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Australian Military Medicine Association

Statement of Objectives

The Australian Military Medicine Association is an independent, professional scientific organisation of health professionals with the objectives of:

- promoting the study of military medicine
- bringing together those with an interest in military medicine
- disseminating knowledge of military medicine
- publishing and distributing a journal in military medicine
- promoting research in military medicine

Membership of the Association is open to doctors, dentists, nurses, pharmacists, paramedics and anyone with a professional interest in any of the disciplines of military medicine.

The Association is totally independent of the Australian Defence Force.

President's Message

Nader Abou-Seif

Early this year, the Australian medical community was saddened to hear of the passing of Dr. John Lane after a short illness. John was widely considered to be the founding father of aviation medicine in this country and continued to be active in research until his death. He was also one of the three original Honorary Life Members of the Australian Military Medicine Association (with Sir Edward Dunlop and Sandy Ferguson). His role in the promotion of Aviation Medicine and the development of an Institute of Aviation Medicine in Australia has been a major contribution in the establishment of this speciality in the Australian Defence Force.

As we approach the end of the 20th Century, it is very easy to take for granted the current "State of the Art" and to forget the debt we owe to those in both the recent and not so recent past. Military Medicine is dynamic and we, in whichever discipline we have chosen to practice, are part of a continuing line of practitioners, whose care for those we serve, is both an inheritance from our predecessors and a legacy to those who follow.

Future practitioners of Military Medicine rely on our efforts, standards and commitment to form the basis of theirs. I hope that together we may leave them a legacy as great as that left to us.

AMMA can provide the forum to bring together the knowledge and efforts we bring to our day to day activities; to allow us to share in our experiences and fellowship and to create and re-inforce both for ourselves and our successors a great and growing tradition.

The AMMA Council is currently developing initiatives to encourage the greater contribution and expansion of our association in the development of this tradition. Once again, I encourage you all to be active in your association, to promote and participate in its activities and to help us grow and develop into the future. I hope that future generations of military medicine practitioners may look back at our efforts, as we look back at John's, and see inspiration to their future.

A full obituary of John Lane is located elsewhere in this issue and I encourage you all to remember him and his contribution. Writing of John also reminds me to encourage you to seek out a book to be released for ANZAC Day called "Ordinary Heroes" by Barry Dickens, which includes a chapter on Vivien Bulwinkel, one of AMMA's other Life Members. Her inspirational presentation at the 3rd National Meeting in Melbourne in 1994 is still quoted by many as one of the best Keynote Addresses heard at an AMMA Conference.

LEST WE FORGET.

Editorial

Is the Defence Health Service Y2K compliant?

Russ Schedlich

One of these days, I must get a guest editorial in ...

As we move towards the next millennium (can I get some controversial letters on when the millennium starts???), it is perhaps pertinent to ask the question: "Is the Defence Health Service Y2K compliant?"

Of course, this is not a question that relates to computers, but rather a challenge to the military medical community to look at the Defence Health Service and honestly assess

whether it is well prepared for the 21st century.

Continuing the computer analogy, we must examine the hardware – the facilities, materiel, and people – and the software – the policies, standards, and procedures.

Hardware

As the 19th century closes, we can look to an ADF that has a variety of high quality health facilities, both deployable and non-

deployable. There are Field Hospitals, Air Transportable Hospitals, and smaller sub-units of these. There will soon be two Primary Casualty Reception Ships in service that will complete the ADF's deployable health capability in each of the operational environments.

Are these the right types of facilities? Are there the right numbers to meet our health support commitments? The ADF has recently completed a study – JP2060 – that sought to answer these questions. From this study, it would be hoped that further developments would follow that enhance these facilities.

In the non-deployable area, the ADF has a wide variety of fixed health centres. These are at the centre of a wide-ranging review as to how best to deliver health care in the support area, with the principles of commercialisation paramount. There are challenges here, not the least of which is to ensure that the service provided meets the needs of the individual Services.

In the area of materiel, it is to the credit of the ADF that, by and large, the health services have access to the latest types and the broadest range of medical and dental equipment and other items. Apart from obvious cost constraints, the only real issue that modifies giving service providers what they want is the need to maintain as much commonality as possible between the three Services, and between non-deployable and deployable facilities. In this area, the Materiel section of the Defence Health Service has been singularly successful.

Perhaps the most worrying side of the "hardware" aspect of Defence health capability is the people. While the people we currently have in the Defence Health Services are of a high calibre, there are shortages in all Services in all areas. How we address these shortfalls in a way that results in a sustainable improvement is a challenge of great complexity. Fundamentally, it is a challenge at which the ADF must succeed, or its greatest health capability shortfall will be its personnel.

Software

All the hardware in the world is of no use unless the software is right. The policies, standards and procedures that are employed to guide the way health care is delivered.

Apology

The Editor wishes to apologise to AMMA's members for the delay in producing this issue of the journal. Unfortunately, the dual pressures of work and family have conspired to leave little clear-headed time to set aside for the task of putting together articles, proof-reading etc. You have my assurance that the next issue – August – will be published before the end of that month.

The Defence Reform Programme mandated the need for integration of the way the three Health Services operate. On the surface, this is a laudable aim. However, the feasibility of each individual proposal for integration or standardisation must be assessed. If this concludes standardisation can proceed, then it must be managed effectively.

At the strategic level, it is fair to argue that policy can largely be standardised. This is the guidance as to what the Defence Health Services do, and there is a very strong case that this policy should be the same across the three Services. The challenge here is to ensure that the policies meet the needs of each of the Services, and where a new policy results in change, this is properly implemented.

Standards are a little more complex. Some standards can readily be made common – particularly those relating to standards of care in non-deployable facilities, and it is of note that the Joint Health Support Agency has gone a long way towards achieving commonality across the three Services.

Other standards, and especially those that apply in the operational environments, need to account for the many unique aspects of those environments. Such standards include clinical standards, and also standards of health care. In the latter instance, account must be taken of the constraints imposed by the operational environment, and the inability to necessarily provide a health care service that meets all civilian standards of practice.

Finally, procedures. Again, it is fair to argue that in the support area procedures can be largely standardised. But in the operational arena, there are differences that must be accounted for. Particular differences relate again to operational and facility constraints, and also to the number and training of health personnel available.

Audit

So, what is your assessment? How is the Defence Health Service travelling? Is it in good shape? These are the questions we must ask ourselves, and the challenge is, having determined the answers, assuring the achievement of solutions that will keep our Defence Health Services viable and vibrant.

Is the Defence Health Service Y2K compliant?

Articles

Health threats to Navy personnel since the Vietnam War^{1,2}

M.J. Flynn³

Mr Chairman.

As the last Director General of Naval Health Services and now a member of the RANR (a component of the 'part-time force' of the Navy and the ADF), I welcome this opportunity to address you today.

In particular, I applaud the stated aims of this conference, which are to enhance knowledge about service life in the context of applying evidence-based medicine to assist the assessment of claims submitted by Veterans for benefits, and to most efficiently direct resources to future research.

The allotted time allows me only to skim the surface of this important topic. In doing so, I intend to present data to support my conclusions that:

- there is a very large repository of health related information available in each of the Services, (particularly the Navy), the utility of which is devalued by the lack of resources that would allow continuing structured analysis;
- Navy has been well served by its Operational Health Support and its Occupational Health & Safety policies developed over the years as evinced by low morbidity and mortality figures despite frequently operating in highly dangerous environments; and
- vigilance is needed to ensure that this state of affairs is maintained for the Fleet of the 21st century.

I propose to give firstly an overview of the range of data that is available for analysis, then some results that have been able to be readily accessed, and finally an insight into some of the problems faced by our men and women at sea as the RAN enters the 21st century.

Naval health records in peace and war

All three Services currently maintain extensive health records of both permanent and Reserve force members. In the case of the permanent force, these records are held in duplicate although this situation is currently under active review.¹

In the Navy, additional medical documentation has been maintained in the form of the Ship's Medical Journal or Medical Log. These medical journals have been maintained in both war and peace since the commissioning of the first fleet in 1911. In keeping with Naval tradition, shore establishments are run as "ships", and the naval sick-quarters and hospitals have also maintained their own medical journals and medical logs. Copies of all of these are held by the Naval Records section of the Office of Surgeon General, or in archives in Canberra.

For those of you who have the time, I commend to you the journal of one of my predecessors, Fleet Surgeon Darby, the senior medical officer of *HMAS Sydney I*. This journal is maintained in the archives of this building.

In his commissioning voyage from Scotland via Cape Town, Darby documents in considerable detail the treatment of venereal disease and Phthisis, and the clinical courses of 'toxic pneumonia' and acute onset diabetes mellitus.² In the absence of antibiotics and insulin, burial at sea was the outcome of these latter two cases.

Later in 1915, his account of the injuries and subsequent management of the surviving RAN and German wounded in the action with *SMS Emden* off Cocos Island makes compelling reading.

¹ Flynn MJ. Health threats to Navy personnel since the Vietnam War. *Aust Mil Med* 1999; 8(1):3-8

² Presentation to Combined Department of Veterans Affairs (DVA)/Repatriation Medical Authority (RMA) Australian War Memorial Canberra 10 November 1998, and reprinted with their kind permission.

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This of course reminds me that the period chosen for today's discussion has largely excluded wartime operations with the possible exceptions of the Persian Gulf and Somalia. To state the obvious, the dangers posed by actual combat operations will generally be much greater than in training and in peacekeeping deployments. That is not to say that these latter type of operations are not challenging, and indeed Colonel Peter Warfe has provided a good account of the complexities of such operations as a result of his experience in Rwanda.³

It is also fitting to remember that not all casualties occur as the result of enemy action.

The USAF F4 Sparrow missile attack on *HMAS Hobart* (DDG 38) in the Gulf of Tonkin in 1968 that resulted in two RAN fatalities and 8 to 10 injuries demonstrates how the fog of war can result in losses through 'friendly fire'. There have of course been many other examples of this including those sustained by our allies in Operation Desert Storm.

However the brief today is to cover health threats to Navy personnel since the Vietnam War.

Health of the Navy 1998

Notwithstanding my earlier comments about the mass of data that is available for analysis and research, relatively few studies have been published.^{4,5} This is not through lack of interest; rather, manning constraints for at least the (almost) thirty years that I was in the Navy, have militated against such studies. There is no epidemiologist in the current Defence Health Service organisation to undertake systematic analysis, and most work that is undertaken is responsive rather than proactive in nature.

For the five years from 1987 to 1991, the Navy MEDREX computer based system coded every consultation and medical classification board using the then ICD classification system. However the requirement to input data was manpower-intensive and it was downgraded for this reason. During these five years, "Health of the Navy" statistics were produced on a six-monthly basis, and gave some broad indication of the state of medical readiness of the personnel in the Navy, and also some crude morbidity data. In reality, it was infrequently accessed, and in hindsight, was under-utilised and under-valued.

The passage of the Occupational Health and Safety (Commonwealth Employment) Act in 1991 has meant that from 1993 onwards, the ADF has captured statistics regarding all

deaths both work-related and non work-related, and most of the work-related illnesses and injuries. Utilisation of this data will undoubtedly have an impact on ADF operations in the future as the true costs are identified, and responsibility for payment passed back to the operational commanders.

The statistics that I present today therefore are confined to basic mortality, injury and invalidity data, relating mostly to this decade.

Mortality

In the four-year period 1994 - 97, the Directorate of Defence Occupational Health and Safety recorded 22 deaths in serving RAN personnel.⁶ Of these 22, if travel related accidents are excluded, only two were attributed to service related activities.

The first case was that of the Naval Pilot killed in the helicopter winch training accident at *HMAS Albatross* just prior to Christmas in 1995.

The second death, which is less clearly work related, involved that of a 41-year-old senior sailor at *HMAS Stirling* from secondaries from a malignant melanoma. When MEDREX maintained its registry for neoplastic disease, skin cancers, including melanoma, were the most frequently encountered forms of cancer. Protection for all ADF personnel from ultraviolet radiation in sunlight is now dictated by DI(G) PERS 16-10 (1996). However it would be appropriate to acknowledge the early initiatives in the field of skin cancer prevention by a Naval Policeman in the late 1980s who prevailed upon the then Chief of Naval Personnel to introduce the broad brimmed hat now worn by all ranks.⁷ I note incidentally from recent correspondence to 'The Army', that the application of DI(G) PERS 16-10 still leaves some room for improvement.⁸

Of the other 20 deaths, nine related to motor vehicle accidents, one senior officer died in a light aircraft crash, five were due to suicide and the other five to a variety of natural causes.

Suicide

The question of the relationship between service life and suicide is one that is difficult to be dogmatic about. ADF data confirms that the incidence of suicide is less than that of the general Australian community.⁹ A history of prior psychiatric illness and unemployment are known risk factors for suicide; risk factors that should not be a problem for the serviceman (and they are nearly all males).

Thus the possibility that the stresses of modern service life would constitute a contributory factor in some cases of suicide cannot be discounted.

Service related mortality 1972 - 1998

The tragedy on board *HMAS Westralia* in May 1998 reminds us once again how much fire at sea is feared and respected by Naval personnel. Three sailors and one female midshipman were killed in this blaze and a number of other personnel sustained non life-threatening burns.

Other deaths at sea since 1972 are listed at Table 1.

Year	Unit	Incident	No.
1972	CDT	Dive training	1
1975	<i>HMAS Arrow</i>	Cyclone Tracy - Darwin Harbour	2
1976	CDT	Dive training accident	1
1981	<i>HMAS Onslow</i>	Toxic gas (Diesel engine run-on)	1
1983	CDT	Air Mix Dive	1
1984	<i>HMAS Tobruk</i>	Toxic gas (sewerage) (Naval Cadet)	1
1985	<i>HMAS Stalwart</i>	Toxic gas - 60 + casualties	3
1987	<i>HMAS Otama</i>	Man overboard	2
1992	<i>HMAS Success</i>	Fall down lift well	1

Table 1. Deaths at Sea 1972 - 1997

There have also been a number of near misses including another toxic gas incident on board *HMAS Otama* (1982) and two episodes where six sailors have been swept overboard from Destroyer Escorts (*Torrens* and *Swan*) during refuelling at sea (RAS) operations in rough weather. Fortunately, all were rescued although a number sustained physical and psychological trauma.

Mortality in the Fleet Air Arm

Considering the complexity of naval aviation operations, it is testimony to the skills of naval aviators (and to the engineering excellence of the Martin Baker and Douglas Escapac ejection seats) that there have been only five aircrew who have been killed in naval aircraft operations since 1970.¹⁰

One of these was the pilot killed in the winch training accident in 1995. Two were killed in Skyhawk crashes and two aircrewmen (including a RAAF medical assistant) died when their Wessex ditched in Bass Strait

in 1983 whilst undertaking Oil Rig Protection operations.

Once again, there have been a number of 'near misses' such as the loss of a Sea King which disintegrated around the two pilots on impact with the water during a night approach to *HMAS Melbourne*, and the near loss of a Sea Hawk from *HMAS Darwin* during work-up for the Persian Gulf (Operation Damask) in 1991. This aircraft took off from the flight deck at night still attached to the RAST recovery cable. Although the system is fitted with a weak link that is designed to part at 6,000 lbs of tension, this failed and the cable parted instead at the drum. Fifty feet of cable arced through the rotor disc damaging all main rotor blades and narrowly missed the tail rotor. The crew were unaware of the damage to their aircraft until they landed back on deck.

Service accident related mortality 1972 - 1998

A total of 23 personnel have therefore died in the course of their naval duties from accidents during this 27 year period. Whilst any accidental death is one death too many, for those familiar with the environment and intensity of operations in the Fleet, one could say it reflects credit on the standards of training and levels of safety consciousness extant that there have not been more.

This data does not include personnel killed in motor vehicle accidents. Analysis of data in 1997 showed that for the 10 year period from 1986 - 95, the crude death rate from motor vehicle accidents was 24.3 per 100,000 per year compared with Australian community rates of 18.6 in 1985 reducing to 11.2 in 1995.¹¹ The author postulated a number of reasons why this rate should be greater for the Navy including the percentage of RAN personnel in the high risk age group, ready access to cars, and a proclivity to drive long distances on leave and on posting.

Invalidity from the RAN

The second set of statistics that have some validity are those relating to personnel being invalidated or separated from the (permanent) Service on medical grounds.

In the six year period from 1991 to '96, at total of 316 personnel were discharged on medical grounds from the RAN. A further 150 have been discharged in the 18 months to June 1998.

1991	1992	1993	1994	1995	1996	1997	Total
26	52	46	42	67	83	(47)	316

Table 2. *Personnel Invalidated from the RAN 1991 – 1996.*

** Figures for 1997 are from January to June*

The latest figures available are for the financial year 1997/98 when a total of 103 personnel were discharged. Given that the number of personnel in the RAN has been gradually reducing, the trend towards increasing separation via invalidity is notable.

In this most recent twelve month period, 74 males and 29 females were invalidated. This proportion of females (28%) contrasts with the 15.3% of females in the permanent Navy.¹² Personnel were predominantly from junior ranks with an average age of 26.8 years and average length of service of 6.7 years. Only one of the discharges in the female group was related to a complication of pregnancy, and none were due to a gender specific (gynaecological) cause.

The commonest cause of invalidity was musculoskeletal conditions with lumbar spinal problems predominating.¹³ The second most common cause was for psychiatric reasons.

Changing criteria for invalidity

Particularly since the Defence Reform Program has focused attention on personnel maintaining readiness for deployment, the criteria for invalidity have changed. There will necessarily be differences between the Services because of their different operating environments. A soldier is unlikely to be discharged from the Army for sea-sickness, although with the new emphasis on amphibious operations, that may not be true in the future.

Whilst every effort is made to avoid the unnecessary loss of highly skilled personnel, there is now less flexibility with postings to retain those who are unfit for sea. Because of the variations in the sea-shore ratio between ranks, invalidity is more likely to be the outcome of permanent disability for those who are junior sailors and officers. The discharge and invalidity process is thus a dynamic one. It is being continually refined, and emphasis is now being given to ensuring that the transition to civilian life is as smooth as possible. Early liaison with the Department of Veterans Affairs where an entitlement exists, is an important part of this process.

I think that it is fair to say that service health professionals incompletely understand the complexities of the disability, invalidity and compensation schemes.

As far as assessment of cause for the reason for the invalidity (service or non-service related), and importantly for the degree of disability (which determines the type of invalidity benefit), presiding medical officers make recommendations based upon best available guidelines, but the actual decision of course rests with the DFRDB and MSBS boards. At present, these authorities provide no feedback to the final medical board medical officers. There would be merit in providing such information in order that service medical officers are able to make informed recommendations that are in the best interest of the individual and the authorities.

Injury and serious injury in the RAN

In the same four year period from 1994-97, a total of 1,040 'serious injuries' were reported to the Occupational Health & Safety Directorate. Superficial perusal of this data indicates that the vast majority of these were due to sporting injuries, and also would not really be classified as serious. The current version of serious personal injury (SPI) includes all those incidents where a doctor is consulted. As this occurs as a matter of course in the military, it has the potential for over-classification of the severity of the injury, and steps are underway to make the classification more meaningful.

Compensation premiums

One statistic that should give some indication of adverse health consequences of service life is the costs in compensation. Unfortunately there is no agreed way in determining costs due to compensable illness and injury. It is however very likely that these costs:

- will be substantial; and
- do not currently have the required visibility at the commander level as they are either 'below the line' costs or transferred to other agencies such as DVA.

The ANAO report of 1997 estimated the annual cost of ADF injury and illnesses to be somewhere between \$210m and \$840m.¹⁴ This rather broad range included direct costs of \$130m (pre-discharge costs \$60m and post-discharge costs \$70m), and indirect costs of between \$80m and \$710m.

Given that these figures are not included in the overall estimate of ADF health care (\$400m - \$600m), it is not surprising that the

health services have come under close scrutiny in a number of areas following release of the report.

The Directorate of Occupational Health and Safety is able to provide some data relating to the costs of compensation.¹⁵

The outstanding liability for Defence was estimated by the Australian Government Actuary to be \$727.5m as at 30 June 1997. This figure attempts to take into account claims for injuries that have been sustained but have not yet been submitted. This does not include the costs relating to lost productivity, medical and rehabilitation costs provided in-service.

Of the three Services, on a per-capita cost, Army generates the most payments followed by Navy and then the Air Force.

Because of changing legislation and claims patterns, it is difficult to make comparisons from year to year.

It is of interest that in the case of the toxic gassing on board *HMAS Stalwart* in 1985, 35 of the 50-plus casualties have submitted claims for compensation for a variety of injuries, mainly psychological and in some cases, for organic brain damage. The recent submission of some of the claimants follows the successful challenge to the ComCare legislation that would have statute barred such claims. Some settlements have been already made with pay-outs of the order of \$250,000. Others are subject to confidentiality clauses.

Full steam ahead into the 21st century

The fleet of the 21st century will not only be much different from the fleet when I entered service, it will also operate in a much different environment.

Some of the problems facing our men and women at sea during peace-time training and when deployed on operations include:

- changing sea-shore ratios with increasing commitments that may conflict with family life;
- the concept of 'minimal manning' leading to potential problems associated with:
 - watchkeeping;¹⁶
 - storing ship;
 - armament handling;
 - multi-skilling;
- gender and social issues;¹⁷
- environmental threats:
 - non-ionising radiation;
 - asbestos.

Asbestos

The presence of asbestos in navy ships has been a matter of concern at least since 1968.¹⁸ It gained widespread publicity following the premature retirement and subsequent death from mesothelioma of the Governor of NSW in 1990.

Following from recommendations in a detailed review (the Enfield report), an asbestos litigation cell was established in Sydney. This cell has documented a steady increase in claims for assessment from 1994/95 onwards;¹⁹ Navy (by Service – including navy civilians) and NSW (by state) have consistently dominated such claims.

Until 1990/91, asbestosis was the dominant illness, however from 1992/93, mesothelioma has become the most common disease. Disbursement of fees for compensation and legal (AGS) costs peaked in 1995/96 at \$5.4m. Anticipated changes to dust compensation law, which intends to end a bar on general damages, may lead to a further surge in claims.

A further outcome of the Enfield report was to draw together under the one Defence Instruction General,²⁰ the 24 different technical and health policies then existing in the three Services and Defence civilian areas. Navy has spent and continues to spend significant sums of money on either removing, or rendering safe by sealing, asbestos in its ships.²¹ The policy is considered to be based upon the best available scientific information, and personnel can now be reassured that service on such ships does not carry any significant risk of acquiring an asbestos related illness. Nonetheless, the perception of risk is one that is not as easily removed.

RAN health doctrine

RAN health doctrine is spelt out in detail in the technical publication ABR 1991 Volumes 1 and 2. The origins of this publication stem from the Royal Navy, however both volumes have been extensively adapted over the past 30 years to reflect Australian requirements. A reading of its contents reveals a comprehensive health delivery policy with a strong focus on preventive and occupational health strategies. This publication is progressively being taken over by tri-service technical health publications.²²

A high level of health care delivery (medical and dental) both ashore and afloat is a persisting theme of Medical Journals and Medical Logs. The Navy's ability to provide a sophisticated level of health support at sea will be significantly enhanced by the commis-

sioning into service the two Level three surgical support facilities in *HMAS Manoora* and *Kanimbla*.²³

Summary and Conclusion

As in the case of most military forces in the world, the ADF is proceeding down the path of rationalisation, integration and force reduction ('draw-down'). At the same time it is increasing its reliance upon use of technology and of the Reserve force.

This study of data obtained from health records indicates that the Navy has been well served by its Operational Health Support and OH&S policies developed over the years as evinced by low morbidity and low mortality figures despite frequently operating in highly dangerous environments. Vigilance will be required to ensure that this good record is maintained for the future given the changing nature of service life in the maritime environment.

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What they get - activities of the AMMA

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Web Site – regularly updated

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Weary Dunlop Award – Presented to the best original research paper at the annual conference.

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Visit the AMMA Website at <http://amma.trump.net.au/>

References:

1. Duplicate RAAF Health records are stored on an optical scanner. The requirement to maintain a duplicate is the subject of a consultancy study. A number of initiatives aimed at replacing the current paper based health record with an electronic version (which would facilitate epidemiological analysis) have not been successful to date.
2. Tuberculosis remains a potential threat for the Navy. This is because of contact with carriers (refugees/foreign fishing vessels) and of cramped living quarters at sea.
3. Rosenfeld JV, Warfe PG. Moral and philosophical challenges of a medical peacekeeping mission in Rwanda. *Aust Def Force J* 1996; 118:38-45
4. Rudski S. Injuries in the Army – The need for change. *Aust Def Force J* 1997; 122:33-9
5. Thompson RJ, Warfe PG, Lipnick RJ. Causes of mortality in Australian Regular Army personnel 1977-1991. *Aust Def Force J* 1997; 127:25-33
6. DDOHS Minute of 2 November 1998
7. WONP (now LEUT) Peter Beamish
8. Army 29 Oct 1998; 964:23
9. Parkes JF. Suicide in the ADF. Brief dated 20 Oct 1998
10. Five aircrew were killed in action with Helicopter Flight Vietnam (HFV) between February 1968 and May 1969.
11. McLaren ASA. Health problems in the Royal Australian Navy. MPH Treatise *Univ NSW* 1998
12. Defence Annual Report 1997 – 98 (Commonwealth of Australia) Part One, Table J.4 p163
13. This is consistent with data previously reported in 1998.
14. ANAO Audit Report No. 34 1996-97 (AGPS) Para 7.14 p66
15. Presentation to Engineering Operations Course by Director Defence Occupational Health and Safety. 12 Oct 98
16. The ability of ships to sustain round the clock operations is constrained.
17. Whilst Navy has made a determined effort to fully integrate women into the fleet, it has been at some financial cost (structural changes to fleet units). Further some episodes of unacceptable behaviour have attracted widespread publicity. Finally, the ability of the Navy to provide medical support for gender specific conditions for women in remote areas (submarines) has required careful risk assessment, risk management and risk acceptance.
18. Report of the Independent Review of Asbestos in Defence (The Enfield Report) *DDPubs Admin Services Branch* March 1991 p xi
19. ALC e-mail 07/9/98 11:27
20. Defence Instruction (General) Personnel 40-1 dated 13 June 1991
21. Sums of the order of \$7m have been outlaid for the removal/encapsulation of asbestos on the two LPAs acquired in 1993.
22. Surgeon General Health Policy Directives, ADFP 700 series publications and Health Bulletins
23. The first Primary Casualty Reception Facility (PCRF) in HMAS MANOORA is due to commence operational training in 1999.

Anzac doctors¹

S. Due²

Abstract

This paper outlines the significant events of the campaign on the Gallipoli Peninsula from a medical point of view, and records the exploits of the medical officers who served there.

Significance of Anzac

In the Gallipoli campaign the Australian soldier established a unique identity, and an en-

viable reputation. The official Australian war historian, C.E.W. Bean, and the official medical historian A.G. Butler, both celebrated the

¹ Due S. Anzac doctors. *Aust Mil Med* 1999; 8(1):8-12

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'digger spirit' – tenacious, democratic, courageous – which emerged during the fearsome baptism of fire of the First AIF.¹⁻³

The attacks on the Gallipoli Peninsula were made by sea from the island of Lemnos. It was intended to take control of the Dardanelles from Turkey, and so open a sea passage to the heart of enemy territory. Two landings were made on 25 April 1915, one at a beach which became known as Anzac Cove, on the western side of the peninsula, and one at Cape Helles, the southernmost tip.⁴

Medical personnel

AIF medical personnel during this campaign consisted of about 35 Regimental Medical Officers, with approximately a further 60 doctors in seven field ambulances (precise numbers varied with circumstances). At Gallipoli, additional medical officers served in the Clearing Hospital (on the beach) and two Stationary Hospitals (on Lemnos and at sea), which had about eight medical officers each. There were three AIF General Hospitals (in Egypt and on Lemnos), which had about 20 medical officers each, including some of Australia's leading specialists.

These doctors were responsible for the health of the AIF in the Middle East. Most of them, however, were civilians without military or public health experience. In addition to the expected problems of casualties and communicable diseases, they had to learn military methods, and to overcome substantial deficiencies of military medical organisation. During the Gallipoli campaign the Australian Army Medical Corps developed *in vivo* as it staggered from crisis to crisis, evolving in the process its own independent system of medical administration. The chief actor in this drama was Colonel N.R. Howse VC, the senior Australian medical officer at Anzac. Fearless in action, Howse was also relentless in his pursuit of solutions to organisational problems.⁵ These problems were discussed in detail by Butler, and were recently reviewed by Tyquin.⁶

Medical officers at the landings

The 3rd, 2nd and 1st Australian Brigades landed at Anzac Cove at 5:00, 6:30 and 9:30 am respectively. It would be interesting to know who was the first medical officer to land – presumably he was one of the RMOs of the 3rd Brigade. The attackers quickly came under enemy fire. Some men were shot in the boats as they approached the shore, others as they struggled through the water to the beach. Turkish rifles and machine guns were

soon supplemented by shrapnel. One of the first medical officers ashore, Captain Brennan, 11th Battalion RMO, recalled:

'As you can imagine, there was no time wasted in getting out of the boats and across the beach ... I heard an officer sing out "Fix bayonets lads, and up we go..." and with a yell they started up the hill, which was very steep. More men were coming all the time ... I followed them up, dressing the wounded and leaving them to be picked up by the bearers.'⁷

The men were soon engulfed in a maze of scrubby ridges and gullies leading up from the cove to Turkish positions on the heights above. RMOs had trouble keeping in touch with their bearers and the men of their units. By nightfall, however, the troops were entrenched on the ridges.

'Of course all the units were fearfully mixed up by this time,' wrote Brennan. The firing was continuous and very heavy... The men in the trench with me had their bayonets fixed all night, and I had my revolver ready. I had already taken off my red cross, as it was not much use in such a situation. We were all very glad when morning dawned.'⁷

Meanwhile, the stretcher-bearers of the field ambulances had gone ashore in the wake of their brigades, the remaining ambulance personnel waiting on the ships to receive casualties. Captain Archie Aspinall, of the 1st Field Ambulance, described the scene from a troopship as the ambulance bearers landed:

'At 10 am Captains Welch, Wassell and Kay [all doctors], with 108 stretcher bearers, went ashore in a torpedo destroyer, whilst the remainder of us watched with anxiety to see if they would land in safety, as the beach was under incessant shell fire, and the bodies of men killed at the first landing could be seen, with the aid of glasses, lying on the beach near the shattered lifeboats... The sound of rifle fire reminded me of the croaking of thousands of frogs ... and above all the mechanical rattle of machine guns could be heard.'⁸

Captain Welch, in the landing party, recorded his impressions of the same scene:

'We had some casualties amongst our own men whilst landing, and found collections of dead and wounded and "stove in" boats all along the shore. We had no distance to go before finding

casualties, and so were able to feel our way and gradually [sic] adapt ourselves to the novel circumstances.' ⁹

At about the same time, the 1st Australian Casualty Clearing Hospital landed. Captain Corbin recalled the dangerous approach to the beach as one of the most uncomfortable [journeys] I have ever undertaken'.¹⁰ This unit, renamed the 1st Australian Casualty Clearing Station, was established hard against the cliff for protection from enemy fire. The work of the Station in these early days has been comprehensively described by Butler and Tyquin, and was recently reviewed by Pearn.¹¹ The continuous flow of wounded men coming down the gullies from the firing line on the ridge above caused overcrowding on the beach and at the Station itself. Captain Corbin noted:

'We could not get any wounded off the beach until night [on 25 April], as all the boats and tows were needed to bring in supplies and troops. We began to evacuate them at 5 pm, and got about 600 off by 8 pm. They lay, during the day, all along the beach, for several hundred yards... Many were hit by shrapnel while lying there.' ¹⁰

Casualties were taken off the beach in a variety of small craft, mainly lifeboats and barges, and towed out to the ships waiting in the roads. On the night of 25-26 April, 1,700 wounded men were evacuated from the beach in this manner.³ Colonel Howse, who was responsible for establishing the Casualty Clearing Station, and for clearing the beach, attributed the appalling situation there to 'criminal negligence' on the part of the military authorities⁵ - an opinion undoubtedly shared by many of the medical officers.

Transport of wounded by sea

At the landing there was one hospital ship (*Gascon*) with a capacity for about 550. Therefore troopships, staffed by personnel of field ambulances and stationary hospitals, were used to take the bulk of the wounded from Anzac to base hospitals in Egypt. When these hospitals were full, wounded men were sent to Malta or England, or retained in hospitals established on the island of Lemnos. The troopships used for this purpose were not painted white, as hospital ships were, and displayed no red cross. Consequently they became known as 'Black Ships' - and they were black in more ways than one. Captain Deakin, of the 2nd Australian Stationary Hospital, described conditions on one of these ships:

Picture to yourself the hold of a ship, the port-holes open, a few electric fans revolving, scattered electric lights overhead, the mess tables and benches previously used by the troops still in position, the floors, benches and tables covered with wounded, some on blankets, others on bare boards ... and all the time a stream of wounded coming down the steps or being lowered down the gangway on slings... ¹²

Medical officers who worked on these ships, when describing their situation, generally expressed themselves circumspectly. Thus Captain Aspinall simply wrote: 'A description of the voyage to Alexandria and the condition of the ship would serve no good purpose'. Captain Moran, however, who served on a recently converted cattle carrier, was more direct: The stalls of a cattle ship, though newly whitewashed, are poor accommodation for men who laid their world aside and went dutifully in the red ways of war; but the crushed and broken human beings, who limped or were swung on board, found there a grateful peace'.¹³

Early days at Anzac

According to Bean, 16,000 troops landed at Anzac Cove on 25 April, with 2,000 casualties.¹ According to Butler, casualties among the Australian Brigades by 30 April amounted to 4,000 wounded and 1,000 killed, and by 2 May 6,000 wounded and 2,000 killed.³ After the first few days the troops were entrenched in an arc extending about a mile and half along the shore and 1,000 yards inland.

Early in May, concerted efforts were made to wrest high ground from the Turks. On 2 May, an assault on an important hill called Baby 700 resulted in 1,000 casualties but achieved nothing of significance.³ On 4 May an attack by a small force on Gaba Tepe proved equally unsuccessful. In this operation, Captain Brennan, RMO, went with his battalion, which assaulted Turkish positions on Gaba Tepe from the sea:

'It was a repetition of the first landing,' Brennan wrote, 'only worse. About 150 rifles opened up on us when we were about 40 yards from the shore... On crawling to the top of the bank [behind the beach] we found there was 40 ft of barbed wire between us and the Turks on the point. ... covered by a machine gun... As there were some severe wounds, I was kept pretty busy... We signalled to the destroyers to send a

boat to take off the wounded, which they did, and though the range was only 150 yards, the Turks let us carry them across the beach ... which was very decent of them, as they could have got us all quite easily.' ¹⁴

Extricating themselves proved more difficult for the RMO and his bearers – a mad scramble to the boats under heavy fire.

At Cape Helles

Meanwhile, at Cape Helles, British forces were similarly stalled. For the new offensive of early May, the 2nd Australian Brigade, accompanied by the stretcher bearers of its field ambulance, was taken there from Anzac Cove. Attacking across open ground against unseen enemy positions on 8 May, the brigade suffered 1,000 casualties (50 per cent) in under an hour.³ On a black ship at Cape Helles, Captains H.R.G. Poate and A. Aspinall, assisted by five junior RAMC doctors, took on over 800 men, many severely wounded, in 30 hours:

'We set to work to try and fix some of them up', Poate recalled, 'and both Aspinall and I were operating all day long on the worst ones... The RAMC chaps were busy, two giving anaesthetics for us, the others going round the cases.' ¹⁵

Stalemate

By the middle of May at Anzac the invaders were in relatively strong defensive positions. On 19 May Turkish troops attacked all along the line, and were slaughtered in thousands. On 24 May there was an armistice to bury the dead. Positions remained unchanged in June and July. In August the British mounted an all-out offensive on the peninsula. There was a disastrous landing by British troops to the north at Suvla Bay. At Anzac, there was a successful but costly attack on a Turkish position known as 'Lonesome Pine', and an unfortunate, far more costly attack on 'the Nek', in which wave after wave of the dismounted Australian Light Horse were mown down by machine guns. Meanwhile, at the north end of the Anzac line, the 4th Brigade fought its way up the Aghyl Dere towards the high ground of Sari Bair. Colonel Beeston, commander of its field ambulance, sent his bearers ahead with the troops and established his dressing station in a dry creek:

'All day we were treating cases and operating till late at night... At daylight we

could see our men fighting their way through the scrub over Sari Bair, the warship firing just ahead of them to clear the scrub of Turkish infantry. The foremost men carried flags, which denoted the furthest point reached ... as a direction to the ship. With the glasses one could see that the bayonet was being used pretty freely; the Turks were making a great stand, and we were losing a lot of men. They could be seen falling everywhere.' ¹⁶

After the August offensive, a stalemate again ensued, during which the medical staff fought their own battle against epidemic disease, particularly dysentery, which spread rapidly among the debilitated troops. All British forces were secretly evacuated from the peninsula in December, in the most successful operation of the campaign. The 1st Australian Casualty Clearing Station was the last medical unit to leave Anzac; the last doctor to leave was Captain A.S.D. Barton, the medical officer of the rearguard covering party.

In memoriam

The first Australian doctor to lose his life at Gallipoli was Lieutenant Muir Paul Smith, a young Sydney man serving as a signaller with the 4th Battalion. He was wounded in the knee, but returned to the firing line and was killed soon afterwards.¹⁷⁻¹⁹ The first death among medical officers of the AAMC was that of Captain G.C.M. Mathison, who died of wounds received while acting as RMO 5th Battalion at Cape Helles in the second last week of May.²⁰⁻²¹ Mathison, who was in his early twenties, was reputed to be a brilliant medical scientist.²² In July, Captain S.J. Campbell, RMO 8th Light Horse Regiment, died of wounds received at Anzac,²³ and Major S.J. Richards, from the Casualty Clearing Station, died of pneumonia.²³ Captain K.M. Levi, also in his early twenties, was killed while acting as RMO for the 2nd Battalion, Hampshire Regiment, early in August.²⁵⁻²⁶ On 25 August Captain J.F.G. Luther, RMO 15th Battalion, was killed.²⁷ Also in August, the young Archibald Scot Skirving, who had joined the RAMC, and was serving with the 5th Royal Irish Fusiliers, died of wounds received at Suvla Bay.²⁸ Early in September Captain A. Verge, RMO 6th Light Horse Regiment, having contracted dysentery at Anzac, died of the disease in Egypt.²⁹ At the end of November Major F.M. Johnson and Captain H.F. Green, both of the 6th Light Horse Field Ambulance, were killed at Lone Pine.³⁰ On 21 December, the day after the evacuation,

Captain J.D. Buchanan of the 2nd Light Horse Field Ambulance, died at Heliopolis of dysentery contracted at Anzac.³¹

The above list includes Australian doctors who were killed at Gallipoli, or who died during the campaign or soon afterwards of

wounds received there or illness contracted there. Butler in the official history lists only AAMC doctors,³² and I have therefore added the names of Muir Paul Smith and A. Scot Skirving.

References

1. Bean CEW. *Anzac to Amiens*. Canberra: Australian War Memorial; 1946
2. Butler AG. *The Digger : a study in democracy*. Sydney: Angus & Robertson; 1945
3. Butler AG. The Gallipoli campaign. Part I. In: Butler AG. *The Australian Army Medical Services in the War of 1914-1918. Volume I*. Melbourne: Australian War Memorial, 1930:1-544
4. Dardanelles campaign. In: *Australian Encyclopaedia, Volume 8*. 6th ed. Sydney, Angus & Robertson; 1996:3143-5
5. Starr A. *Neville Howse VC: Biography of an Authentic Australian Hero*. Sydney: Les Baddock & Sons, 1991
6. Tyquin MB. *Gallipoli: The Medical War. The Australian Army Medical Services in the Dardanelles Campaign of 1915*. Kensington, NSW: NSW University Press, 1993
7. Brennan ET. [Untitled] *Speculum* 1915; July (93):150-61
8. Aspinall A. First Field Ambulance, AAMC, AIF. *Sydney University Med J* 1917; 11(3):182-91
9. Welch JBS. Gallipoli experiences. *Australas Nurses J* 1918; 16:116-9
10. Corbin J. Experiences with the AAMC at Gallipoli. *Med J Aust* 1916; 1:111-4
11. Pearn JH. The pivot: The First Australian Casualty Clearing Hospital at the Gallipoli beachhead - The first seven days. *Med J Aust* 1990; 153:612-8
12. Deakin JEF. Some experiences with the No. 2 Australian Stationary Hospital. *Med J Aust* 1917; 1:76-9
13. Moran HM. A doctor-sahib in Mesopotamia. *Sydney University Med J* 1916 Oct; 11:88-92
14. Brennan ET. At Gaba Tepe. *Speculum* 1915 Oct; 94:272-5
15. Poate HRG. [Untitled]. *Med J Aust* 1915; 2:124
16. Beeston JL. *Five Months at Anzac: A Narrative of Personal Experiences of the Officer Commanding the 4th Field Ambulance, Australian Imperial Force*. Sydney: Angus & Robertson; c1916
17. Lieutenant Muir Paul Smith. *J University of Sydney Med Soc* 1915; 10(1):2-4
18. Muir Paul Smith. *Med J Aust* 1915; 1:470
19. Tebbutt AH. War and what it means. *Med J Aust* 1915; 2:55
20. Gordon Clunes McKay Mathison. *Med J Aust* 1915; 1:567
21. Zwar BT. [untitled]. *Speculum* 1915 Oct; 94:350-4
22. Osborne WA. The late Captain G.C. Mathison. *Speculum* 1915; July:138-44
23. Naval and military news. *Med J Aust* 1915; 2:305-6
24. Naval and military news. *Med J Aust* 1915; 2:174
25. Naval and military news. *Med J Aust* 1915; 2:174
26. Keith Maurice Levi. *Med J Aust* 1915; 2:309
27. John Fitzmaurice Guy Luther. *Med J Aust* 1915; 2:409-10
28. Archibald Scot Skirving. *Med J Aust* 1915; 2:261-2
29. Arthur Verge. *Med J Aust* 1915; 2:357-8
30. Frederick Miller Johnson. *Med J Aust* 1916; 1:127
31. Joseph David Buchanan. *Med J Aust* 1916; 1:45-6
32. Butler AG. *The Australian Army Medical Services in the War of 1914-1918. Volume I*. Melbourne: Australian War Memorial, 1930:449n

AMMA Merchandise For Sale

▪ Lapel Badge	\$5.00	▪ Shirt (white polo s/s) M, L, XL	\$20.00
▪ Mug	\$6.00	▪ Tie	\$20.00
▪ Pen	\$10.00	▪ Commemorative Envelope with stamps	\$5.00
▪ Plaque	\$25.00	(3 rd Annual Conference 1994)	

For more information please contact the Secretariat on
(03) 6247 1850 or PO Box 1042, ROSNY TAS 7018

Obituary

Dr John Charles Lane AM MB BS (Hons) MPH (Harvard), FACOM, FRAeS 1918 – 1999

Nader Abou-Seif

In late January 1999, John Lane, one of AMMA's first three Honorary Life Members, passed away after a short illness. John was widely considered to be the Father of Australian Aviation Medicine and with his passing, an era came to an end.

John Lane was born in Sydney in 1918 and educated at the Scots College. In 1935 he entered the faculty of Science, University of Sydney, later transferring to the Faculty of Medicine.

After graduating in 1941, John spent 1941-42 as an RMO at Sydney Hospital prior to joining the RAAF in 1942. In the RAAF, he was posted as Medical Officer to No. 3 OUT and No 20 Squadron (Catalinas). At the latter posting, he carried out research into crew fatigue in long range flying boat operations and the effects of low dose Benzedrine in combating this. This work led to a posting as the OIC High Altitude Training Units which was followed, in turn, by a period as Flying Personnel Medical Officer with Training Command.

Soon after the end of World War II, John was posted to the position of MA4 (Staff Officer, Aviation Medicine) at RAAF headquarters. In this posting, he was responsible for the post-war distribution of RAAF Aviation Medicine resources. In addition, he was a strong advocate for a continued RAAF involvement in Aviation Medicine research and teaching. In 1946, he wrote to the Director of Medical Services (Air) stressing the importance of the develop-

ment of a RAAF School of Aviation Medicine, proposing the current location at Point Cook and outlining a scope of responsibility that is reflected in the unit's present activities.

After leaving the RAAF in 1947, John became the first Director of Aviation Medicine in the Department of Civil Aviation, a position he held until 1982. During this time, he was involved as a Medical Monitor in the US Manned Spaceflight Program. His work with Projects Mercury and Gemini resulted in his recognition by the USAF as a 'Space Surgeon'.

John was involved in the RAAF Reserve for a number of years and attempted to develop an Australian Diploma of Aviation Medicine centred around the RAAF Institute of Aviation Medicine. Seven Australian Diplomas were awarded prior to the cessation of this diploma due to institutional problems.

Until shortly before his death, John was active as an Associate at the Monash University Accident Research Centre, and an Honorary Lecturer in the Department of Social and Preventative Medicine. He was also a member of the team that developed the TVASIS visual approach aid.

John has made a valuable contribution to Military Medicine as a pioneer in the field of Aviation Medicine. The practice of Aviation Medicine today reflects his vision of this discipline 50 years ago. It was a privilege to know him.

AMMA Research Incentive Scheme

Council Review

For some years now the Australian Military Medicine Association (AMMA) has offered research grants totaling \$2,500 annually as an incentive to members to engage in research in military medicine and to contribute to the body of scientific literature pertaining to the area. While there have been a number of excellent pieces of work produced under the sponsorship of the Association, the number of research proposals received for consideration for the grant has been very small.

With this in mind the AMMA Council has reviewed the research grant program. Council agreed the program should be revised and more broadly targeted. As such, from 1st of July 1999, AMMA will offer three prizes to members for original scientific literature on military medicine related topics in addition to offering a research grant (under the current rules but for a reduced stipend). The three prizes to be offered are:

- The AMMA Journal Editor's Prize of \$750 which will be awarded for the best original paper published in the AMMA journal in a financial year. The journal editor will be the sole judge of the best paper submitted and reserves the right to not award a prize in the event that articles do not meet an adequate standard.
- The AMMA Patron's Prize of \$250 will be awarded for the best original paper on a

military medicine related topic written by an AMMA member and published in a peer reviewed journal in a specified year. The Surgeon General of the ADF will judge papers submitted to the AMMA secretary for consideration for this prize by the 1st of August immediately following the year in question.

- The Australian Military Medicine Prize of \$500 will be awarded for an essay written by an AMMA member on a health related subject announced at the annual AMMA scientific meeting each year. Essays for consideration for the prize must be submitted to the AMMA secretary by the end of the financial year. The AMMA Council will judge them. No Council member may enter an essay into this competition.
- The AMMA research grant will continue under its current rules. However, the amount of the stipend for this grant will be reduced from \$2,500 to \$1,000 to be offered annually.

The adjudication of the judges of each prize will be final and no appeal or correspondence will be entertained. Further information on these prizes and grants is available through members of the AMMA Council.

Summary of AMMA Awards

Award	Amount	Criteria
AMMA Journal Editor's Prize	\$750	Best paper by an AMMA member published each year in the AMMA Journal. Judged by AMMA Journal Editor
Research Grant	\$1000	To remain in current form. Judged by Council
AMMA Patron's Prize	\$250	Best article published in a peer-reviewed journal by an AMMA member – must be a health-related article. Judged by AMMA Patron (Open to Council Members)
Australian Military Medicine Prize	\$500	Best essay by AMMA member on topic, which will be announced at the annual scientific meeting/conference. Judged by AMMA Council. (Not open to Council members)
Deadline: 30th June For published articles, publication will be in a specified year. Copies of articles published in other journals must be forwarded to Council to be considered.		

Abstracts from the Literature

Submitted by Andy Robertson

Henderson DA. The looming threat of bioterrorism. *Science* 1999 Feb 26; 283(5406):1279-82

Biological weapons have recently attracted the attention and the resources of the nation. Discerning the nature of the threat of bioweapons as well as appropriate responses to them requires greater attention to the biological characteristics of these instruments of war and terror. The dominant paradigm of a weapon as a nuclear device that explodes or a chemical cloud that is set adrift leaves us ill-equipped conceptually and practically to assess and thus to prevent the potentially devastating effects of bioterrorism. Strengthening the public health and infectious disease infrastructure is an effective step toward averting the suffering that could be wrought by a terrorist's use of a biological agent.

Atlas RM. The medical threat of biological weapons. *Crit Rev Microbiol* 1998; 24(3):157-68

There is a heightened threat of biological weapons being used for biological warfare or bioterrorism. Many of the microorganisms and toxins that may be used as such biological weapons can easily be acquired and mass produced. Dissemination of aerosols of these biological agents can produce mass casualties. If used by a terrorist they may overwhelm our current public health system. Some biological agents, such as *Bacillus anthracis* (anthrax) and botulinum toxin, are considered far more likely than others to be used as biological weapons; smallpox virus was apparently produced in mass quantities by the former Soviet Union and may also be a serious threat. The release of such agents could go undetected for several hours or days and would be followed by mass illnesses and a first line of response by the public health

community. Rapid epidemiological investigation to identify the nature of the disease outbreak would be critical for limiting casualties. For many, but not all, biological agents there are medical treatments that can greatly lower the mortality rate. There currently are, however, insufficient supplies of medicinals and trained personnel to cope with a massive bioterrorist or biological warfare use of biological weapons. Increasing our preparedness is critical.

Ventner A. Biological warfare: The poor man's atomic bomb. *Jane's Intel Rev* 1999; Mar:42-7

History records a surprisingly low incidence of biological weapon use, with only a hundred or so documented cases this century. However, biological warfare is far from out of fashion with mid- and small-sized nations and this threat is on the increase.

Comment. These are three useful articles that look at biological weapons and their potential use as terrorist weapons. All three articles are thought provoking, particularly with regard to the requirements for national preparedness.

Seelos C. Lessons from Iraq on bioweapons. *Nature* 1999; 398:187-8

There are strong political pressures to relax the scrutiny of suspected biological weapons activity in Iraq. But the experience of United Nations inspectors in the country points to significant dangers in such a policy.

Comment. Christian Seelos, one of the Biological team members at UNSCOM, has produced a timely review of the Iraq biological weapons program and the dangers of not resuming the monitoring this program. If we can't get it right in Iraq, can we get it right anywhere?

8th Annual AMMA Conference

Stamford Plaza Hotel, Adelaide

8th to 10th October 1999

The Australian Military Medicine Association will hold its annual scientific conference in Adelaide on 8 to 10 October 1999. In the heart of Adelaide City, the conference hotel, the Stamford Plaza, offers all the facilities and convenience of a top venue nearby to all the delights of the city.

The Governor of South Australia, Sir Eric Neal, will officially open the conference on the night of Friday 8th October at a cocktail reception at Government House. Delegates will come from all parts of Australia and overseas, and will include senior members of the Defence Health Services management staff.

The conference itself will be held on the Saturday and Sunday, with papers being read on a wide variety of military medicine related subjects. Operational medical support, psychological aspects of military opera-

tions, preventive health strategies, and biological warfare are just some of the aspects that will be covered. The art and practice of health support in each of the Services will be well represented.

In addition to the papers, the opportunity as always will be there for delegates to make new and renew old relationships both during the scientific sessions and at the formal and informal social gatherings during the conference. One highlight will be the Conference Dinner, which will include a Military Medicine Quiz.

The conference will be supported by a Trade Display, where companies who provide services to the military will have the opportunity to show their products to the delegates.

The Australian Military Medicine Association annual conference has as its major sponsor Smith Kline Beecham.

AUSTRALIAN MILITARY MEDICINE ASSOCIATION

8th Annual Scientific Conference

8-10 October 1999

**Stamford Plaza Adelaide
South Australia**

Enquiries to the Conference Managers
Joyce McGregor & Paula Leishman
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7th AMMA Conference - Addendum

AMMA Official Dinner – Quiz Answers

1. *What two British military calamities occurred in the same month, exactly one hundred years apart? What vitally important medical aspect was associated with one of these?*

The Retreat from Kabul, Feb 1842

The Fall of Singapore, Feb 1942

The only survivor of the Retreat from Kabul was a medical officer.

2. *What type of warfare was first used at Caffa in 1346? What was the weapon system used?*

Biological warfare

Cadavers thrown over the city wall.

3. *In what years and what cities and venues were the first 6 AMMA Conferences?*

1992 – Melbourne, Cabrini Hospital

1993 – Canberra, ADFA

1994 – Melbourne, Sheraton Southbank

1995 – Sydney, Manly Pacific ParkRoyal

1996 – Canberra, Sheraton

1997 – Melbourne, Sofitel

4. *Who was the Japanese medical officer in charge of the infamous Unit 731 biological warfare unit between 1938 and 1942*

Shio Ishii

5. *Who was the medically trained pilot who was the first aviator to die in WWI?*

George Mertz

6. *What characteristic is shared by two of the three double VC winners? What lesson does this portray?*

They were members of the health services.

We are slow learners.

7. *What animals were used in early diving decompression experiments? Why?*

Goats

They are susceptible to decompression illness, and indicate this by lifting one of their hind legs.

8. *What was the fate of the third of what arguably was the least successful class of passenger liner? What function was she performing at the time?*

HMHS *Britannic* was serving during WWI as a hospital ship when she was sunk by a mine in the Mediterranean. Her sister ships were RMS *Titanic* and RMS *Olympic*. The fate of the former is well known, but the *Olympic* herself also suffered a significant collision with HMS *Hawke* in the Solent.

9. *What was the name of the theme song for MASH?*

Suicide is Painless

10. *What were the three biological agents weaponised by Iraq in 1990?*

Anthrax, Botulinum toxin and Aflatoxin

11. *What gas was used in the first gas attack in April 1915?*

Chlorine

12. *Name the month and year of the sinking of the Centaur?*

May, 1943

13. *Why was Corporal O'Reilly known as 'Radar'?*

He was able to detect incoming aircraft.

14. *How was Achilles (apart from his heel) protected from injury during combat?*

When he was a baby his mother dipped him into the River Styx. She held him by the heel.

15. *What two unusual animals did Hannibal utilise in his military career?*

Asps and elephants.

16. *What Quixotic military medical incident occurred in Port Hedland in 1983?*

[In a moment of weakness, and with his bush lawyer's hat on, the Editor has decided not to publish the answer to this. Anyone who wants to know the answer should consult a member of the RAN who was serving at the time.]

17. *What was the name of the last Royal Navy submarine to sink? Where did this occur?*

HMS *Artemis*. Alongside at HMS *Dolphin*, Portsmouth

AMMA Update

News and information for members of the Australian Military Medicine Association

Successes

The following AMMA members have achieved success through honours, awards, promotions, publications, etc.

Members will note that these items are not complete. The Assistant Editor needs sources of information from the three Services and from our civilian members as well, so that this section of your journal can truly reflect the cross-section of our membership.

Updates can be faxed to CMDR Andy Robertson on (02) 6266-3933 or e-mailed to: agrobert@excite.com

Awards and Achievements

The following members of AMMA have received awards:

- Andy Robertson and Scott Kitchener were both awarded Fellowships of the Royal Australasian College of Medical Administrators after successfully completing the examinations in 1998.

Defence Force Promotions

The following AMMA members have been selected for promotion in the Defence Forces:

- Major David Hutton to Lieutenant Colonel, and posted to Headquarters Australian Theatre as Chief Staff Officer, Health
- Major David Scott to Lieutenant Colonel.

The following AMMA members have been posted to new Defence Force positions:

- Graham Peel has returned to Defence Health Service Branch as Director Strategic Health Plans and Intelligence.
- David Emonson is currently undertaking the Australian Defence College Staff Course.
- Jenny Firman has just completed the Australian Defence College Staff Course and has returned to Defence Health Service Branch to head up the Health Promotion and Preventive Medicine Area.
- Kevin Donovan has posted to HMAS Cerberus as Senior Medical Officer.
- Alison MacLaren has posted to HMAS Stirling as Senior Medical Officer.
- Andy Robertson has returned to Defence Health Service Branch as Staff Officer Nuclear Biological and Chemical Medicine.
- Chris Maron has posted to the position of Officer-in-Charge Environmental Medicine Unit at HMAS Kuttabul after 2 ½ years in the United Kingdom.

Lieutenant Commander Murphy Retires

Shirley Murphy recently retired from the Royal Australian Navy after a career spanning over 20 years. Shirley has served in numerous positions in both Navy and the Defence Health Service, including Officer in Charge of the Navy's Medical Training School at HMAS Cerberus and most recently Staff Officer Health Training and Development in the Defence Health Services Branch.

AMMA Conferences

1999 Conference

The 8th AMMA Scientific Conference will be held in Adelaide from the 8th to the 10th of October 1999 at the Stamford Plaza Hotel.

Conference Committee

The 1999 Conference Committee is:

- Tracy Smart
- Janet Scott
- Suresh Babu

Full details on the 1999 Conference are included with this issue of AMM.

APPA

The Australian Peacekeepers and Peacemakers Association is an association for all those personnel who have served in some peace support role, either UN or other (like OP Bel Isi). If you are interested in joining, the National Secretary, Tom Travers, can be contacted on 07 3332-4778 or at 27 Silky Oak Way, Albany Creek, QLD, 4035.

AMMA Homepage

AMMA has a new home page:
<http://amma.trump.net/>

Whilst still under construction, there is lots to see. Let us know how we can improve the page and please provide us with links you have found useful.

AMMA Contacts

For all general AMMA enquires contact the Secretariat:

Paula Leishman

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Journal

Journals for 1999 will be published as follows:

Issue	Copy Deadline
August 1999	31 July
November 1999	31 October
March 2000	31 January

All queries regarding the Journal should be directed to:

Russ Schedlich

Tel: (02) 9563-4504

Mobile: 0412 286-740

Fax: (02) 9563-4554

Library

The Association's Library is located in the Fleet Medical Officer's office, Maritime Headquarters Sydney. Any member who wishes to browse through the Library (and visit the Librarian for coffee) is welcome to call.

Books from the library are available for loan of up to 12 weeks. Contact:

Russ Schedlich

Tel: (02) 9563-4504

Mobile: 0412 286-740

Fax: (02) 9563-4554

Research Grants

Details of the AMMA Research Grant program are included in this journal. Further details on the Grant can be obtained from:

Janet Scott

Tel: (08) 8272-7399

Conference and Meeting Calendar

Date	Conference	Venue	Contact No.
30 Jun - 02 Jul	Australian Tropical Health and Nutrition Conference	Sunshine Coast, QLD	(07) 3365-05377
07-10 July	Australian Society of the History of Medicine	Sydney, NSW	(02) 9290-3366
2-6 August	RACMA Conference	Sydney, NSW	(02) 9252-3388
22-25 August	11th Casemix Conference	Darwin, NT	(02) 6281-6624
25-28 August	7th Diving and Hyperbaric Medicine Meeting	Adelaide, SA	(08) 8232-4207
08-10 October	8th AMMA Conference	Adelaide, SA	(03) 6247-1850
22 Nov - 03 Dec	RAN Underwater Medicine Course	Sydney, NSW	(02) 9960-0333

AMMA ON THE NET:

Some useful pages:

Medical Conferences: <http://www.pslgroup.com/medconf.htm>

NBC Medicine: <http://www.nbc-med.org/>

New Scientist: <http://www.newscientist.com/>

Travel Medicine: <http://www.cdc.gov/travel/travel.htm>

CONTRIBUTIONS

for the August issue should be sent to:

The Editor
Australian Military Medicine
PO Box 730
PYMBLE NSW 2073

Deadline is 31 July 1999

Instructions for Authors:

Articles submitted for publication in *AMM* should conform to the following guidelines:

- two hard copies should be submitted, typed double-spaced on A4 paper (single-side)
- if possible, an electronic copy on an IBM formatted 3.5 inch floppy disc in a standard word processing programme should be submitted
- the text in both hard and electronic copies should be unformatted
- references in the text should be numbered consecutively as they are cited and annotation of the references should accord with the style given in *Index Medicus*. Where there are seven or more authors, list only the first three then *et al*. For example:
Szilagyi M, Dawson RM. Phosgene - A research review. *Aust Mil Med* 1995; 4(2):16-19
- figures and tables should be submitted separately with an indication in the text as to where they should be located
- the originals of all photographs, ECGs, EEGs etc should be submitted to allow high quality reproduction

Articles submitted may be subject to peer review. Articles which have been published elsewhere will only be considered if they are of importance to the field of military medicine, and publication will only proceed with the prior approval of the original publisher.



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Patron
Major General J.H. Pearn, AM RFD
Surgeon General, Australian Defence Force

President Nader Abou-Seif
Secretary Fabian Purcell
Journal Editor Russell Schedlich
Assistant Editor Andrew Robertson

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DISCLAIMER

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