

off its rest and was damaged by flying debris later. It was, however, still largely intact. The acrylic was blackened on the inside and both the exhaust valves had opened and passed the soot containing gas as planned, but of course they could not cope with the exhalation of the huge amount of gas of an explosion.

Seechrist chambers

The Chief Executive of Seechrist, David Bush, spoke and stated that they had over 700 chambers around the world that had been in use for 20 years. He said that no patient had ever previously been injured.

Seechrist were originally told there had been no fire, therefore initially sent a letter out advising stopping all use of their chambers because of the possibility that the hull had failed. They immediately contacted the Federal Drug Authority (FDA), who later complimented the firm on its responsible and professional approach to the whole thing.

It was quickly established that the chamber had failed in a manner in which it should. Seechrist chambers are constructed in accordance with the requirements of PVHO (Pressure Vessel for Human Occupancy) Division of the ASME (American Society Mechanical Engineers) standards for a chamber building. This requires that it should fail in such a way that the hull of the chamber does not explode or disrupt.

Since this incident, many people have tightened their procedures and have found errors. One patient was trying to get in complete with cigarettes and a lighter! Some units, particularly in Japan, are now trying to use metal detectors such as the portable ones used at airports. They would pick up the iron filings in a package such as the "Kairo".

A few units have changed to compression with air, with oxygen breathing by mask or hood, but this demands meticulous attention to the mask or hood fit to control leakage and the oxygen percentage in the chamber. The Japan Hyperbaric Society, after its review, still recommends compressing all patients in oxygen in these chambers.

Seechrist pointed out that the very small number of other incidents that have occurred in their chambers have not resulted in patient injury and that each has been due to a different problem, none of which has been due to their equipment failing. There have been two or three abnormal events such as unexplained decompressions, though these were put down to inadvertent operator error when investigated.

This is the only major accident for this firm in 20 years with over 700 chambers in operation and with many millions of patient treatments.

There has never been a validated failure of a Seechrist chamber nor an injury resulting from a problem.

Conclusion

A full report will be put out shortly, probably in October. An abbreviated report will appear in the next edition of *Pressure*.

The meeting was given an extremely frank and very detailed verbal report. It illustrated, once again, that recompression of patients, within a hyperbaric facility, in a high oxygen concentration is not without risk. However, the Chief Executive Officer of Seechrist pointed out that any form of compression therapy runs the risk of decompression injury such as barotrauma, even though the risk is very small.

Dr Harry Ozer is Director of the Hyperbaric Medicine Unit at the Fremantle Hospital, PO Box 480, Fremantle, Western Australia 6160. Phone +61-9-431-2233. Fax +61-9-431-2819

A verbal report of this incident was presented at the Hyperbaric Technicians and Nurses Association (HTNA) Meeting in Hobart in August 1996.

MEDICAL CERTIFICATES AND NEW DIVING LEGISLATION IN QUEENSLAND

John Hodges

Key Words

Legal, medicals, medical standards, occupational diving.

Introduction

For the last six years, Queensland's workplace health and safety legislation for underwater diving at a workplace required compliance with *AS 2299 - Occupational Diving*. This is no longer the case with new legislation which came into effect on 2 July 1996. The new legislation, the *Workplace Health and Safety (Underwater Diving Work) Compliance Standard 1996*, has specific requirements about certificates of medical fitness to dive for people doing any underwater diving work.

Who has to hold a medical certificate?

Employers, self-employed people and workers who do any type of underwater diving work must hold a current "certificate of medical fitness to dive". This applies across the board to all types of diving work, not to members of the public doing recreational diving or other non-work activities. Examples of underwater diving work include underwater filming for a movie, fish collecting, scrubbing the hull of a ship and training recreational divers.

While the compliance standard is effective from 2 July 1996, people doing the following types of underwater diving work are not required to hold a current "certificate of medical fitness to dive" until 2 July 1997:-

- people who conduct recreational diving or training to go recreational diving (for example, dive instructors and dive masters who conduct these activities as part of their employment)
- people who take souvenir photographs, films or videos of people doing recreational diving (for example, this covers a person who takes underwater photos of people doing recreational diving and sells those photos to the people doing the diving).

It is the responsibility of the employer to make sure his or her worker holds a current certificate of medical fitness to dive. Employers and self-employed people must also hold a current certificate if they are going to do any underwater diving work.

What is a current certificate?

A current certificate is one that is less than 12 months old and has not expired, been revoked or superseded. People doing underwater diving work will need to have an annual medical examination to obtain a "current" certificate.

A "certificate of medical fitness to dive" is a certificate that:

- a is issued by a doctor who has satisfactorily completed training in diving medicine approved by the Board of Censors of the South Pacific Underwater Medicine Society; and
- b contains the following information:
 - the name of the person who holds the certificate;
 - the date the certificate was issued;
 - shows that the person is medically fit to dive according to the fitness criteria in AS 2299-1992 *Occupational Diving*, appendix A, paragraph A3;
 - any limitations on diving imposed by the doctor.

If the person is under the age of 18, the doctor may issue a certificate despite the minimum age of 18 for a diver being stated in AS 2299 - 1992, appendix A, paragraph A3. However, the certificate must show either:

- that apart from being under 18, the person is medically fit to dive in accordance with AS 2299 - 1992, appendix A, paragraph A3 and no limitations on diving are needed even though the person is under 18; or
- that apart from the limitations on diving stated on the certificate, the person is medically fit to dive in accordance with AS 2299 -1992, appendix A, paragraph A3. The certificate must show which, if any, of the limitations are imposed because the person is under 18.

While the AS 2299-1992 fitness criteria specify a minimum age of 18 for divers, the compliance standard allows people under the age of 18 to hold a certificate of medical fitness to dive as there are circumstances where a person under the age of 18 may wish to do underwater diving work. For example, a 16 year old actor may be required to do underwater diving scenes for a film and therefore would need to hold a certificate of medical fitness to dive. Whether a person under 18 is declared fit to dive or not is a matter for the doctor's discretion. The type of diving work the person intends to do may be a relevant factor in assessing whether the person is fit to dive.

As employers, self-employed people and workers doing underwater diving work in Queensland must hold a certificate that shows the above information, it would be most useful if doctors issuing certificates to these people make sure all the relevant information is shown on the certificate.

Training in diving medicine

The compliance standard requires the certificate to be issued by a doctor who has satisfactorily completed training in diving medicine approved by the Board of Censors of the South Pacific Underwater Medicine Society (SPUMS). This is more specific than previous legislation which did not make an explicit statement about the experience in underwater medicine a doctor required to issue a diving medical certificate.

At present, doctors who have satisfactorily completed any of the following training may issue a certificate of medical fitness to dive:

Royal Adelaide Hospital Basic Course in Diving Medicine and the Advanced Course in Diving and Hyperbaric Medicine

Royal Australian Navy Basic Course, Advanced Course or the Medical Officers Underwater Medicine Course

Diving Medical Centre Medical Examiner Course
 Fremantle Hospital Medical Assessment of Divers Course
 Royal New Zealand Navy Basic Course
 Christchurch Hospital Basic Course
 Institute of Naval Medicine (UK) Medical Examiner Course
 United States Navy Diving Medical Officer Course

If the Board of Censors of SPUMS approves any new training in diving medicine, these courses will also be covered by the compliance standard.

Because SPUMS recommends courses of 10 days duration or more as the most appropriate training for carrying out AS 2299-1992 medical examinations, it needs to be noted that the compliance standard permits a doctor with any training in underwater medicine approved by the Board of Censors to issue certificates of medical fitness to dive, and that not all approved courses meet the recommended training period of 10 days.

Brochures about diving medicals and construction diving work are available from the Division of Workplace Health and Safety.

Copies of workplace health and safety legislation can be ordered through the Division or from GOPRINT (telephone 07 3246 3399 or facsimile 07 3246 3534). The Division of Workplace Health and Safety is now on-line. Workplace health and safety legislation can be accessed on the Division's homepage via the Internet. Home page address <http://www.gil.com.au/va/whs-home/whs/htm> .

J E Hodges is Executive Director, Division of Workplace Health and Safety, Department of Training and Industrial Relations, Queensland. Enquiries about the legislation should be directed to Carmen Langan, Research Officer, Planning and Program Development Branch, Division of Workplace Health and Safety, Department of Training and Industrial Relations, GPO Box 69, Brisbane, Queensland 4001, Australia. Phone 07-3247-5671. Fax 07-3247-4519.

SPUMS NOTICES

CORRECTIONS TO SPUMS JOURNAL SEPTEMBER 1996

A REVIEW OF THE SHARPENED ROMBERG TEST IN DIVING MEDICINE

Ben Fitzgerald
 SPUMS J 1996; 26 (3): 142-146

On page 144 Table 4 was missing some results. The corrected Table 4 is printed below.

TABLE 4

SHARPENED ROMBERG TEST SCORE IN DIVING PATIENTS WITH AN ABNORMAL RESULT (LESS THAN 30 SECONDS) BEFORE HYPERBARIC TREATMENT (HBO) AND AT DISCHARGE.

	Number	Pre-HBO Best [mean]	Pre-HBO Best [S D]	Discharge Best [mean]	Discharge Best [S D]
Total	17	5.94	7.93	50.88	18.01
20-40 years	9	8.11	9.31	57.56	7.33
Over 40 years	8	3.50	5.66	43.38	23.62

On page 145, right hand column, paragraph 2, there is mention of Appendix B. This is an editing error which occurred when Appendices A and B were included in the text.

Since publication of this paper Dr Fitzgerald has moved to 5/47 Bramston Terrace, Herston, Queensland 4006, Australia.

NITROX

David Elliott

SPUMS J 1996; 26 (3): 194-198

On page 198 Reference 5 is incorrect. It should read

- 5 Hamilton RW. The scope of non-conventional recreational diving. SPUMS J 1996; 26 (3): 191-194

BUOYANCY

SPUMS J 1996; 26 (3): 208-209

This paper was written by Keith Waugh, whose name was most unfortunately omitted.

Key Words

Corrections.

ACKNOWLEDGMENTS

The Editor wishes to acknowledge and thank those who have helped keep the Journal on the "straight and narrow" over the last few years.

Editorial Assistants (Proof readers)

Drs John Couper-Smartt and David Davies.

Without their help the Journal would have contained many more typographical and English usage errors than it has.

Peer Reviewers

Drs David Davies, Mike Davis, Carl Edmonds, Bill Hurst, Douglas Walker, John Williamson, Rick Wolfe and Mr Justice Tom Wodak.

MINUTES OF THE SPUMS EXECUTIVE TELECONFERENCE

held on Sunday 28 July 1996

Opened at 1000 Eastern Standard Time

Present

Drs G Williams (President), C Meehan (Secretary), R Walker (Treasurer), J Knight (Editor), D Davies (Education Officer), M Davis (NZ Chairperson), V Haller and M Kluger (Committee members).

Apologies

Drs C Acott (Committee member) and D Gorman (Past-President).

1 Minutes of the previous meeting (21/4/96)

Read and accepted as a true record after minor changes. Proposed J Knight, seconded R Walker.

2 Matters arising from the minutes

- 2.1 North American Chapter update. Dr Walker to investigate.
- 2.2 Maldives conference expenses registration account update. There was one registration fee still outstanding. It was suggested that one account only remain open with the remnants of the conference monies from Fiji and the Maldives. It was proposed that SPUMS should consider purchasing a projector for direct computer presentation in the future.
- 2.3 New Zealand 1997 ASM update. All going well at this stage. As this is an onshore conference, some commercial sponsorship is to be sought. Dr Davis will do this in New Zealand and Dr Williams in Australia.
- 2.4 Indemnity policy update. This is still being looked into by Dr Williams.
- 2.5 Reprinting of the schedules for SPUMS Diving Medical and Statements of Purposes and Rules. Secretary to make sure that the amendments to the AS 4005.1 are incorporated with regard to chronic illness. Progress is being made with this.
- 2.6 Role of convenor to be defined and guidelines written. These should now be available from Dr Acott.
- 2.7 Ex-Presidents Committee. The Secretary and Treasurer will need a list of the members of this committee. The committee needs to be notified of the face to face meeting which will be held in Melbourne in October. Dr Gorman will co-ordinate with the members of this committee and arrange a meeting at this time if he so wishes.
- 2.8 Subscription Renewal Notice to be redesigned. This is to be finalised at the next committee meeting in Melbourne.
- 2.9 Diving Doctors List update. The Diving Doctors List is in the process of being formatted by Steve Goble at the Hyperbaric Medicine Unit, Royal Adelaide Hospital. There will be an asterisk beside all doctors who have completed a course of 10 or more days duration. At present three courses fulfil this criterion. They are the Royal Adelaide Hospital Basic plus Advanced

Course, the Royal Australian Navy Medical Officers Underwater Medicine Course and the United States Navy Diving Medical Officers Course. The next list should be produced in December. A new form needs to be designed for next year which allows for recognition of these courses.

- 2.10 Update on the Index of the SPUMS Journal being produced on a disk. There has been a problem getting this into Access. This is being looked into.

3 Treasurer's report

Dr Walker presented an interim report.

4 Correspondence

- 4.1 Letter from Dr Brian Hills. Dr Knight has written to Dr Hills with reference to the 1997 ASM in New Zealand.
- 4.2 Letter from PADI Solicitors re: article in the Brisbane Sunday Mail, 26 May 1996. Acknowledgment of receipt of this letter has been sent.
- 4.3 Letter from Dr Finlay-Jones, 26/7/96. Letter has been acknowledged .

5 Other Business

- 5.1 Next committee meeting will be in Melbourne on the 19 October. As Dr Gorman will be in Adelaide from 21 Oct to 1 Nov 96, it was suggested that he may stop in Melbourne on route. At this time, Melbourne is an easier and cheaper destination for most members. Dr Gorman will arrange for the Ex-Presidents Committee to meet at the same time if he so wishes.
- 5.2 Future ASM venues. It was suggested that the 1998 ASM be held in Palau and that the 1999 ASM be held in Langang. It was proposed that the convenor and the co-convenor be responsible for deciding which travel provider to use.
- 5.3 Oxygen equipment for dive boats at ASM. There was some discussion. One suggestion was that this be hired as needed, as some venues would have adequate equipment available. This is to be further discussed in Melbourne.
- 5.4 Suggested change in packaging of the journal. To be further discussed in Melbourne.

- 5.5 Upgrade of computer for the Editor was agreed. He is to liaise with the Treasurer on this.

- 5.6 Scanner for Secretary was approved. The Treasurer requested that every committee member bring a list of all the SPUMS equipment and furnishings held to the next meeting so an inventory can be maintained.

- 5.7 Draft of policy statement on technical diving. To be circulated.

- 5.8 SPUMS European representative. It was suggested that SPUMS should have an European representative. Some discussion was entered into and this will be further discussed in Melbourne.

- 5.9 SPUMS e-mail, home page and the web. SPUMS Secretary's home page can be read on :<http://www.ozemail.com.au/~cmeehan/index.html>. Further discussion is expected re SPUMS and the internet.

- 5.10 Request for temporary financial assistance for the Diving Emergency Service. A letter was read from Dr Acott with regard to this. After some discussion, this matter was left for fuller attention at the Melbourne meeting. Moved that funding of the costs of running DES for the next three months be made by SPUMS as an interim measure. Proposed Dr Williams, seconded Dr Knight. Carried.

- 5.11 Workplace Health and Safety, Queensland requested SPUMS' opinion of terminology "exercise ECG" as used in AS 2299. This was unanimously agreed to mean a full stress ECG.

- 5.12 Medis equipment disinfectant. Dr Knight stated that he had received a letter suggesting an editorial in support of their product. He stated that even if they had provided some evidence of effectiveness of the product, which they did not, Journal policy was completely opposed to such departures from scientific standards. Nothing further has been heard from the company.

Closed at 1200.

24th ANNUAL SCIENTIFIC MEETING AND ANNUAL GENERAL MEETING

12th to 20th APRIL 1997

at the

QUALITY RESORT WAITANGI,
BAY OF ISLANDS, NORTHLAND,
NEW ZEALAND

Theme

PATHOPHYSIOLOGY AND TREATMENT OF DECOMPRESSION ILLNESS

SPUMS Workshop

FIRST AID MANAGEMENT OF DIVING ACCIDENTS

Guest Speakers

Professor Richard Moon, Duke University, Durham, North Carolina, U.S.A., Immediate Past President, Undersea and Hyperbaric Medical Society.

Dr James Francis, until recently Director, Naval Medical Institute, Alverstoke, United Kingdom.

Richard and James are acknowledged as among the world's leaders in decompression illness. Both were major contributors to the 4th edition of *The Physiology and Medicine of Diving* edited by Peter Bennett and David Elliott. Richard Moon is also the Medical Director of DAN (Diver Alert Network) International. This meeting gives SPUMS members an opportunity to hear two outstanding international speakers.

Conference Convenors

Dr Michael Davis and Associate Professor Des Gorman

For further information contact:

Dr Michael Davis

Hyperbaric Medicine Unit, Christchurch Hospital

Private Bag 4710, Christchurch, New Zealand.

Fax +64 3 364 0187. e-mail at hbu@smtpgate.chhlth.govt.nz

Diving Workshops

The diving at The Poor Knights Islands is considered to be amongst the finest temperate water diving in the world. Water temperatures will be about 20°C.

Delegates will travel to the Poor Knights Islands on 3 days on board a large high-speed catamaran, Tiger IV, which can carry around 250 passengers. During the journeys small group workshops, equipment demonstrations and hands-on training sessions related to the workshop theme of the First Aid Management of Diving Accidents will be conducted.

Conference Week Activities

This is a beautiful maritime park region of New Zealand, which is also an area of considerable historical importance. For the non-diver, there is a wealth of land and water-based activities with something for everyone.

The Quality Resort Waitangi is an ideal family venue. A diverse and exciting children's programme has already been developed to suit all ages, as well as excellent baby care facilities.

Bring the whole family for a wonderful New Zealand Holiday!!

Pre- and Post-Conference Tours

Two contrasting and outstanding diving venues will be offered. The Three Kings Islands, situated some 30 miles North of New Zealand, and Fiordland, on the West Coast of South Island.

In addition, self skippered sailing charters at very competitive rates have been reserved and there is an immense range of other holiday opportunities in New Zealand that Fullers Northland's travel division will be able to advise delegates on.

For all travel and New Zealand domestic enquiries, please contact:

Fullers Northland (attention Tania Townsend)

PO Box 145, Paihia, Bay of Islands, New Zealand.

Phone +64 9 402 8802 Fax +64 9 402 7831

**PLEASE HELP US TO MAKE THIS A GREAT MEETING BY RETURNING
THE REGISTRATION FORM ENCLOSED WITH THE LAST JOURNAL.**

**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.*

**HYPERBARIC MEDICINE UNIT
FREMANTLE HOSPITAL**

**MEDICAL ASSESSMENT OF FITNESS TO DIVE
COURSE**

March 14th-16th 1997

**COMMERCIAL DIVE SUPERVISORS ADVANCED
FIRST AID COURSE**

73February 3rd-7th 1997

For further details contact

Dr Harry Oxer

Director Hyperbaric Medicine Unit
Fremantle Hospital

Tel (09)-431-2233

Fax (09)-431-2918