

Part 2. Queensland Rail also undertakes some diving work on a sub-contract basis.

#### *Communications*

Austel and Telecom employ contract divers to conduct underwater work from time to time. These divers are trained to various parts of Australian Standard AS 2815 and work to the requirements of AS 2299.

#### *Electricity, gas and water*

Divers are used in the water supply and treatment industry to inspect sewage treatment plants, water reservoirs and dams. The majority are not directly employed by local authorities but are hired on a contract basis.

The Gold Coast City Council employs 7 occupational divers. These divers are trained to various parts of Australian Standard AS 2815 and work to the requirements of AS 2299.

#### *Other occupational diving*

Many of the major tourism operators on the Great Barrier Reef employ occupational divers either directly or under sub-contract to provide diving services. These divers inspect moorings, and vessel hulls as well as undertake other occupational diving related activities. Other diving activities in this field include the collection of golf balls from dams and water courses on golf-links.

#### **Acknowledgments**

Unfortunately space is not available for individual recognition of the 29 organisations, 6 Trades Unions and 27 people the author would like to thank for their input. This report would not have been possible without their help.

#### **References**

- 1 Windsor D. A study into the number of dives conducted on the Great Barrier Reef in 1994. *SPUMS J* 1996; 26 (2): 72-74

*David Windsor is Secretary of Dive Queensland, a dive tourism body. He serves on Standards Australia and Worksafe Australia occupational diving committees. His address is PO Box 19, The Grange, Queensland 4051, Australia. Phone 07-3856-0717. Fax 07-3856-0686. E-mail windsor@mailbox.uq.edu.au .*

## **AUSTRALIA AND NEW ZEALAND HYPERBARIC MEDICINE GROUP (ANZHMG)**

### **ADDENDUM TO STATEMENT ON THE USE OF HYPERBARIC OXYGEN THERAPY AT SITES OTHER THAN PUBLIC HOSPITALS (OCTOBER 1995).**

#### **PHYSICIAN REQUIREMENTS AND TRAINING**

##### **Key Words**

Hyperbaric facilities, hyperbaric oxygen, qualifications, treatment.

##### **Introduction**

This addendum is designed to further elaborate the position of this group with regard to appropriate training and qualifications for physicians who intend to practice Hyperbaric Medicine.

The ANZHMG wishes first to state that, as presently constituted, it has no regulatory or accreditatory status with regard to hyperbaric facilities or the physicians who may staff them. This paper represents the consensus view of this group and is offered as such in response to a number of requests for advice on these matters. It is our understanding that those matters are currently under review by appropriate State and Federal authorities.

##### **Appropriate training for medical officers in “non-comprehensive” hyperbaric facilities**

The question has arisen as to the appropriate training for physicians who wish to work with hyperbaric facilities of a more limited nature than those 24-hour facilities currently operating in public hospitals. Such facilities are proposed by a number of groups and a small number are already in operation in Australia. Typically they propose to limit treatment pressures to two atmospheres absolute (2 ATA, 2 bar or 101 kPa gauge pressure) and to treat only uncomplicated and non-critically ill patients. Proponents of such facilities argue that because of their limited nature, full training, as described in section 4 of our statement of October 1995,<sup>1</sup> is both inappropriate and impractical.

The ANZHMG acknowledges this argument and intends in this addendum to outline our view of the minimum requirements with respect to physician training and expertise in relation to such proposed non-comprehensive hyperbaric facilities.

Our view is outlined in the full statement of October 1995 with respect to the technical, operator, attendant or other minimum requirements for the safe practice of Hyperbaric Medicine. Specifically, we maintain that any

compression of patients for therapeutic purposes must be at the prescription of a suitably trained and registered medical practitioner. This practitioner remains medically accountable for the selection of patients for therapy and any consequences of such therapy.

### Minimum requirements for medical practitioners prescribing hyperbaric therapy

1 Fully-registered as a Medical Practitioner by the appropriate Medical Registration Board.

2. Have successfully completed an approved introductory course in Hyperbaric Medicine.

The ANZHMG would consider appropriate the curriculum of an individual course which:

- Involved at least 30 hours of instruction.
- Involved formal assessment on completion.
- Involved some element of practical, 'chamber-side' instruction during patient treatment.
- Covered all of the following topics:
  - \* Physics, anatomy and physiology of compression
  - \* Oxygen and carbon dioxide toxicity
  - \* Hyperbaric chamber types
  - \* Breathing systems
  - \* Infection control
  - \* Mechanisms of action
  - \* Selection of patients for hyperbaric oxygen therapy
  - \* Assessment of patients for compression
  - \* Assessment of progress and end-point
  - \* Scientific basis for indications
  - \* Compression chamber safety and emergency procedures
  - \* Contraindications
  - \* Complications and management
  - \* Literature review and key papers
  - \* Record keeping and Quality Assurance.

### Minimum standards for limited hyperbaric facilities

The ANZHMG supports the operation of a "limited" hyperbaric facility to deliver safe and appropriate hyperbaric oxygen therapy (HBOT) under the following definition of such a facility:

A *limited hyperbaric medicine facility* means a designated area that:

a is equipped and staffed to provide hyperbaric oxygen therapy at no more than 2 ATA (2 bar or 101 kPa gauge

pressure) to non-attended patients, or no more than 2.5 ATA (2.5 bar or 151 kPa gauge pressure) to patients accompanied by an appropriately trained attendant, with compression in air and patient oxygen delivered by a built-in breathing system.

b is supported by:

- 1 Appropriately trained and qualified technical and medical staff as defined in the ANZHMG statement on the use of hyperbaric oxygen at sites other than public hospitals (Oct. 1995) and addenda. (Attendant staff may be required in a multi-place facility and will also be appropriately trained as defined in the statement.) Such staff will be responsible for the conduct of treatment and maintenance of the facility. A suitably qualified medical practitioner will be responsible for the prescription, review of therapeutic response and discontinuance of HBOT.
  - 2 A suitably qualified medical practitioner who is immediately available at all times during patient treatment and has demonstrated skills in resuscitation. Where resuscitation skills are provided by a separate immediately available practitioner, this second practitioner should have some familiarity with the concept, conduct and complications of HBOT.
- c has defined admission and discharge policies which exclude the treatment of patients who are critically ill, in need of emergency medical attention or likely to suffer complications during or due to therapy.
- d has appropriate emergency resuscitation equipment immediately available and adequately maintained.
- e has a defined relationship between the facility and an appropriate "comprehensive" facility for the provision of technical and medical support. In particular, there will be a demonstrated system for obtaining expert hyperbaric medical advice when required. Such advice should be obtainable both urgently and electively prior to treatment.

Michael Bennett  
Hon. Secretary, ANZHMG  
July 1996

### References

- 1 Bennett M. Australian and New Zealand Hyperbaric Medicine Group Statement on the use of hyperbaric oxygen therapy at sites other than public hospitals. *SPUMS J* 1995; 25(4): 206-208

## SPUMS NOTICES

### SOUTH PACIFIC UNDERWATER MEDICINE SOCIETY DIPLOMA OF DIVING AND HYPERBARIC MEDICINE.

#### Requirements for candidates

In order for the Diploma of Diving and Hyperbaric Medicine to be awarded by the Society, the candidate must comply with the following conditions:

- 1 The candidate must be a financial member of the Society.
- 2 The candidate must supply documentary evidence of satisfactory completion of examined courses in both Basic and Advanced Hyperbaric and Diving Medicine at an institution approved by the Board of Censors of the Society.
- 3 The candidate must have completed at least six months full time, or equivalent part time, training in an approved Hyperbaric Medicine Unit.
- 4 All candidates will be required to advise the Board of Censors of their intended candidacy and to discuss the proposed subject matter of their thesis.
- 5 Having received prior approval of the subject matter by the Board of Censors, the candidate must submit a thesis, treatise or paper, in a form suitable for publication, for consideration by the Board of Censors.

Candidates are advised that preference will be given to papers reporting original basic or clinical research work. All clinical research material must be accompanied by documentary evidence of approval by an appropriate Ethics Committee.

Case reports may be acceptable provided they are thoroughly documented, the subject is extensively researched and is then discussed in depth. Reports of a single case will be deemed insufficient.

Review articles may be acceptable only if the review is of the world literature, it is thoroughly analysed and discussed and the subject matter has not received a similar review in recent times.

6 All successful thesis material becomes the property of the Society to be published as it deems fit.

7 The Board of Censors reserves the right to modify any of these requirements from time to time.

### THE 1997 ANNUAL GENERAL MEETING OF SPUMS

will be held at 1200 on Saturday 19/4/97 at the Quality Resort Waitangi, Bay of Islands, New Zealand

The following motions to be moved at the Annual General Meeting have been received by the Secretary.

From the Committee

That Dr David Elliott be elected a Life Member.

That Rule 3 Life Members, (b) be altered by replacing the word *five* in the last sentence by the word *eight*.

The new sentence would read: *The number of life members shall at no time exceed eight nor shall more than one such member be elected in the one financial year.*

From Dr Jim Marwood

That Rule 8 Annual General Meeting, (e) be altered by removing the words *of which notice has been given*.

The new rule would read: *The annual general meeting may transact special business in accordance with these rules.*

That Rule 11 Order of business at general meetings, (a) be altered by adding a new sub-section (x) *Any other business.*

That rule 12 Notice of meetings, (b) be altered by replacing the second *the* by a *special meeting*.

The new rule would read: *No business other than that set out in the notice convening a special meeting shall be transacted at the meeting.*

### OBITUARY

John Noel Miller  
1938-1996

John Miller was a revered and a highly respected colleague. He was probably Australia's first internationally famous diving physician. He died on the 4th October 1996 at the age of 57 after a tragic but courageous battle with cancer. He left his wife, Kay, and children. He also left a painful void in my life.

John was younger and brighter than I. He graduated with an MB, BS from the University of Sydney in 1963. Right from the start he was equally interested in clinical medicine and research. His interests covered respiratory

physiology, cancer research and psychiatry. He received the Sydney University prize for his work in the Research and Treatment of Alcoholism.

In the three decades that followed I often sat with John, usually in some exotic locale, an alcoholic beverage or two on the table, and reminisced over his first major research establishment, the Royal Australian Navy School of Underwater Medicine. He had every reason to be proud of his project.

In 1965 the Royal Australian Navy School of Underwater Medicine was little more than a sparse library, with contributions being dependent on the charity of Rex Gray (the Officer-in-Charge) and the benevolence of the Medical Director General. When Geoff Bayliss took over the School he realised the need to legitimise its position as an authority in this field. This was achieved initially by developing an instructional role but in the long term its research capability was the area in which it became famous.

The research plan and facilities were almost entirely designed by John Miller. When I joined the School in 1967 it already had the nidus of a scientific unit. With minimal expenditure and the judicious selection of scientific equipment, it was ready to take off as a clinical research unit. That little research establishment was able to cope with a series of demands and challenges, the results of which put the School of Underwater Medicine on the international map.

And it was all designed by John. He formulated the plan, proposed the equipment and even recommended some of the earlier projects.

John moved from Sydney to Kings College Hospital Medical School in London, the Royal Naval Physiological Laboratories at Alverstoke and then the Virginia Mason Research Center in Seattle. It was during these appointments that John became known internationally for his contributions to diving medicine.

Partly because he still did not have an officially recognised specialty, and partly because of his continued interest in diving medicine, he moved to the Departments of Anesthesiology at Duke University and the University of North Carolina. He was responsible for the development of the Duke University flow chart which was for many years the worldwide standard for treatment of decompression sickness.

He then accepted a post as Professor and Chairman of the Department of Anesthesiology in Mobile at the University of Southern Alabama.

His administrative talents were well recognised. He was Chairman of the Program Committee of UHMS, and acted on the Constitution and By-Laws Committee, the

Publications Committee, and the Executive Committee. He was a medical consultant to four commercial diving companies and Medical Director of the Experimental Diving Program at the F G Hall Laboratory and for the Diver Alert Network (DAN).

He recently completed editing a text on Lung Function and Diving, which should be published later this year. He was completing the text immediately before his death.

One of the honours which John treasured was his invitation to be Guest Speaker at the SPUMS conference at Palau Tioman, in 1980. This was the final acknowledgment, from his Australian colleagues, of his international status.

John was a gregarious, fun-loving enthusiast in everything that he did, from building and flying his beloved biplane, *Skybolt*, to social and professional activities. In the field of diving medicine he will be remembered as one of the very few who could combine research and clinical acumen. To me he will be remembered as a dear friend.

Carl Edmonds

### **SPUMS ANNUAL SCIENTIFIC MEETING 1997 PROVISIONAL PROGRAM (AS AT 23/2/97)**

#### **Workshops on board Tiger IV (Departs 0700 and returns at 1730)**

#### **Sunday April 13th**

**Basic and Advanced Life Support** revision sessions  
CPR and intubation manikins, Computer Resusci-Annie  
(Various instructors)

**Oxygen First Aid equipment** including Komesaroff semi-closed circuit and NZIG LSP resuscitator.

(Drew Richardson, Jeff Bertsch, David Komesaroff)

**Aqua-Annie** (Michal Kluger and Bob Ramsay)

#### **Monday April 14th**

**Basic and Advanced Life Support** revision sessions  
(continued)

**Oxygen First Aid equipment** (continued)

**Aqua-Annie** (continued)

**Additional Basic First Aid principles**

(Drew Richardson, Bill Day, Jeff Bertsch)

#### **Poster presentations**

Marine envenomation Chris Acott

Diver identification devices David Davies

Fluid therapy Michal Kluger

Diving First Aid, does the diagnosis matter? Mike Davis

Portable chambers and transfer under pressure  
Des Gorman and David Youngblood  
Analgesia for diving accidents David Komesaroff

**Tuesday April 15th**

Oxygen therapy equipment and manikins still available.  
Diver Search and Rescue (Northland Emergency Services  
Trust representative, Mike Bennett, David Davies)  
Posters on display (these will also be on display  
for the rest of the week in the Conference Centre)

**Debate** Chairman Des Gorman  
“In-water oxygen recompression is a safe and proven  
procedure for use in remote areas”

For David Youngblood and Carl Edmonds  
Against Chris Acott and James Francis

**In the Conference Centre**

**Sunday April 13th**

1900

\*\*The biology of the Poor Knights Islands. Wade Doak

**Wednesday April 16th**

1600-2000

**Pathophysiology of Decompression Illness**

Chairman Mike Davis

Pulmonary barotrauma: a new look at mechanisms

James Francis (**Accident Rehabilitation and  
Compensation Corporation Professor**)

A layman’s guide to the vascular endothelium

Paul Langton

Mechanisms of cerebral injury in CAGE Des Gorman

Open chamber cardiac surgery: a clinical injury model of  
CAGE Simon Mitchell

Mechanisms of spinal cord injury in DCI James Francis

PFO and rapid onset/severe DCI: an update  
Richard Moon

**Thursday April 17th**

1600-2000

**Natural History of DCI** Chairman Mike Bennett

Interpretation of gas in diving autopsies Chris Lawrence

Why divers die: a pathologist’s view Rees Jones

**DCI in recreational divers**

UK experience James Francis

DAN USA experience Richard Moon

DES Australia experience Michal Kluger

NZ 1996 experience Simon Mitchell

**Treatment of DCI. Part 1** Chairman Tony Slark

Clinical evaluation of the DCI patient Richard Moon

A scoring system for DCI severity Simon Mitchell

The origin of the recompression treatment tables  
Chris Acott

**Friday April 18th**

0830-1630

**Treatment of DCI. Part 2** Chairman Chris Acott  
Recompression for DCI in recreational divers

Richard Moon

**Panel discussion**

“Is a consensus view on recompression procedures for  
DCI in recreational divers possible?”

Moon, Francis, Gorman and Mitchell

Adjuvant therapy for DCI Richard Moon

Pharmacology of lignocaine and NSAIDs: why might they  
have a role in DCI? Dave Cosh

The Slark Unit lignocaine trials: a progress report  
Simon Mitchell

NSAIDs in DCI: a multi-centre study progress report  
Mike Bennett

Critical incident stress debriefing Jeff Bertsch

Aftermath of recompression therapy: a case report  
Peter Chapman-Smith

**Lunch break**

**Other papers** Chairman Guy Williams

Dive profile of a harbour diver (Poster) Prof Nashimoto

Tympanic membrane rupture in scuba divers  
Noel Roydhouse

Diving and the lung Richard Moon

Immersion hypothermia in recreational diving  
James Francis

**Diving First Aid Workshop** Chairman Des Gorman

First Aid teaching for recreational divers: what and why.

PADI Drew Richardson

SSI Bill Day

DAN Australia John Lippmann

The inadequacy of current First Aid James Francis

The GP’s role in diving accident management  
Peter Chapman-Smith

Evacuation methods in diving accidents Mike Bennett

1830

\*\*The General Grant Expedition Bill Day

**Saturday April 19th**

0830-1200

**Diving First Aid Workshop** Chairman Des Gorman

Oxygen therapy equipment: a theoretical overview  
Mike Davis

Oxygen: how much is enough? Chris Acott

A proposed SPUMS protocol for First Aid Care of Diving  
Accidents Richard Moon

**Formulation of SPUMS Policy on First Aid**

Facilitator Des Gorman

1200

**SPUMS ANNUAL GENERAL MEETING 1997**

1730

Closing reception, entertainment and Maori Hangi.

\*\* These two lectures are presentations designed to  
be of interest to registrants and their families.