtained a Bachelor of Arts in Physical Sciences and a Masters in Chemistry. After university, he worked as a chemical engineer in Malaya and New Zealand before entering academia in 1963 as a senior lecturer in Chemical Engineering at the University of Adelaide. He also embarked on a doctoral thesis investigating the prevention of bubbles in nylon 'melts' during the spinning of the fibres. However, it wasn't long before a chance encounter inspired him to change his thesis topic and launched him into the first of his two research interests.

Sitting next to a physiologist in the staff room one day, he became engaged in a discussion of how to prevent bubbles forming in divers. Recognising the similarities between this problem and that at the heart of his thesis, he was fascinated with the biological bubbles and soon switched the bubble topic of his thesis from nylon melts to decompression sickness, or 'the bends'.

After becoming embroiled in Hugh LeMessurier's study of the diving habits of the pearl divers of the Torres Straits and Broome, Brian embarked on a complete re-evaluation of the literature, both medical and non-medical, and practices of decompression. His thesis, published in 1966, advocated the use of adding a 'deep stop' to a diver's ascent, rather than the conventional, longer stop in shallower waters. He proposed an entirely new method of determining decompression schedules, and most of today's decompression schedules pay homage at least in part to Brian's studies. Unfortunately, the mathematical complexity of his diffusion-based model resulted in much of this work being overshadowed by the simpler, traditional methodology adopted by the US Navy.

Over the next five years, at Brown and Duke Universities in the USA, he pursued his interest in the behaviour of gases in the body leading to decompression sickness. In 1975, he was awarded a higher doctorate from the University of Adelaide for his research on decompression sickness, and in 1977 published a book on the topic.

After a brief return to England at London University, he spent three years as Professor of Physiology at the University of Texas Medical School at Galveston, before joining UTMS at Houston after a year's sabbatical at the University of Dundee, Scotland. He was a consultant to several diving companies, as well as a consultant to NASA, advising on the gaseous environment to be used in the shuttle and space station.

While at Duke University, he had discovered that the bubbles formed in many tissues throughout the body by decompression sickness were coated by surfactant. His discovery was significant since surfactant had previously been studied only in the lung. From the late 1970s, his research focused increasingly on surfactant.

Once again, he called on his training as a chemical engineer to explore the mysteries of the human body. Recognising the similarity between biological and industrial surfactants, which are used as lubricants, release (anti-stick) agents, protective barriers and corrosion inhibitors, he set about locating surfactant in areas of the body where these physical properties would be beneficial. He became a world authority on surfactant, which was recognised by Cambridge University with a higher doctorate in 1981. In 1988, his book *The biology of surfactant* was published.

He often joked that his wife, Audrey, had never forgiven him for their leaving Australia in the 1960s. It was perhaps with the desire to one day retire in Australia that he took up the position of Professor and Head of the Department of Physiology at the University of New England in Armidale, NSW, in 1986. Here, he sought to develop treatments for health conditions that his research indicated were associated with a deficiency of surfactant, such as osteoarthritis and peptic ulcer.

In the early 1990s, while still at UNE, he collaborated with Dr Brent Masters, who was then at the Mater Children's Hospital, to demonstrate differences between lung surfactant from healthy infants and those who experienced prolonged apnoeic episodes.

In 1994, Brian became the head of the Golden Casket-funded Paediatric Research Laboratory, the first laboratory at the Mater Medical Research Institute. His major project in the early years was SIDS. He demonstrated abnormal properties of lung surfactant from infants who had died of SIDS, which had potential as a test at birth for SIDS risk.

His research later focused on asthma, which he believed was associated with a deficiency in a protective coating of surfactant lining the airways. A clinical trial sponsored by a British pharmaceutical company showed promise in using synthetic surfactant to prevent asthma. The same surfactant also showed encouraging results in treating otitis media (glue ear). He also developed an artificial lubricant which was trialled in patients with osteoarthritis.

Outside of work, he was a keen sailor, and on weekends he could often be found enjoying a sail on Moreton Bay. However, he was never happier than when he was in the laboratory, extolling the virtues of surfactant. His greatest wish was to see the commercial development of one of his surfactant treatments, as confirmation of his theory of the mechanism of surfactant. Although further clinical trials are on the agenda, his wish will not be fulfilled.

Over the last few years Brian had his interest in decompression reawakened by correspondence and visits from technical divers keen to learn about his earlier work. Always keen to teach, Brian welcomed and corresponded vigorously with these divers despite his deteriorating health.

He had battled cancer for many years, and retired two years ago due to his declining health. He died at Mt Olivet Hospital, where he had been admitted in December. He is survived by his wife Audrey and children Yvette and Graham.

Yvette Hills and Andrew Fock

Key words
Obituary, decompression, decompression sickness, surfactant

A personal view of Brian Hills' contribution to decompression theory and practice

David Doolette

It was with great sadness that I learnt of Brian Hills' death in January this year. I often felt I was following in his footsteps: I likewise earned my PhD at the University of Adelaide (although some 30 years later), continued work there on decompression theory, and the very small but useful collection of relevant literature in the library clearly spanned Brian's tenure. Brian's early decompression work was done with Hugh LeMessurier's aeromedicine group in the Department of Physiology, and I was able to learn some anecdotes from a contemporary. One task requested by the Air Force was the practical issue of what would happen to a thermos of hot coffee during an explosive loss of cabin pressure – a question they answered with messy results in the group's man-rated hypobaric chamber.

A serious student of decompression theory soon finds that much of the work on the science of decompression is difficult to source, being in technical reports, PhD theses, out-of-print books, or never published. Brian Hills, however, made a prodigious contribution to the mainstream scientific