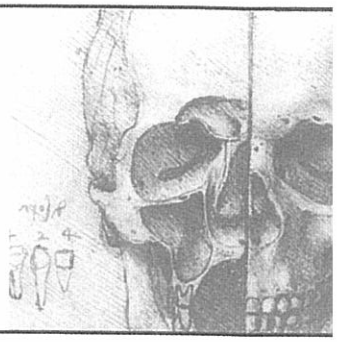
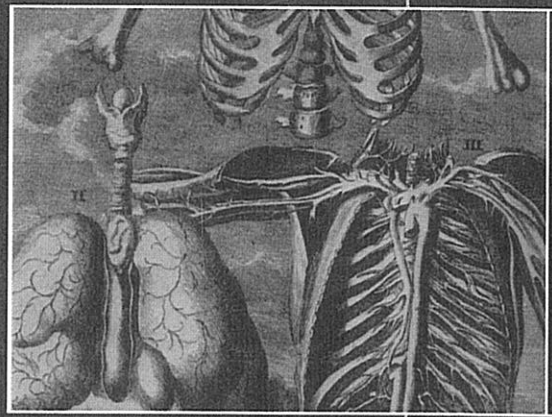


AUSTRALIAN MILITARY MEDICINE

JULY 2004 – Volume 13 – Number 1



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:

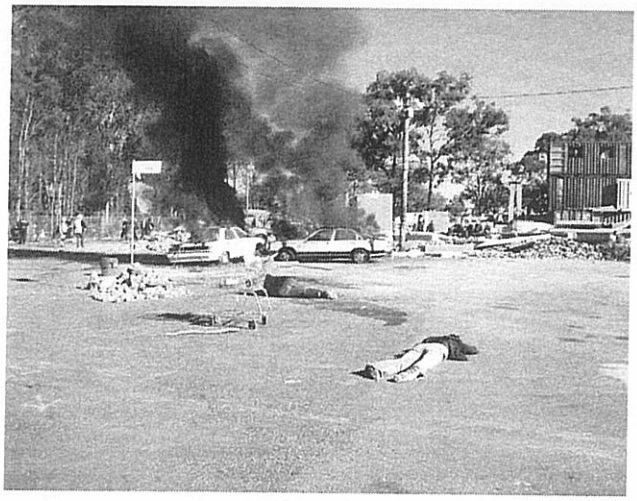
- promoting the study of military medicine
- bringing together those with an interest in military medicine
- disseminating knowledge of military medicine
- publishing and distributing a journal in military medicine
- promoting research in military medicine

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.

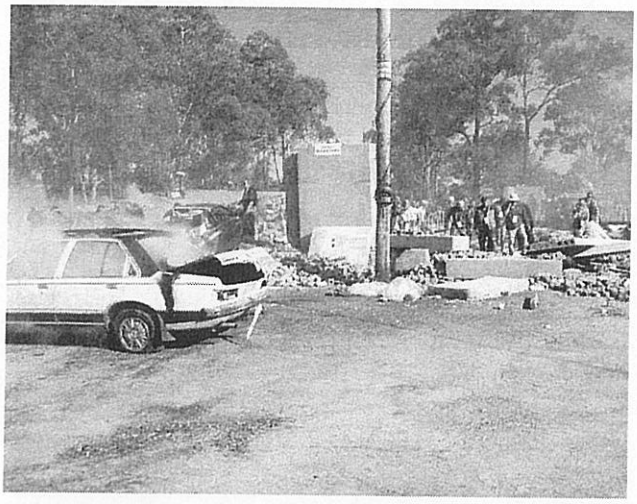
EDITORIAL

Defence's Role...

I WAS FORTUNATE RECENTLY to be the health umpire for a disaster exercise run by the New South Wales Government. The scenario for Exercise Explorer 2004 was a massive bomb going off in the Central Business District of Sydney with high numbers of casualties and a subsequent building collapse, which trapped more and required an urban search and rescue response.



The exercise went well – there were the inevitable early hiccups of consultation and communication – but raised a number of questions in my mind as to what the role of Defence in general, and the Defence Health Service in particular, was to an internal disaster. Although the exercise was held at the Holsworthy Army Base, there was no involvement by Defence beyond pure base liaison.



As can be imagined in such a scenario, there were also a significant number of exercise burns casualties, which in a real situation would have overwhelmed the local Burns service and would have required transfer to other Burns services interstate. As it was, an urgent teleconference of the Australian Health Disaster Management Policy Committee was called and a number of burn casualties were transferred, for exercise, to Victoria and Queensland. Once again, the question of how these burns patients could and should be transferred (vis-à-vis Bali) was raised. As with many of the disaster response questions, whether a natural or man-made disaster, burns management and medical retrieval are being closely examined by the Commonwealth and States and Territories. What concerns me is that Defence and the Defence Health Service would be significant players in a major disaster, whether they like it or not. To that end, Defence Health Service personnel need to be suitably trained for an internal disaster. Whilst some have received training, it has been ad hoc at best and the Defence Health Service needs to look at requiring MIMMS (or equivalent), Disaster Medicine, CBR Medical and Emergency Management of Severe Burns training as a minimum for any medical teams deploying to a disaster. Bali may be a harbinger of worse to come.

Welcome to the first issue of 2004, which looks at some of the psychological aspects of health operations, some personal reflections on East Timor and why we should be saying 'sorry'. Our Ten Years On article looks at the military wisdom tooth, while CMDR Westphalen reflects, in depth, on the faces of war. Our peer review process continues apace and is slowly bedding in. This process obviously takes more time as we need to allow time for reviews and any corrections. I would encourage any potential authors to get papers in as early as possible. Thanks all those reviewers who have volunteered and graciously reviewed various articles so far.

Andy Robertson

PRESIDENT'S MESSAGE

The Geneva Conventions – A modern dilemma?

THE UNFORTUNATE EVENTS OF RECENT MONTHS in Iraq, along with other issues surrounding the incarceration of prisoners in Guantanamo Bay, and even, perhaps, events in recent years closer to home, appear to be highlighting an issue that might be of potential concern to military health practitioners.

In the 19th Century, following his observations of the aftermath of the Battle of Solferino, a Swiss banker, Henry Dunant, galvanised the local villagers to assist the wounded.

M. Durant established the International Committee of the Red Cross (ICRC) in 1863. The primary aim of the Red Cross was to provide succour, support and protection to those who were caught up in and affected by war or other disasters.

The activities of the ICRC were admired and supported by all civilised nations, and the work of the organisation spread. The ICRC has thus come to provide a robust and respected method of ensuring that victims of war – the injured, the captured and innocent civilians – are properly treated and are given as much support as is practicable.

The ICRC was instrumental in developing and having adopted the Geneva Conventions, which set out the rules of war as they pertain to the humane and proper treatment of its victims. The Conventions provide guidance on the treatment of Prisoners of War. They provide protection to those who are involved in the care of the victims of war.

The world has seen many examples of nations and organised groups flouting the principles of the Geneva Conventions. The worst excesses came during the Nazi era in Germany, where even members of the medical profession were complicit in or coerced into a series of abominable "experiments" on Jewish prisoners, resulting in painful and cruel treatment and often death.

There are many other more recent examples of those involved in armed conflict – whether declared or not – ignoring the Conventions. We would probably sit comfortably in the notion that those who do these things are not from the group of highly organised and regulated military apparatuses characteristic of the Western world.

When is torture not torture? When do methods of extracting intelligence or information from prisoners cross the boundary between legitimacy and illegitimacy? Does the fact that a person is alleged to be a terrorist or may have information relating to terrorist activities diminish their human rights as compared to a prisoner in a civilian judicial setting?

Some countries have chosen not to ratify the International Criminal Court, where their actions could be tested against International Humanitarian Law and the Geneva Conventions. One country has gone to great lengths to place prisoners captured in recent conflicts in a position where they do not have access to the normal judicial system of that or any other country. In doing so, that country has also argued that, because these prisoners were captured during a war that was not declared between two nations, these prisoners are not Prisoners of War and therefore do not have the protection of the Geneva Conventions.

Other countries rather closer to home have employed similar tactics – the tactics of "excision" – to deny people alleged to have committed certain offences access to the judicial system of that country.

I do not want to argue the case for or against the actions of these countries.

However, I do pose the question of where these actions leave the Geneva Conventions and their future, and our notions of human rights, both in war and in peace.

This is particularly important to those in the military health profession. We all wear a Red Cross when we go into conflict on the basis that this provides us certain protections. But the strength of these protections appears to be being eroded because of the actions of, not disorganised terrorist groups, but modern, organised nations.

Wearing this Red Cross, I would argue, also invokes certain obligations on health professionals. The obligation not to be involved in practices that go against the Geneva Conventions or human rights, and perhaps the obligation to properly and openly report abuses of these.

Some years ago, I was involved in a debate over whether the Navy should have hospital ships, declared

under the Geneva Convention and marked with the Red Cross, or should have high-level health care in "grey" ships.

Leaving aside the high cost of maintaining dedicated hospital ships, the main argument that I put in favour of the warship option was that the technology of modern warfare, with "fire-and-forget" missiles launched from over the horizon, was blind to the Red Cross painted on the side of the big white ship.

Given the protection that the Geneva Conventions aim to provide to members of the military health profession, as well as to the victims of war, it must be of some concern that some nations appear now to be similarly blind.

Australian Military Medicine Association
NAME CHANGE

STATEMENT OF POSITION ADOPTED BY COUNCIL

Since its formation in 1991, AMMA has developed, matured and progressed so that it now has a solid foundation for its future. Nevertheless, the Association's membership has remained largely static over the last few years.

When first formed in 1991, the Association's name and structure was weighted significantly towards doctors. This was represented by the categories of membership and the limitation on the holding of the position of President to a doctor. This latter provision was removed soon after the Association was formed, and membership categories as currently applied do not distinguish between the professions. Nevertheless, the Association's membership consists largely of doctors (78%), an over-representation when compared to their proportion within the health profession. The number of dentists (5%), nurses (7%), and allied health professionals (9%) is small, particularly when considering that these professionals make up the large bulk of Defence Health personnel. The proportions of Permanent (44%) and Reserve (56%) personnel are roughly equal and the proportions of the three Services are also roughly equal – Navy (31%), Army (37%) and Air Force (32%).

In terms of untapped potential members, there are clearly sources among the non-medical health professionals, and in addition Army personnel appear to be under-represented.

There is little hard data to inform on the reasons for this situation. Anecdotally, however, the name of the Association, and the residual "sense" that derives from the early days, seems to be a barrier to broadening the membership of the Association.

There has been progress. Council has evolved to better represent the health professions, with one nurse and one dentist currently serving. Past Councillors have included an Occupational Health and Safety Scientist. However, there remains a preponderance of doctors on Council reflective of the membership proportions.

AMMA has always prided itself on representing the broad church of the military health profession, of being an Association that works to break down the professional and military barriers that often hinder the advancement of health care.

Following presentation to the membership of this issue both in the June 2003 Journal and at the 2003 AGM, Council considers the Association's name and image should now be updated to reflect its aims within the broader health profession.

Accordingly, at its March 2004 Council resolved to propose to the membership at the 2004 Annual General Meeting that the Association's name be changed to "*Australasian Military Health Association*".

Comment and discussion around this proposal is welcomed, and may be directed to individual Councillors, through the Journal or to the Secretariat at secretariat@amma.asn.au. A formal notice of motion will be forwarded separately prior to the AGM.

ORIGINAL ARTICLES

Psychotherapy at the Point of a Pistol[1]

LCDR Geoff Waghorn RANR and LCDR David West RANR[2]

ABSTRACT

Although specific phobias are among the most prevalent and most treatable of the anxiety disorders, successful treatments for firearm phobias are seldom reported. The assessment and treatment of a phobia specific to firing the 9 mm service pistol is described. The case was identified during a Return to Australia Psychological Screening (RTAPS) evolution, following the operational deployment of a Royal Australian Navy warship. The screening package involved group based psycho-education and standardised self-report scales for detecting trauma experiences and sources of psychological distress. These were followed by semi-structured individual interviews. This process revealed a sailor with a phobia linked to a traumatic experience following an unauthorised discharge of a 9 mm pistol. A behavioural treatment regime was planned and conducted at sea under operational conditions. Live firing constituted the main intervention. The positive results suggest live firing is a safe and effective form of single session exposure, conditional on additional safety precautions to supplement regulated weapons handling procedures.

INTRODUCTION

SPECIFIC PHOBIAS ARE less frequently reported in the literature than agoraphobia, social phobia, panic disorder, and other anxiety disorders. Yet specific phobias may be among the most prevalent of all mental disorders in the community. In a rare study of the prevalence of a broad sample of specific phobias, Frederikson *et al.*[1] found 21.2% of women and 10.9% of men met criteria for any single specific phobia in a community sample of adults aged 18-70 years (n = 704). Multiple specific phobias were found in 5.4% of women and in 1.5% of men. However, no reports of the prevalence of firearm phobia in the civilian community or among serving military personnel were located.

Graduated in-vivo exposure therapy is now the preferred treatment for specific phobias[2,3]. However, the only study located reporting the treatment of a firearm phobia[4] revealed that, in 1973, evidence-based treatment consisted of in-vivo flooding, motor activity, modelling and social reinforcement. It is plausible that firearm phobia treatments are rarely reported through being seldom necessary in civilian settings. Becoming severely gun-shy can be an adaptive response when there are no personal safety or occupational implications. In contrast, persons in military or police service may require immediate treatment to avoid the potentially disastrous consequences of failing to use firearms rapidly, safely and effectively when required. In addition, untreated firearm phobias may have adverse career implications through the inability to maintain small arms proficiency.

There is evidence that pre-existing specific phobias may increase the subsequent risk of posttraumatic stress disorder (PTSD) following acute stress exposure[5]. This is consistent with studies identifying psychiatric history and the number of prior war-related traumatic experiences, as risk factors for PTSD[6-11]. Furthermore, phobias can lead to depression, which subsequent to a traumatic experience may increase the risk of PTSD emergence[12].

Current theory guiding the treatment of combat stress reactions is based on a widely accepted doctrine of

1. Waghorn G, West D. Psychotherapy as the point of a pistol. *Aust Mil Med 2004:* 13(1):4-8.

2. LCDR Geoff Waghorn RANR, BSocSci (Waikato), Dip Psych (Queensland), Psychologist. Geoff's civilian employment is as a Scientist with the Policy and Economics Group at the Queensland Centre for Mental Health Research, The Park, Centre for Mental Health, Wacol, QLD 4076. He is also a PhD candidate with the Department of Psychiatry, The University of Queensland. Contact details: Geoff Waghorn, Tel.: 07 3271 8673; Facsimile: 07 3271 8698. E-mail: geoff_waghorn@qcmhr.uq.edu.au
LCDR David West RANR, RN, RPN, Grad Cert Health, Nursing officer. David's civilian employment is as a Community Mental Health Nurse with the Southern Fleurieu Health Service, Victor Harbour, SA 5211.

proximal and immediate treatment with clear recovery expectations[13]. More recently, the evidence-base for this doctrine has been challenged[14]. Despite this controversy, trauma-related firearm phobia appears suited to proximal and immediate treatment when there is a need to restore the capacity for safe and effective use of firearms.

This report aims to assist health professionals to treat firearm phobias in operational environments. An intervention in an operational setting is described, using a 9 mm semi-automatic pistol, a weapon in use throughout the Royal Australian Navy. Identifying personal and operational details were omitted for security reasons and to protect the person's privacy. Ethics approval for publication was obtained from the Australian Defence Human Research Ethics Committee.

METHOD

Detection via mental health screening

A routine Return to Australia Psychological Screening (RTAPS) evolution was conducted onboard an Australian warship returning from a recent operational deployment. Subsequently, one person was identified as having a probable DSM-IV[15] diagnosis of a specific phobia to the 9 mm service pistol. The RTAPS procedure required each member of the Ship's company to attend a group information session (40-50 minutes), complete a screening battery, then attend an individual interview (20-60 minutes) with a member of the visiting Mental Health Team (Navy Reserve Psychologists and a Navy Reserve Mental Health specialist Nursing Officer). The screening battery covered personal details, operational experience, impressions of the deployment experience, pre- and post-deployment career intentions, and sources of stress during the deployment. The screening battery included the civilian version of the Posttraumatic Checklist (PCL-C) [16,17]; a scale of non-specific psychological distress (K10)[18,19], a Traumatic Stress Exposure Scale Revised (TSES-R)[20] and an Australian Defence Force checklist of major deployment stressors[21].

DIFFERENTIAL DIAGNOSIS

Clear signs of a specific phobia emerged in the screening measures and were explored further during the individual interview. From a clinical perspective, the most useful scales for detecting this case included the purpose designed checklist of 36 typical major stressors[15], the PCL-C[16,17], the TSES-R[20], and a general question about negative experiences during the deployment. Candidate major stressors were rated on a five-point scale from 'No stress' to 'Extreme stress'. The sailor rated two items as causing extreme stress ('unauthorised discharge of firearms', and 'other experiences'). Both items referred to the same incident. The traumatic origins of the phobia were reflected in a PCL-C total score of 26 (below the recommended threshold of 50 for clinical follow up) with elevated scores on items 5-7 (quite a bit, level 4 of a 5 point scale); and items 1, 2 and 8 (moderately, level 3 of a 5 point scale).

The TSES-R indicated that no other trauma exposure had occurred during the deployment. Feelings of fear or horror in relation to the unauthorised discharge were described as moderate (level 3 of a 4-point scale) immediately following the incident. Although the unauthorised discharge occurred two months earlier, feelings of fear or horror had not subsided, and the sailor had been taken off boarding party duties due to a self-reported inability to carry and discharge a firearm. Other stressful experiences reported during the deployment included: threat of danger, separation from partner, lack of contact with family and friends, and worry about leave arrangements on return (all were rated level 4 of 5, 'A lot of stress'). The sailor's concern about leave was resolved via the Divisional system in the two days between completing the screening battery and the individual interview.

The K10 scale measures non-specific psychological distress[18,19], and showed elevated scores on items 3, 9 and 10 in particular. At interview, it was determined that these items projected increased worry, anxiety and depressive symptoms associated with deployment fatigue and the career implications of no longer being able to perform an essential duty. At interview, the sailor doubted any treatment for this disorder was feasible and expected certain discharge from military service. The separation from a partner during the deployment also contributed to elevated K10 scores, but the sailor regarded this as less severe and more manageable than the firearm phobia.

A probable diagnosis of Specific Phobia (300.29, Other Type) was made in accordance with DSM-IV[15] by identifying the source of fear as a specific object (the 9 mm pistol) and a specific situation (being

required to carry and possibly discharge the pistol), as distinct from the more general fear of a panic attack (as in panic disorder) or of humiliation or embarrassment in certain social situations (as in social phobia). There was no evidence of a delusional basis to the fear as the time and place of the unauthorised discharge was verified. The traumatic symptoms resulting from the unauthorised discharge were below the threshold required for Acute Stress Disorder, and were best explained by a Specific Phobia (Other type) with a traumatic origin.

TREATMENT PLANNING

The preliminary steps of exposing the sailor to the pistol were unnecessary as, over the two weeks prior to arrival of the Mental Health Team, the sailor had attended the armoury several times per week to handle one or more firearms for a few minutes. It was ascertained that the sailor was ready for 9 mm live firing under close supervision, and that there was sufficient time and ammunition (one half day and over 700 rounds were available) to achieve a satisfactory single session treatment outcome. The sailor preferred immediate treatment over deferred arrangements once ashore and, although nervous about live firing, assured the treatment team sufficiently that high initial levels of anxiety could be tolerated. Brief counselling was provided to ensure the sailor understood and accepted that, even under extreme sensations of anxiety, it was possible to follow orders as usual. The need for a special live firing activity was discussed with the Buffer (the Chief Bosun's Mate), the Executive Officer, and cleared with the Commanding Officer. Subsequently, live firing was scheduled for the next forenoon in accordance with Ship's standing orders.

An exposure treatment plan was formulated from first principles. These principles suggest that each exposure activity be perceived as challenging but not impossible, with expected subjective units of distress (SUD) at commencement ideally in the range of 6-8 out of a maximum 10, where 10 represents the highest distress ever experienced and 0 represents no discomfort or concern. The second principle requires an exposure repetition to continue until SUD ratings decrease by a substantial amount (usually 30-50%). Once a sufficient SUD reduction is achieved, the exposure repetition should cease, to reward the person with a short break. The third principle requires multiple repetitions at each exposure level, until recommencing the exposure activity at that level of challenge no longer triggers substantial SUD ratings. The sailor's SUD was expected to begin high at 7-9 and drop to 2-3 out of 10 on completion of five or more details of live firing.

Standard safety precautions were strengthened by providing two supervisors: the Buffer, for safety procedures and coaching, and a Mental Health Team member to monitor the sailor's physical signs and capacity for safe conduct. Immediate action drills were not to be practiced unless stoppages actually occurred. Service ear protection was worn at the firing point. Lanyards secured pistols to holsters to prevent loss of weapons overboard.

The first detail consisted of the sailor only. Four other shooters were readied in two additional details. Each shooter was provided with three or four 13-round magazines per detail. While not shooting, the sailor was required to remain a safe distance from the firing point and assist by mustering and reloading magazines and by launching targets overboard. This provided short breaks while keeping the sailor continuously occupied. At the target delivery point, ear protection was removed to hear calls for new targets. This enabled continuing exposure to the sight, smell and sound of 9 mm pistols discharging.

The first discharge was to be initiated by replacing the usual firing order 'watch and shoot' with the command 'fire' to remove the decision burden from the sailor. The Buffer proposed an additional drill in which the sailor was required to target his fall of shot. This drill was included because it requires constant visual scanning of the target zone and fast aiming and squeezing responses as in snap shooting. This drill was expected to help by reducing the time available for the sailor to dwell on internal sensations.

RESULTS

The sailor did not fire as expected on the first order. Aim was maintained without firing until a second fire order produced the appropriate response, the sailor firing the first round. The first magazine was expended slowly as targets became visible in the wake. The second and third magazines were used for the drill 'follow my fall of shot', with the Buffer leading. The sailor seemed to increase rate of fire as comfort increased, and reported later that slow firing was more difficult than more rapid firing. Individual target

selection was used for the fourth magazine. After four magazines, the sailor was stood down and the next detail brought forward. The sailor reported a SUD of 9.5 out of 10 before firing the first round, which reduced to 7/10 after the fourth magazine. In the three subsequent details, the sailor followed similar procedures and reported similarly decreasing SUD ratings as per Table 1.

Firing Detail	Rounds expended	SUD rating at commencement (range 0-10)	SUDS rating on completion (range 0-10)
1	52 (4 mag.*)	9.5	7.0
3	52 (4 mag.)	7.0	5.0
5	52 (4 mag.)	5.0	3.0
7	39 (3 mag.)	3.0	1.0

Table 1: Subjective units of distress (SUD) during live firing.
**magazines*

DISCUSSION

A sailor with a firearm phobia was identified through routine mental health screening. It is unlikely that this person's problem would have been identified and treated if psychological screening had not been a post operational requirement. Even the internal inquiry into the unauthorised discharge (whose findings are restricted), which precipitated the condition, was unlikely to identify the need for treatment of a specific phobia. A potentially disastrous situation was averted by treating an incapacity for safe use of firearms by a sailor expected to have a high degree of firearm competence. In addition, mental health status, employability and career prospects were at risk had this condition remained untreated. Further details on the sailor's progress were unavailable at the time of writing 14 weeks later, however, it was confirmed that employment had continued in the same category of service.

Interestingly, the sailor's mental health status was also compromised by leave difficulties and recent separation from a partner, yet the sailor felt these issues were more manageable than the phobia and its consequences. The sailor's own judgment was accepted, although it is acknowledged that in many cases these issues require attention before attempting an exposure intervention.

Once the proposed intervention was explained and expectations of recovery were clearly articulated, the sailor willingly cooperated and accepted the treatment plan advocated by the Mental Health Team, even though personal expectations of success were low. The sailor later recalled that, just prior to commencement of the exposure session, peers were told "...those guys are nuts". This recollection was taken by the Mental Health Team as possibly reflecting the sailor's high anticipation anxiety and low confidence in the efficacy of the proposed treatment. Such dissonance is not unusual in the military, as members are trained to trust and obey the judgment of higher ranks even when the quality of that judgment is unknown. In military settings, this, and a capacity to follow orders under duress, appears to facilitate the proximal and immediate treatment of firearm phobia in accord with current theory for the treatment of combat stress reactions[13,14].

In a civilian context, however, greater caution is indicated. Clinicians could consider additional exposure grades, such as extensive dry handling and cleaning drills, virtual reality firearm drills, air pistols, and .22 calibre firearms with subsonic ammunition. The positive outcome achieved in this case supports the use of live firing, with strengthened safety precautions, as an effective single session exposure treatment for firearm phobia, suitable for proximal use in operational environments.

ACKNOWLEDGMENTS

We thank Duncan McLean and Phillip Burgess for helpful comments on this paper.

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ORIGINAL ARTICLES

The Systemic Cost of Long Term Deployment: Cohesion in Peacekeepers Families. Helping Post-modern Military Families reach a Post-deployment Equilibrium through Second-Order Changes and Good Communication[1]

Major Erik L.J.L. De Soir[2]

"If the Army would have wanted you to have a wife... it would have issued you one"

ABSTRACT

In this paper, the typical marital or family problems occurring during the emotional and operational stages of long-term deployment are analysed by using various key concepts of the systems theory and the pragmatic communication theory[1].

The aim is to present a model for psychosocial support, which includes pre, peri and post-deployment care for post-modern veterans and their most significant others, based upon action-oriented and psycho-educational counselling sessions for couples, at the critical stages prior to, during and after the deployment period. This innovative approach, which is less based on pure symptomatic intervention and merely providing basic information on how to cope with deployment, as seen in most of the other intervention models, allows peacekeepers and their partners (or family members) to increase their relational competencies and their coping skills before, during and after the separation. It also consists of a series of counselling sessions, both prior to and after deployment, of "new peacekeepers" by "veterans".

First, we will bring the well-known (emotional) stages of deployment[2,3] along with the so-called operational stages of deployment[4] into focus. Secondly, the basic concepts of the systems theory and the axioms of pragmatic communication, needed to select relevant work items for psycho-educational counselling, will be discussed. In the third part, we will introduce the conceptual framework for systemic psychosocial support. This will be formulated in terms of learning to go away, learning to be away, and learning to come back. Finally, the most important support activities will be placed on a time axis and explained in the construct of a structural model.

INTRODUCTION

SINCE 1991, BELGIAN TROOPS have been deployed on a regular basis in several out-of-area operations and peace support operations, creating a unique situation of psychosocial family trauma for the concerned soldiers and their significant others.

At first, there was little to no concern about the potentially high risks of cumulative family stress, due to the repetitious deployments, on the peacekeepers' families and their quality of life. Initially, it seemed that neither the soldiers nor their family members or relatives had the right to "complain" about the repetitious long-term deployments. After all, didn't they make the choice for such a life?...

It seemed as if fifty years of (relative) peace during the Cold War period had figuratively paralysed the military leaders' good sense about the importance of natural social support (i.e. the family or private living environment) on (mental) readiness and morale.

However, after several years of experience, our military and civilian authorities began to understand that the aforementioned deployments, and the overwhelming rhythm which couples and families were confronted again and again with long-term separation, cre-

1. De Soir ELJL. The Systemic Cost of Long Term Deployment: Cohesion in Peacekeepers Families. *Aust Mil Med 2004*; 13(1): 9-17.

2. Major Erik L.J.L. De Soir is a Clinical Psychologist, Trauma Counsellor and Family Therapist in the Department of Behavioral Sciences – Stress & Trauma Research Centre, Royal Military Academy, Brussels, Belgium.

ated unique family stressors beyond those experienced during peacetime exercises and training periods.

Several years of practical clinical experience with peacekeepers and their partners within the Center for Military Family Action (CMFA, Royal Military Academy) showed that it is very important to provide marital and family counselling prior to, during and after long term deployment to prevent serious problems or dysfunction of the deployed family member on the one hand and his family on the other. Although the current support measures for families and/or spouses, which aimed at providing basic information and social support, are very important, they do not seem to prevent severe marital or relationship problems. The soldiers and their spouses are often, even after a second or third deployment, in search of a language to share mutual experiences and to explain how they really felt about the long term separation imposed by the armed forces. Even the children of peacekeepers continue to experience problems in understanding what really happened to their family and why one of their parents, or both, seem to have changed.

Therefore, a psychosocial support model should include proactive activities aimed at enhancing the communication and negotiation skills of both partners of the relationship, which are designed to teach them to cope with long term separation and its effects on the family system. Our armies should understand that long term deployment affects a couple or a family in a permanent and profound way. Over the last few years, many children grew up in a single-parent household for most of the time. Giving peacekeepers and their partners the illusion that, after a long term deployment, everything remains the same is hiding the truth: some relationships will never recover from the psychosocial scars that have deeply damaged their life. This will become clearer in the next paragraphs in which we will analyse some of the mechanisms responsible for driving the partners of a relationship away from each other. If military leaders do not take these mechanisms seriously, they will, sooner or later, be confronted with a total burnout of the personnel of combat units, who are overwhelmed by repetitious deployment and deep family wounds from which they will never recover or recover only very slowly.

We will first take a closer look at both the emotional and operational stages of deployment.

THE EMOTIONAL STAGES OF DEPLOYMENT

The emotional stages of (peacetime) deployment, as described by Peebles-Kleiger and Kleiger[3], were used to describe the cyclic experiences of peacekeepers and their partners, prior to, during and after deployment. In this paper, we will focus on normal relationships, which, in most cases, have no premorbid marital or family problems.

We could distinguish two different versions of the emotional cycle. The first version describes seven phases of adjustment, from the anticipation of the loss (being the departure of the soldier) to the final re-integration and stabilisation of relationships within the family upon reunion. The second version, which we will name the grief model, describes the four emotional stages of adjustment based on the stages of grief after bereavement[5]; those stages of grief being (1) anger/protest; (2) sadness/despair; (3) coping/detachment; and (4) return/reunion. Since the two versions are similar in thrust, Peebles-Kleiger and Kleiger[3] integrated the two in a composite description which we will briefly discuss below (Table 1).

Stage 1	Initial Shock (Anger/Protest/Emotional Numbing)
Stage 2	Departure (Detachment/Withdrawal)
Stage 3	Emotional Disorganization (Depression/Anxiety)
Stage 4	Recovery & Stabilisation (Coping/Detachment)
Stage 5	Anticipation of the Homecoming (Confusion/Mixed Feelings)
Stage 6	Reunion (Euphoria)
Stage 7	Reintegration & Stabilisation (Working Through Process)

Table 1: The Emotional Stages of Development

STAGE 1: Initial Shock

Both versions of the above model describe a one to two week period of tension, protest and anger as the news of the impending deployment is released and the family begins making preparations for the separation. People are described as being "on edge" and "slight irritations can grow to major proportions". This can be compared to the "Anger/Protest" stage in the grief model.

Clinical experience indicates that early warning for deployment (sometimes 8 months before departure)

raises the family stress considerably (testing the problem solving capacities of the family or the partner, living by "last times", sharing "last special moments", etc...). Peacekeepers spouses and/or family members should learn to understand that "going away for several months" initiates a specific emotional separation process: partners do not need to focus on this one moment, during which they have to find the right words to say goodbye; saying goodbye to each other can take several weeks!

STAGE 2: Departure

The final few days before the departure bring the second stage of "Detachment/Withdrawal", in which members, frightened by the impending loss, typically distance from each other.

Clinical experience indicates the 'marital or relational threats' of the 'emotional numbing' which occurs during this stage. Therefore, it is important to inform both partners in a relationship that absence of expressed emotions is not equal to absence of emotions. Nor is it a signal of an absence of caring. It is quite the contrary, the stronger the numbing, the stronger the underlying emotion.

Peebles-Kleiger and Kleiger[3] state, in this context, that the absence of time to prepare for the separation, coupled with the intensity of fear and uncertainty, can trip a sort of "emotional circuit breaker" in the mind, cutting off all feelings, so that the person does not get overwhelmed and subsequently paralysed.

STAGE 3: Emotional Disorganisation

Beginning at the time of departure itself, as the buses are pulling out or the plane is taking off, is the phase of "Emotional Disorganisation" or "Sadness/Despair". In this phase, tension and/or detachment are replaced by sadness and loss. Partners of departing soldiers sometimes cry a whole weekend. It is when the practical things have been completed, and a few weeks have passed, which demonstrates that this is not simply a "bad dream" or an ordinary separation, that the intensity of feelings of emotional disorganisation and sadness/despair can hit. Symptoms of depression can set in, with problems sleeping, periods of tearfulness, and difficulty eating. This period is described as lasting about two to six weeks. In the same context, we like the description given by Norwood, Fullerton and Hagen[6]: "The extended absence of a spouse creates new stressors and opportunities for the individual left behind. Responsibilities and decisions related to managing the household that normally are shared, must now reside with the husband or wife remaining at home. If there are children in the family, the parent left behind temporarily becomes a "single" parent. He or she must assume all the responsibilities of caring for the children while the other parent is away. During the deployment, the stay-behind spouse often experiences emotional confusion that can last for several months. The initial experience of the separation is frequently characterised by feelings of abandonment, loss, pain, and disorganisation. Frequently, the spouse will report mild and transient depressive symptoms of tearfulness and loss of sleep or appetite. Generally, these feelings subside as the family settles into a new routine. Often, the spouse at home will develop greater confidence as he or she negotiates the activities of daily life as a temporarily "single" person or parent. Ideally, the couple stay abreast of each other's experiences through phone calls and frequent letters".[6]

"Our clinical experiences confirm the existence of a 'cry-weekend': the partner who stays behind cries nearly a whole weekend, feelings of loss and sadness/despair can become overwhelming during those first days. Furthermore, we believe that certain families are more vulnerable to emotional disorganisation than others. The last years we considered the following group as being a "risk-group": (1) the age of the stay-behind spouse is 25 to 30 years; (2) the age of the children did not reach 5 years; (3) the age of the relationship is less than 5 years; and, (4) the service member is fulfilling his 2nd or 3rd deployment."[6]

Using the concept of a risk group means that the degree to which families correspond to the profile of the aforementioned group seems to correlate with the adjustment/ emotional recovery of the family system.

STAGE 4: Recovery and Stabilisation

At about the sixth week, the phase of "Recovery and Stabilisation" or "Coping/Detachment" begins. The sadness drifts away and is supplanted by "a state of relative calm and confidence in handling day-to-day living".

Although the occurrence of a major crisis can temporarily upset the psychological equilibrium, the calm is described as lasting the bulk of the deployment for the most part. This phase involves

settling into a comfortable routine, making community and group connections and maintaining communication with the deployed service member.

Our clinical findings indicate that the recovery and stabilisation sets in as a function of what Peebles-Kleiger and Kleiger[3] call the media roller coaster. The emotional and psychological equilibrium seems to be function of the quality of the contact and the communication (postal service, telephone, press, television, rumours,...) with the deployed member(s). At this stage, one can claim a same reality with respect to the deployed soldiers: morale shuts rapidly down when contacts with the home front deteriorate.

For example, many families still don't have any idea about where in the Former Yugoslavia, or Kosovo, their family member is deployed. Panic and anxiety arises when TV images of other "near-by" conflicts reach the home front.

The result of this combination of fear of death, lack of hard knowledge, and rapidly oscillating media news spills, is that the mood and courage of the stay-behind family members is rather fragile and permanently oscillates between hope and despair, up and down, like a Yo-Yo.

STAGE 5: Anticipation of the Homecoming

About six weeks before the deployment ends, "anticipation of homecoming" begins. Activity, tension, and even despair emerge again as the families rush to prepare themselves and their home for the return of the deployed service member. Fears and hopes run high as the family's conflicting expectations of reunion versus change, and fulfilment versus disappointment, are stirred. The deployment nears an end and expectations about the reunion grow high. There is a sense of excitement about being together again but also some apprehension about how everything will have changed. All kinds of activities, aimed at making the re-union even better - such as last-minute diets, new clothes and/or underwear, house-cleaning, etc – only raise the reunion stress on both sides of the relationship. It is certain that is better to leave surprises behind, on both sides of the relationship!

Our clinical experience indicates that this period is comparable to the stage of the short timers' syndrome in the deployed servicemen. Navy officers talk of 'Channel Fever'; when their ships are some two weeks from the end-of-mission or homecoming, stress on board of the ship reaches a high level and created numerous conflicts.

Soldiers and their families start thinking of 'normal' life again and divest psychological energy from the deployment situation, especially from unpleasant but necessary routine activities. This creates a lot of tension among the military personnel.

STAGE 6: Reunion

The actual stage of "reunion" is described as beginning on the reunion day and lasting about 6 weeks for 'low intensity deployments' (such as the UNPROFOR and UNTAES missions in Eastern Slovenia and Croatia) and up to 6 to 9 months for 'high intensity deployments' (such as the RESTORE HOPE mission in Somalia).

The combination of overwhelming emotions and estrangement make the returning spouse seem "different" to those who welcome him/her. When couples or families are reunited after the deployment, their readjustment stage begins. In this stage, the family tries to become a family again, to get re-acquainted and re-accustomed to each other, to negotiate changes in old roles and territorial changes, and to respond to the specific changes in each other. The marital couple works to re-establish intimacy, and children and parents work to re-establish familiarity and connectedness.

We agree with Norwood, Fullerton, and Hagen[6] that the high expectations about the reunion are a source of considerable problems. The reality of reunion often does not live up to these fantasies. Reunion begins with a "honeymoon" phase that lasts until the first major argument. As the couple re-establishes intimacy, there are commonly feelings of euphoria and excitement. However, the couple will soon have to cope with a difficult readjustment period, which can easily last up to 8 weeks. The relationship and the roles in it, as well as in the household, have to be redefined and renegotiated.

Our clinical experience indicates some special problems. Amongst others, we have the specific problems of "the loners": servicemen with poor education, weak family ties and/or without a partner relationship. After deployment, they start living in social isolation and want to be deployed again as soon as possible. They just want to find again the social situation of emotional sharing and friendship they experienced during the mission, sometimes for the first time of their life. There is a risk that readjustment

will be very slow or non-existent. In some cases, they become totally isolated and can be considered as a special risk group with respect to long term psychological sequelae.

Other typical reunion problems consist of "emotional numbing behaviour", detachment and non-comprehension of the enormous importance of the repetitious rehearsals between "the group of companions in fate" (which consist of the servicemen who were deployed together in a small group) and a diversity of relational problems amongst which the fears (and possibly the consequences) of "marital infidelity" by both partners.

The rapid re-entry and feelings of (unchanneled) aggression between family members and/or partners ("*You shouldn't have let me/us down so long*", "*Don't think you can just come back and start taking things over again*", etc...) will influence the period of reintegration and stabilisation in a negative way.

1	Preparation Stage (Work Overload)
2	Departure Stage (Psychic Numbing)
3	Habituation Stage (Culture Shock)
4	Routine Stage (Increased Stress Resistance)
5	Half Time Stage (Homesickness/Depression)
6	Anticipation Stage (Anticipation of the Homecoming/Short Timers' Syndrome)
7	Reunion Stage (Existential Shock & Psychosocial Readjustment)
8	Reintegration & Stabilisation Stage (Occasional After Shocks)

Table 2: The Operational Stages of Deployment

STAGE 7: Reintegration and Stabilisation

Finally, about 6 to 12 weeks after reunion, "reintegration and stabilisation" set in, with the family resuming their coherence as a functioning system again (with new borders between the different subsystems). Some relational "after-shocks" still remain possible, but generally most problems disappear. Unfortunately, the concerned couple or family soon tries to "forget" the bad experiences related to the deployment. As soon as possible, they (try to) behave as before the long term separation, as if nothing happened. In fact, as a marital or family system, they didn't learn much nor did they take the time to really integrate this challenging period into their life cycle. In many cases, this "non-learning behaviour" will be the source of severe problems prior to, during or after later deployments or family crises. This problem will become clear through the explanation of first and. second order changes in the next paragraph.

First, we will inventory the Operational Stages of Deployment (Table 2) and discuss them only succinctly. Since there is a considerable overlap between those stages and the aforementioned stages of deployment, we will not discuss the operational stages further in this text.

GENERAL SYSTEM THEORY

Plus que ça change, plus que ça reste la même chose

Mony Elkaïm

The most general definition of a system, coming from the Greek 'systema' meaning a composite thing, is the ordered composition of (material or mental) elements into a unified whole. The 'General Systems Theory', like cybernetics, concerns itself with the functions and structural rules valid for all systems, irrespective of their material constitution. Systems theory is based on the insight that a system as a whole is qualitatively different, and "behaves" differently, from the sum of the system's individual elements.

In the framework of family therapy, the application of the term "system" is identical to its application in the field of cybernetics.

INTERRELATIONSHIP, PATTERNS AND CONSISTENCY IN FAMILIES

The notion of pattern, one of the most fundamental concepts in theories of family systems, implies an ordered sequence or correction of events. It refers to a functional entity whose parts can be differentiated from one another. Its meaning overlaps with that of other concepts such as structure and gestalt.

According to Bateson[7], patterns should not be seen as static but as "patterns in time"; "stories" which lead to rules. Long term deployment deeply changes the family pattern, leads to the development of other epistemological structures, and shows the need for the development of new rules.

FAMILY HOMEOSTASIS

Homeostasis, from the Greek 'homois' (similar) and 'stasis' (stand still) is the relatively steady internal state of a system that is maintained through self-regulation (for example, the regulation of body temperature).

Families or couples, like certain systems, are capable of compensating for certain changes in the environment while maintaining relative stability in their own structures.

There also exist mechanisms in which equilibrium is maintained because a new equilibrium is achieved. For these mechanisms, we will take a closer look at first and second order changes.

Families can be seen as rule-governed systems where rules are not regarded as intrinsic to the system's function, but as homeostatic mechanisms imposed on the system. Long term deployment creates a rupture in the family homeostasis, and therefore changes the rules which govern the system. To really (re-)adapt, the family system necessitates second order changes.

The long-term deployment can be seen as a crisis for the military family. In a crisis (Greek krisis, a turning point) situation, the internal and external adaptation of an individual or a system is disturbed. Therefore, a family needs a certain amount of adaptability. When previously successful adaptive mechanisms are insufficient to preserve stability or balance, new skills and a corresponding internal restructuring become necessary.

In his "crisis theory", Lindemann distinguished two types of disturbance of adaptation: emergency and crisis[8]. One can cope with emergency situations by using accustomed methods; a crisis requires new patterns of behaviour. For example, a spouse soon finds out that long-term deployment will need coping skills other than those used in the case of the much shorter and more frequent training periods that the soldier has gone through in the past.

From a cybernetic point of view, an emergency is regarded as an adaptation disturbance that can be mastered by first order change; a crisis can only be overcome via second order change. Real evolution can thus be seen as the succession of crisis situations to which an individual, or the systems in which this individuals lives, adapted (as outlined in Erikson's theories on human development through the experience of growth crisis).

When change occurs in one family member, this inevitably leads to change in the ecosystem of all family members. Minuchin and Barcai[9] stated, with regard to this theory: " (...) if therapists are able to induce a crisis, they create conditions for change within the family. The solution of such a crisis is only possible through discontinuous and sudden second-order change"[9].

Other related and typical systemic notions in the same context are "Territorial Boundaries", "Rules & Redundancy", "First & Second Order Changes in Systems" and "(Error activated) Feedback in Family Systems". These terms will not be explained further in this paper.

COMMUNICATION THEORY

The Basic Axioms of Human Communication

Information is a difference that makes a difference

Gregory Bateson

In this paper, communication is seen as each possible form of information exchange between humans and the conditions or variations in which this exchange happens. The contemporary information theory relevant to marital and/or family therapy has its foundations in the pragmatic communication theory, first systematically outlined by Watzlawick, Beavin, & Jackson in 1967[10], and in the two-volume edition of Human Communication[11]. The authors integrated clinical data with the ideas, observations, and investigations of the double blind hypothesis of Bateson *et al.*[12] The posited principle was five "pragmatic axioms", which they believed could elucidate all forms of functional interpersonal communication. Teaching these axioms to soldiers and their significant others, prior to, during, and after deployment seems to be essential in the prevention of marital and/or family problems.

In the following paragraphs, the original definitions of the five axioms, taken from Watzlawick *et al.*[10], are printed in italics. We will try to explain in our own words what they really mean.

"One cannot not communicate..."

Axiom 1: *In an interpersonal context, "one cannot not communicate"* (p51). Every behaviour thus contains a message. Hence, the paradoxical situation occurs where a person who is not attempting to communicate will still communicate; non-communication itself is a form of communication.

"You always speak double words"

Axiom 2: *"Every communication has a content and relationship aspect such that the latter classifies the former and is therefore a metacommunication"* (p54).

"Everyone has his own truth"
Axiom 3: This relates to the punctuation phenomena and states that the nature of a relationship between two partners is determined by the manner in which they punctuate the communication between them.

"With or without words..."
Axiom 4: "*Human beings communicate both digitally and analogically*" (pp.66-67). Digital language has a highly complex and powerful logical syntax but lacks adequate semantics in the field of relationship, while analogue language possesses the semantics but has no adequate syntax for unambiguous definition of the nature of relationships.

"Who is the boss?"
Axiom 5: "*All communicational interchanges are either symmetrical or complementary, depending on whether they are based on equality or difference*" (p.70)

This conceptual framework makes it possible to better understand the highly complicated communication processes, particularly those governing couples' interaction within the context of "forced temporarily divorce" or long term deployment.

The impossibility of not communicating means that all interpersonal situations are communication situations and that the very specific situations during the emotional stages of deployment need very specific coping skills before they can be understood as legitimate and normal by both partners of a relationship. This is instead of giving them the idea that this only happens to them and that they are the only ones having marital or relational problems.

The differentiation between digital and analogue modes of communication is very important because analogue messages and definition of relationship exhibit a high degree of isomorphism. The ambiguity involved in the simultaneous exchange of messages concerning both the relationship itself and things outside the relationship leads to problems of interpretation and translation, which, if left unclarified, lead to pathological interaction patterns.

The concept of punctuation allows the possibility of talking about the reciprocity of human relationships in a manner that is at once different from, and more complex than, that of the traditional stimulus-response model of behaviour. Partners of a relationship, particularly in the context of the tough challenge that a long term deployment is for a couple, should understand that their proper behaviour is both the origin and the consequence of the behaviour of their counterpart.

As Simon, Stierlin, and Wynne (1985) state: "*Punctuation refers to the structuring and organisation by an observer of a continuous sequence of events and behaviours. Two partners, for example, perceive and organise their ongoing interaction into various sequences, and each subjectively perceives different patterns of cause and effect, or different structures of interaction. Depending on whether the interactional process between A and B is seen from the perspective of A or B, it may seem as if A is reacting to B, or as if B is reacting to A. According to one punctuation, a wife nags because her husband withdraws from her; according to the other, the husband withdraws from his wife because she is constantly nagging him. The manner in which an ongoing communication process and/or interaction sequence is punctuated determines the meaning attributed to it and how each person's behaviour will be evaluated, that is, who is responsible or "guilty", and how one describes to (re)act*".[13]

Punctuation in the communication between both partners of a relationship will be of major importance in the readjustment process after the deployment period. It is important that the returning veteran does not withdraw from his spouse and that the spouse on her side does not leave her husband alone with his existential shock after the homecoming, due to unilateral punctuation or context marking.

Finally, the concepts of symmetrical and complementary relationships introduce the important aspects of mutual evaluation and their relativity in interpersonal relationships.

FURTHER DISCUSSION OF THE BASIC AXIOMS

The second axiom in the communication theory, developed by Paul Watzlawick, Beavin, and Jackson[10], states that every interpersonal communication is not only an exchange of information about some subject matter, but also concurrently contains a message regarding the relationship between the interactional partners. This aspect of communication belongs to a higher logical type and represents a form of metacommunication.

The difference between content and relational

aspects of communication can best be illustrated by the numerous problems couples experience in the critical emotional stages of deployment. Prior to the deployment, the soldiers' spouse protests, not only to manifest anger with regard to the upcoming separation but also to react against the complementarity of the relationship, in which the military partner alone is held "responsible" for the difficult period the couple or the family will have to face. Even after deployment, the relational conflicts do not only serve to readjust and work through, but also to (re)define the type of relationship both partners have or want with each other. This relationship can be either complementary or symmetrical. In many cases, both partners of the relationship do not understand this dynamic process in which problems or conflicts mostly arise when one of them rejects the definition of the type of relationship provided by the other.

Through psycho-educational training prior to deployment (Table 3), and adequate counselling after deployment, couples can learn to cope with this normal phenomenon and learn to discuss the type of relationship they both want, instead of letting the problem degenerate into an interaction in which both want to have the last word.

Some soldiers, when being deployed, leave a dependent spouse who is used to have complementarity in her life. They come back home, after 4 to 6 months, to find that their spouse has turned into a very independent person; the relationship has became a symmetrical one, without mutual agreement to it.

In such a situation, the relationship that is offered by one partner ("I am superior; you are inferior") is unacceptable to the other, as is any attempt by either partner to agree upon a symmetrical relationship. Leaving a relationship undefined also leaves unclear what is "real" or "not real" in the relational sphere.

This problem has to be treated during the psycho-educative counselling sessions (for example, during preparative partner weekends); both partners need to learn to negotiate (wanted) changes.

PSYCHO-EDUCATIVE ACTION POINTS

Territorial Training
Relational Training (Defensive, Offensive)
Communication Training
Learning to Negotiate
Reporting Relational Irritations & Changes

LEARNING TO COPE WITH PEACE SUPPORT OPERATIONS

Learning to go away...
Primary prevention of relational and/or family problems
- Pre-Mission Briefing Day
- Preparative Weekend for Couples

Learning to be away...
Secondary prevention of relational and/or family problems
- Monthly meetings for significant others
- Monthly meetings for partners
- Children's Activities
- Other Significant Activities: CIMIC, special events, etc...

Learning to come back...
Tertiary prevention of relational and/or family problems
- Post-Mission Debriefing
- Reunion Weekend for Couples

1	Educate the 'military' couples & families on deployment adjustment: prior to (pre), during (peri) and post-deployment (post)
2	Reach out and make the availability of professional support known to the families left behind
3	Provide training to enable both partners of a relationship to cope with the critical stages of the deployment: prior to departure, departure plus two weeks, half time, homecoming minus two weeks and post-deployment.
4	Provide permanent counselling and/or therapeutic support for both the military families and the rear unit command
5	Provide permanent counselling for typical child problems during a father/mother separation

Table 3. Goals of Psychosocial Support of Long Term Missions

CONCLUSION

It takes time for everybody to learn to go away, to learn to be away, and to learn to come back; not only in a physical but also in an emotional way. A new equilibrium or life rhythm can not be established instantly.

Partners and "companions in fate" should

communicate about what happened and how they felt in the operational zone with respect to their different social roles: the way of being a soldier, a partner, a husband, a father, etc... changes profoundly.

Spouses and rear unit personnel should also talk about what happened at the home front; in some cases, the partner who stays behind with a family has a more difficult mission than the soldier deployed in the mission area. Soldiers are always specially trained for their mission, families mostly are not.

However, (pragmatic) communication is a major issue for both the peacekeepers and their significant others and... they can learn it quickly! At this moment, still too much precious time is spoiled by criticising each other, being angry when (unclear) messages are misunderstood and trying to hide the deep emotional impact of a long term deployment. In choosing a job in the Army, one has the right to "complain " or to speak out about sad feelings. Being paid "For it" has nothing to do with it...

Soldiers returning from a long term deployment and their families both have a strong desire to talk about their own experiences. Recognizing the existence of recovery and readjustment processes in our loved ones and ourselves, after participation in a wartime deployment, is essential in preventing a long term psychosocial family trauma which becomes most difficult to treat.

The paradigms of the General Systems Theory and Communication Theory appear to be powerful in the further conceptualisation of innovative support activities for couples. They deliver numerous action-oriented ways to increase military couples' and/or families' competence to successfully cope with the various effects of repetitious deployments in peace operations.

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REVIEW ARTICLES

"Sorry" shouldn't be the hardest word[1]

Lieutenant Colonel Maggie Parker[2]

INTRODUCTION

HEALTH COMPLAINTS, litigation against health providers, indemnity issues and indemnity levies for health providers have received an inordinate amount of publicity recently. Daily, we are assailed by radio advertisements from various law firms of the "no win, no fee" ilk exhorting members of the public, who feel that they may have suffered some harm, either at the hands of a health provider or an employer, to visit 'Walk, Trot & Gallop" and receive a free consultation with regards to their specific problem with a view to litigation. This is a fairly facile way to put this because there is also significant evidence that many people are injured as a direct result of their contact with the health care system.[1,2] So, what happens next?

In a great many cases, the injured or aggrieved person will fume in private and then spread 'the word' about the health care provider(s) concerned. This is true of most complaints; however, more often these days, members of the public, including the armed forces, are becoming more likely to put their complaint in concrete form. Evidence has also informed us that the majority of people who have suffered an 'adverse event' have, as their prime motivation, not money but rather the need for a full explanation, an acknowledgment of what happened to them and an assurance that it won't happen to anyone else.[3,4] If the 'adverse event' has been catastrophic and has resulted in the loss of life (of a relative) or significant impairment of self or a relative, then there will also be anger and a desire for some kind of retribution.

CIVILIAN PROCESSES

Each State and Territory in Australia, with the exception of South Australia (SA), has legislation and a process in place to deal with Health Complaints. South Australia has legislation waiting in the wings, yet to be tabled, and health complaints are handled by the State Ombudsman. There is a fairly robust system of complaint resolution in many jurisdictions, and most, if not adopt the following process:

- **Complaint in Writing.** Although most areas are more than willing to talk over a complaint with a client over the telephone and can sometimes resolve it at that initial level, if there is any formalised resolution of the complaint required, legislation demands that the complaint is made in writing. Most will have forms available from a website for this activity.
- **Natural Justice.** Most areas note that natural justice is owed to the respondent as much as it is to the complainant. Accordingly, unless there is some serious reason why it cannot occur, the respondent is made aware of the fact that a complaint has been raised, who raised it, and the nature of the complaint. In some areas, this involves sending the respondent the complaint. There is usually a timeframe on this, in most cases a minimum of 14 days from receipt of the complaint but may be up to 60 days. Both the respondent and the complainant are entitled to impartial, independent, and unbiased adjudication and this is usually specified somewhere within the State or Territory legislation or charter on health complaints.
- **Direct Resolution.** Most areas note that 70-80% of complaints are resolved by this process. They offer assistance to the complainant to approach the facility/health provider and also assist with a conciliation process.
- **Referral to Registration Body.** New South Wales (NSW) has enshrined in its legislation that any complaint in writing to the Health Complaints Commission, about a health service provider who is registered/licensed, must be referred to the appropriate Registration body. Other states have the power to review the complaint and to decide whether it is of such seriousness to merit that action.
- **Limit on Complaints.** There is little difference in the timeframes involved here. Normally, complaints will only be entertained if event concerned occurred

1. Parker M. "Sorry" shouldn't be the hardest word. *Aust Mil Med 2004*: 13(1): 18-22.
2. LTCOL Maggie Parker, RAANC is the SO1 Clinical Governance in the Joint Health Support Agency.

within the previous twelve months. There are exceptions and there is ability to waiver this requirement on a case by case basis. Some areas do have an absolute cut-off. Western Australia (WA), for example, will not investigate any case which occurred prior to 1995.

- **Written Reports.** If a complaint has proceeded along formal lines, and has been investigated accordingly, the results of that investigation and recommendations of the body concerned are provided in a written report, which is given both to the complainant and to the respondent.
- **Right of Appeal.** Both the respondent and the complainant have a right to appeal the findings of the body investigating the complaint. There is always the legal option if either or both feel that they have not been treated in a fair manner.

HEALTH COMPLAINTS WITHIN THE AUSTRALIAN DEFENCE FORCE (ADF)

Health complaints are often more than a little different within the ADF. Rarely is the complaint to do with the timeliness of health care, because the need to return servicemen and women to a full deployable health status is a key driver in military health care. However, there are many complaints about the Medical Employment Category (MEC), which is assigned to service personnel, particularly if the MEC concerned means that the member is non-deployable and will be discharged from service. Other complaints, now dealt with by the Defence Recruiting Organisation, encompass appeals against outcome of Recruit Medical Procedures which may preclude individuals from a career in the military. These complaints, although ostensibly against health providers and the health system, will not be considered here, but rather the complaints which mirror those in the civilian system.

There are already several established recourses for the aggrieved serviceman and servicewoman within the ADF. Any member may make a redress of grievance (ROG), a process that goes up through the chain of command, and is referred to the Complaints Resolution Agency. There is also a new directorate within Defence for Alternative Dispute Resolution (ADR), which is often able to sort out problems before they begin to become cumbersome. Finally, there is also the Defence Ombudsman, who is often the last recourse for the complainant within the military system.

Health Directive 914[5] (currently in the throws of amendment) gives guidance for personnel in making a health complaint. This health complaint can be against an individual health care provider or a health facility. The process in this document follows the civilian process fairly closely, except that there is no attempt to take over the role of the Complaint Resolution Agency. For the purpose of this paper, the complaints covered will be limited to those within the National Support Area (NSA). It is stated categorically within this Directive that the filing of a health care complaint in no way abrogates the individual's right to the ROG process of indeed legal action. The common threads with the civilian process are as follows:

- **Resolve, if possible, at the lowest possible level.** Members are recommended, first of all, to take up their complaint with the health care provider or the health facility concerned. Obviously if the member concerned is a Private soldier (equivalent) to request him/her to "take on" an Army Captain (equivalent) Medical Officer is a big ask. For that reason, the amended health directive will advise that a patient support officer should be identified in all health facilities. This is not to be confused with a patient advocate – the patient support officer is there to facilitate contact with the health care provider or health facility, not to take on the argument.
- **Written Complaint.** Should things have progressed beyond a telephone conversation or face to face contact, or if the member does not wish to confront the health care provider, guidance is given within the HD for the writing of a complaint. Once more, a patient support officer would be able to assist in this matter. Basically, the written complaint should encompass the grievance, identify time, date and personalities, and give some idea of what outcome they would like to see. The written complaint also contains permission for release of his/her medical documents to the Area Health Service (AHS) or Joint Health Support Agency (JHSA). There is also an acknowledgment that the complaint will be sent to the health care provider /health facility named in the complaint. The written complaint is referred in the first instance to the health facility (if the complaint is about a health provider) and/or to the Area Health Service for attention of the Senior Health Officer (SHO). It should be noted that

complaints against health providers working within the operational context are referred through that chain of command to the SMO of the Formation (Navy and Air Force equivalents) and if necessary to the Operational Health Adviser of whichever Service is involved.

- **Natural Justice.** Natural justice is no less a requirement in the ADF as it is in the civilian community. As soon as possible after receipt of the complaint, the respondent is contacted and given a copy of the complaint and the complainant receives formal notification of the receipt of the complaint.
- **Referral.** If the complaint cannot be resolved at AHS level, it is forwarded onto JHSA. After a response is received from the respondent, the JHSA Health Complaint Review Committee will conduct a limited investigation, accessing information/advice from Defence Consultative Groups as required.
- **Report of Findings.** The Director JHSA will advise the complainant and respondent in writing of the Committee's finding. It is stressed that JHSA is not a complaint resolution agency but rather a resource. The Director may refer the complainant to another authority or strongly suggest that the person concerned take their complaint through the ROG process. However, sometimes just the fact that someone has listened to them, taken them seriously and came back to them with some explanation satisfies the complainant. This is particularly so when JHSA can state that some practice or policy has been altered as a result of the complaint. On another note, it is amazing how often the first a respondent knows of a complaint is when they are contacted by JHSA

US MILITARY – HEALTHCARE OMBUDSMAN – ONE STRATEGY WITH HEALTHCARE COMPLAINTS

Following a previous association with the US Navy, where she was the first counsel for the Navy's Alternative Dispute Resolution program, Carole Houk of Resolve Advisers was involved with the National Naval Medical Centre (NNMC) in Bethseda, Marlyand. This particular hospital treated not only military personnel on active duty (30% of patient load) but also congressional members, dependents, former military and retirees. In July 2001, NNMC initiated an Organisational Ombudsman/Mediator Program to address its growing medical malpractice experience. Since that date, over 200 cases have been referred to the 'Ombuds', as the role is known, all have been resolved and none involved any financial payment or filing of a legal claim.[6] The Healthcare Ombuds approach to complaint resolution is that they get involved at the first hint of a problem (may be contacted by the healthcare provider) and resolve patient health care complaints at the lowest possible level, involving a minimal level of personnel. They often are involved in what they term 'shuttle diplomacy' and also offer other forms of assistance such as coaching, conciliation etc.6 All patient concerns are tracked to closure and feedback is provided to management.

The success of this program has sponsored similar programs within hospitals in the US, both civilian and military. One such healthcare provider is Kaiser Permanente, the largest non-profit health care provider in the US (8 million members). They analysed the results of NNMC, and currently have six pilot sites in San Diego, Ohio, Northern and Southern California, Sacramento and Hawaii.

AN OUNCE OF PREVENTION

It would be foolish to suggest that all healthcare complaints can be prevented. Mistakes, both real and perceived, are going to happen, and, although they can be ameliorated by good risk management strategies and prevention techniques, I would suggest they will never be eradicated. This is supported by Weed's contention, as cited by Wilson *et al.*, that the 'unaided human mind is incapable of performing consistently at the necessary level to provide optimal healthcare'.[2] People's perceptions and expectations are also difficult to fulfil to the optimum level; however, it is interesting to note the types of complaints.

A study conducted by the Health Care Complaints Commission of NSW in 1999 found that, while 64% of complaints were to do with clinical care, which is understandable, there was also a whopping 22% that involved poor or inadequate communication.[7,8]
I recall, some ten years ago, attending a Director of Medical Services (DMS) conference at what was then the School of Army Health at Portsea (back in the days when they were actually in existence). One of the speakers was a lawyer whose role it was to represent respondents in law suits bought against them by disgruntled patients. He said that there were

some important tools that doctors (and all other health care providers for that matter) should take on board. He called them the four 'C's: Communication, Competence, Compassion, and Confidence. He went on to explain that the most important of these, in his opinion, was not competence but communication. He had defended some perfectly competent medical practitioners, who had made a single mistake, but because of arrogance, real or perceived, were sued by their patients. Conversely, he could cite cases that could well have succeeded in court; however, the practitioners in those cases had such good rapport with their patients, usually had apologised to them and made such reparation as was available to be made, that the patients did not consider legal action, even when urged to do so by friends and relatives. This same experience is cited by Levinson and co-workers, who found with primary care physicians that they were far less likely to be sued if they spent time with their patients, kept them fully informed and used candour and humour.[9]

The need for openness and honesty within the health care system has generated such initiatives as the Open Disclosure project. It was also the subject of several paragraphs in the report into the Bristol Royal Infirmary. The report comments on the frustration and anger of parents at not being able to find out information on the care of their child. It goes on to say that for respect, honesty and openness to flourish there "must be a culture of openness and honesty within the healthcare system as a whole".[10]

The contention that patients feel very strongly about being kept in the dark or, when something adverse happens, the perception that the health care industry 'battens down' and prepares to 'repel boarders', has been borne out in several studies. In one study, more than one third of the British patients involved stated that they wouldn't have proceeded to litigation had they received an apology and a full explanation.[11] Wu states that, in his experience of over 25 years of representing physicians and patients, he found that the largest percentage of patient dissatisfaction was associated with the attitude and denial of health staff rather than the negligence itself.[4]

WHAT TO DO

There are a myriad of suggested solutions to the health care complainant. These range from apology, through conciliation, alternative dispute resolution, mediation, to full-on litigation. It is the first of these that we will consider, as time and space preclude a lengthy exploration of the others. It's time to get a little biblical. Proverbs 15:1 states that "*A soft answer turneth away wrath but grievous words stir up anger*". Once more, evidence has pointed us to the finding that, more often than not, a sincere apology will go a long way to resolving a health care complaint. As has been previously stated, an apology is not regarded as an admission of liability;[4,12] however, it does depend somewhat on the quality of the apology. A half–hearted apology, which more or less blames the patient for the fact that the health care provider has to apologise at all, will most likely result in a patient even more aggrieved than before. Healthcare providers are advised to use the patient's own wording in their apology; for example, "I am sorry you felt that I did not take you fully into my confidence".[13] Sara Bird, in her article on the art of dealing with complaints, states that the response should be as prompt as possible, either verbally or in writing. If the former is the method used, a record of conversation should be kept.[13]

Several health facilities have now made it a policy that there is a duty of candour even when patients are unaware of the error, such as an unplanned event that might or might not reflect on the patient's future health. This has been carried out in various places, such as the Veterans Affairs Medical Centre in Kentucky, where errors are disclosed to patients even if they or their families were unaware that an error had occurred. This is done even if it involves error on the part of the hospital or its staff.[4]

There are obviously a small percentage of complainants for whom no amount of apologies or any other strategy will work. Professor Paul Mullen, of Monash University, identifies these complainants as 'querulants' or chronic complainants. In a recent address at Russell Offices in Canberra, he stated that these were complainants with a quest. No matter what was done to resolve their complaint, it wouldn't be enough and the goal posts would continue to shift. Their complaint normally had some basis in truth but it quickly became their whole raison d'etre, often to the detriment of their personal lives.

CONCLUSION

Health care complaints, like taxes, are one of the

certainties of life. What we can do as healthcare providers is to mitigate these complaints so that the reasons for complaints become less numerous. Risk management strategies, close call registers, and learning from previous mistakes are good mitigation strategies. This is very similar to the aviation industry, as is the need to take part in human factors training; however, unlike the aviation industry, there is a real concern with litigation given the very human desire for revenge or, at the very least, for someone to blame. Professor Bruce Barraclough puts it succinctly when he states that both the health and aviation industries involve large, complex systems reliant on highly trained personnel working in a myriad of professional relationships and utilising advanced technology. In such a situation, despite all the planning and good intentions, mistakes happen.[14]

Complaints against health care providers can be taken extremely personally, and with good reason. It is natural for the health care provider to feel aggrieved, hurt and embarrassed; particularly if, in their opinion, they have done the very best that they can. It requires a walk in the patient's shoes. What were their expectations? Were they realistic – were they explained? Sometimes a simple apology, which in no way becomes an admission of liability, helps to soothe the patient's fears. If indeed an error has occurred, the sooner it can be addressed the better. In this case, it is fair that a free and frank discussion with the patient takes place; research has told us that they want an explanation, they want an apology, and they don't want this to happen to anyone else. If that can be encompassed, then the winner is the health care system as a whole. Above all, all of us in the health care industry need to learn from mistakes, to address loopholes and to ensure that the care that we give to our patients is the very best available.

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A View From The Front

East Timor – Personal Reflections[1]

Dr Roger K. A. Allen [2]

ABSTRACT

The author, who was a Lieutenant Colonel in the Royal Australian Medical Corps (RAAMC) Reserve, and is a Thoracic and Sleep Physician in civilian life, describes his experience of a tour of duty to East Timor with the UN Military Hospital, Dili, East Timor under UNTAET (the United Nations Temporary Administration in East Timor) from May to June 2000. This was his first time on Active Service overseas. He describes his difficulties in preparation prior to deployment, his experience of East Timor and his re-adjustment to civilian life.

Key words: Military Physician, Australian Army, United Nations Temporary Administration in East Timor (UNTAET)

INTRODUCTION

St Andrew's War Memorial Hospital is a private hospital in Brisbane City where I consult and is the only war memorial hospital in Brisbane. It is dedicated to the memory of the 59,342 Australian soldiers killed and 152,171 Australian soldiers wounded in the First World War, all volunteers from a population of about 5 million people; a tragic national loss far greater than that of the U.S.A. in Vietnam. Australia had the highest proportion of casualties to soldiers in the field of any in the British Empire (64.8%)[1] and was the only all volunteer army in the Great War. "St Andrew's" is also a living memorial to those Australian Service Men and Women of the Second World War and subsequent conflicts. It was in this context that I present my personnel experience, which followed that of colleagues who work at this hospital and of those Medical Officers who have served in our Armed Forces in the past. Such experiences should be recorded for subsequent generations to remind them of the cost of peace.

My tour of duty in East Timor followed six months after that of Lieutenant Colonel Lindsay McDowell General Practitioner of the St Andrew's Priority Emergency Centre who served with INTERFET in the first troubled weeks of September 1999. Following Lindsay's seven weeks in Dili with 1 JSU (1st Joint Support Unit) during Operation Warden, I was deployed in early May 2000 during Operation Tanager (Australian Defence Force) at the UN Military Hospital, Dili under UNTAET (United Nations Temporary Administration in East Timor). I wore the blue beret of a UN "Peace Keeper" (Resolution 1272).

I was commissioned Captain on 2nd March 1988 and had initially served in the Army Reserve from 1987 with the 2nd Field Hospital, Brisbane (now 2nd Health Support Battalion or 2 HSB). Its roots date to the beaches of Gallipoli in April 1915 when it began as the 1st Australian Casualty Clearing Station (1ACCS) and later was called the 2nd Australian Field Hospital[2]. As a civilian, I was a Thoracic and Sleep Physician but had done a lot of intensive care work over the past twenty years.

PREPARATION

Between my clinical work, I had frequent visits to the Gallipoli Barracks, Enoggera, for uniforms and equipment, the obligatory mountain of paperwork, wills, a power of attorney, insurance, vaccinations, arranging spare pairs of spectacles and sunglasses, obtaining records of recent optical prescriptions, giving blood samples for DNA storage, and dental checks. The Army has its own strange ways of doing things. Although I had been in the Army Reserve for years, I often felt lost and frustrated in this world of seemingly endless mazes, new contacts and dead-ends. I found the process of preparation costly in time and money as I was in full-time private practice. The gulf between the Reserve and the Regular Army that I was soon to join was wide and full of impediments.

1. Allen Roger K.A. East Timor – Personal Reflections. *Aust Mil Med 2004*:13(1); 23-29.
2. Dr Roger K.A. Allen is a Consultant Thoracic and Sleep Physician and a Clinical Associate Professor at the University of Queensland. He has recently resigned as a Lieutenant Colonal in the Army Specialist Reserve.

I waited for six months to do weapons training course in the F88 Austeyr as I had originally trained with the SLR. For months, no one could tell me if I would only need a pistol or, for that matter, any weapon at all but at the last minute, I spent my week of Easter holidays set aside for time with my family before deploying, doing a weapons training course. Each day, I drove two hundred kilometres from the north coast, much to my chagrin. It did not go down well at home. On Saturday 30th April 2000, arrived in Darwin wearing a military uniform, having been a sudden metamorphosed like Alice through a looking glass, into a different world.

DARWIN

In Darwin, which was steamy even by Brisbane standards, I met the new team members in an awaiting coach which took us to the Robertson Barracks on the city outskirts. This was our home for a week of preparation with yet more paperwork, lectures, briefings, quarantine, cultural and history lessons, security checks and instructions on the current rules of engagement (ROE's) with the Militia and Indonesians. With uniforms soaked in a trailer full of a milky-white solution of pyrethrum, we commenced doxycycline anti-malarial prophylaxis. I had already had seventeen inoculations in Brisbane including three lots of Japanese Encephalitis Virus. After a range practice, my second with the Steyr, and weapons proficiency test (TOET's), we were ready for the adventure in East Timor.

A large impressively sleek navy-grey catamaran, the HMAS Jervis Bay, lay at anchor at the Darwin Naval Wharf. Into its gaping open mouth with its to the reverberation of engine noise and the smell of diesel, salt and bilge water, we lugged our backpacks, bum bags, Steyrs and kit bags only to be greeted by clean airline seats arranged in rows more like a cinema than a troopship. At midday, the wharf faded silently into the distance as we sailed effortlessly at 40 knots for Dili, twelve hours sailing to the north of the island of Timor. I noticed that the ship could take 400 hundred troops was nearly empty as we sipped hot tea, coffee and ate fruitcake served at the bar at the back of the 'cinema' by a bearded seaman in dark blue and smelling of oil and tobacco.

DILI

Late that night, distant lights appeared on the port side; the Timor coast. Thoughts went through my mind of the carnage that had taken place there over the past 25 years[2]. Captain Cook too had seen distant lights of fires along the same coast the first night he sighted Timor on his ship's ill-fated return from New Holland[3]. Even then, this mountainous, crocodile-shaped island had been a Portuguese colony since the early 1500's with elegant lateen-rigged caravels laden with spices and coffee, plying the trade winds between Timor, Macau, Goa and Europe while the barren north of Australia was largely ignored.

We arrived at an oppressively humid Dili Wharf after midnight. Two Australian soldiers with two white UN Land Rovers awaited us on the wharf of floodlights and dust stirred up by forklifts noisily unloading with stop-start jerks, food, matériel and tonnes of bottled water. Tired and disorientated, we passed dark streets with row upon row of gutted buildings until we reached the UN Military Hospital, which we found out in the morning was the former Dili museum and not far from the airport.

UN MILITARY HOSPITAL, DILI

Around 0100, we were shown to our six man tent at the front of the Hospital, set up our mozzie domes to the familiar "chit-chit" sound of geckoes I knew from Brisbane, and collapsed onto squeaky, narrow stretchers. Well before dawn, at around 0400, I was aroused by the biblical crowing of local cocks, the pride of many a Timorese man who usually carried them under their arms like prized poodles. The main museum buildings had been converted into wards, accommodation, administration and field kitchen while the wards mostly under canvas or in Trelenbergs.

The heat and humidity were almost palpable. It was thick, invisible and enervating and made even more unpleasant courtesy of woollen socks, boots, long trousers, long sleeves down, especially after dark, and enhanced by the ever-present smell of insect repellent and sweat. Even coming from Brisbane, I still felt perpetually wet and languid. The notion of "going troppo" took on a new meaning. Everything took longer to do. The brain slowed down. The hectic pace of life of my private practice seemed a world away.

THE TEAM

Our medical team consisted of an anaesthetist, Group Captain Roger Capps; an orthopaedic surgeon, Wing

Commander Gordon Morrison; a tropical disease and public health expert, Colonel Peter Warfe; and a general surgeon, Major Ken Hodby. I was the Intensivist and we came from Adelaide, Perth, Canberra and Brisbane. Although most of us had never met before, we soon enjoyed a great sense of camaraderie and humour. The first three veterans had served in Rwanda and Ken had just come from Bougainville. I was the novice. A young Regular Naval Lieutenant, Dr Andrew Davidson was our "registrar" who very ably ran the medical ward.

A challenge I faced in the intensive care unit was the timing of aero-medical evacuations to Darwin. Military aircraft do not run like the Swiss Railways and considerable planning and educated guess-work was needed. If you got it wrong and a casualty died before evacuation, you might expect a "ministerial" from Canberra and with the UN, the possibility of a political dimension to the incident. Evacuate too soon and you looked like dill to those in Darwin, as you had wasted a precious air resource and unnecessarily evacuated a soldier from an undermanned unit. I had to rely on sound clinical judgement, a sixth sense and sometimes flying by the seat of my pants, as there was no fresh frozen plasma, platelets and other niceties of "the big smoke". This was particularly important with the then plethora of haemorrhagic dengue and combined vivax and falciparum malaria, accidents from death-defying "bongo vans", rooftops laden with Timorese, and the odd gunshot or grenade injury.

"COMS" (COMMUNICATIONS)

Because of the Telstra satellite link, I rang home almost daily. A few times I was rung about patients by nurses from St Andrew's Hospital unaware that I was away and once by the school wanting me to return some note. This produced in me a surreal feeling which was further compounded by the Internet. One day, I emailed an American cardiologist in Manhattan about an American UN civilian who had become my patient. Nevertheless, e-mail, the hospital's website and the mobile phone kept my wife and children in close contact. Separation became more bearable.

DISEASES

Dengue and malaria were the main diseases we treated. Malaria was frequently caused by both vivax and falciparum in the one patient and there had already been some deaths in soldiers from malaria. Dengue, including the haemorrhagic type was rife with up to over eighty cases treated before I had arrived. As well as a treating a range of tropical diseases, I diagnosed sleep apnoea, hypertension, pneumocystic pneumonia due to hitherto undiagnosed AIDS and many patients respiratory tract infections. I treated with the aid of the others, gunshot wounds, grenade injuries, sustained ventricular tachycardia, atrial fibrillation, heat stress and hyperthermia, and range of conditions rarely seen in Australia.

The Australian Army in East Timor had experienced an almost identical medical casualty profile of that suffered by my uncle's 2/3rd Field Regiment, 6th Division in New Guinea in 1945 with malaria, dengue and skin diseases vastly outnumbering battle trauma[5]. As in every military campaign since Napoleon and before, medical casualties out-numbered surgical battle casualties many fold. General practitioners and physicians were in their element, a lesson lost on each successive wave of military medical bureaucrats from then to now. Napoleon's Grand Army was destroyed not only by the pursuing Russians, nor by Old Man Winter, but also by typhus. Our patients were mainly UN military personnel, UN civilians and some East Timorese including Falantil guerrillas but I never saw any Militia.

THE STAFF

The Intensive Care Unit, which was three-bed in a small modular shipping container like the operating theatre. We frequently had patients in ICU with severe malaria treated with intravenous Quinine, which by virtue necessitated monitored beds. The nursing staff, mostly Reserve Officers, mostly women, upheld the proud tradition of their Corps with competence and kindness to their patients and colleagues. Many had been away from loved ones including young children for nearly six months and had already served with distinction in Rwanda.

We were confined to a few hundred square yards of the hospital, surrounded by a razor-wire fence guarded day and night by Portuguese UN soldiers armed with automatic weapons. A contingent of Egyptian doctors and medical personnel, all male, made up the other half of the hospital while triage and "re-suss" was shared by us and some Singaporeans. Because of cultural and linguistic barriers, the Egyptians led a fairly separate existence to us. They

ate their different meals at separate times and their quarters were not under canvas but in a large building at the back of the compound, which had been part of the museum. Armed with an Arabic phrase book, I set out to learn something of their language, script, customs and food and made friends with some of them. I was surprised how easily this broke down some well-entrenched misunderstanding that had existed before I arrived. Despite this and often the best of intentions from both sides, there continued to be major problems with medical sub-unit integration with the Egyptians.

A TRIP TO OCUSSI

One day our laconic Commanding Officer, Wing Commander Peter Clarke, interrupted the endemic boredom, by asking me to fly at short notice with some Nursing Officers to Ocussi, the enclave in West Timor, to pick up some civilian casualties. I was met at the front of the hospital by an UN ambulance in which sat two RAAF Nursing Officers I knew. The air was stifling. In the windowless heat of the ambulance, they wore Kevlar flak jackets and helmets and, as for all such retrievals, we took webbing, bum bag, a ration pack, rifle and ammunition.

We avoided Indonesian airspace by flying out to sea where occasionally I spotted a pod of whales off the deep ocean trench. Ocussi, an hour's flight away had mountainous spurs extending right down to the sea and with very little habitable coastal plain. A few days before, we had evacuated a Timorese woman who had a 10kg mass, the size of a bowling ball, which had been present on her neck for 25 years. It turned out to be a benign pleomorphic, salivary adenoma when our surgeons and anaesthetist together skilfully separated the poor soul from her miserable burden. It was a major operation, and a challenge for all and would not have been possible had we not been there. On our return, an Army ambulance awaited us at the Komoro airfield where Hercules and Caribou taxied endlessly amidst deafening noise while dark-green airfield tents with sandbags cowered beneath camouflage nets and fine red dust.

MONOTONY

Monotony was a large problem[6]. Mail was infrequent, weeks old but keenly sought each day. Trevor the Traction Engine, a treasure of my three year old son, was unwrapped and sat on my "dresser", cardboard carton sitting side on, next to my stretcher. He eventually returned home to the delight of his young master. Mum's fruit cake was an unexpected treat. I am sure it must have reminded her of the War when she cooked such "indestructibles" for her brothers on Active Service. My wife, Linda, sent two generous boxes of "goodies" I shared around, as our taste buds craved any deviation from ADF doctrine. I felt sorry for our cooks who laboured from cock's crow until late at night in the humidity of the steam and fatty fumes of the field kitchen.

The quality of the rations had deteriorated after INTERFET pulled out. The UN seem to tender to the lowest bidder. Australian orange juice became sour German grape-fruit juice. The fruit deteriorated in quality and bottled water which had come from Darwin became Indonesian. On one occasion, the coliform count was so high that tonnes of pallets of bottled water had to be discarded. Ironically for a few weeks after, we were put on water restrictions of 2.5 litres of bottled water per day per person; a challenge for any healthy tropical nephron. Not long after RAAF personnel received an order from Canberra on the new "official" way to lace up boots. Fortunately this innovation was impossible with my new Army boots.

In the late afternoon, when it became a little cooler, really a euphemism, we were unleashed in groups in PT gear and rifle, much to the mirth of the local children, for a pleasant stroll or jog of eight kilometres around the dusty Komoro Airfield, a few "clicks" west down the main road. As a special treat, we sometimes swam in the surf off the beach of coarse sand and large black volcanic pebbles at the end of the airfield. One of us always stood on lookout with our rifle ready for sharks or crocodiles and aware of the treacherous rip which swept west along the coast. On a clear day, from this peaceful paradise of coconut palms, surf, and sand, distant mountainous islands loomed and disappeared like grey ghosts through the sea haze.

The offer of a trip to town to the Australian Army Frontline Store, a modern "PX" of World War Two days, was never knocked back. Just to get out of the compound was a relief. We bought soft drinks and ice-blocks from home like kids on an illicit outing to the lolly shop to cash in some soft-drink bottles. Each time I was driven into Dili, I felt the bad "karma"; the atrocities, the hate, the intimidation, burning,

pillaging and worse[7,8]. Block by block... it had been systematically destroyed leaving gutted shells of buildings, rubbish, and burnt, twisted rusting galvanised-iron sheeting which some brave souls had in some places transformed into roadside stalls and shanty huts. The city's infrastructure had been destroyed; electricity, water, banking, postal services - everything we took for granted. The only service station had been "trashed" and people made do by selling small but dangerous plastic containers of petrol by the roadside from their humpies and stalls.

THE EAST TIMORESE

The people looked surprisingly happy to be free. Perhaps it was wishful thinking on my behalf; a sort of projection to help me cope with the awfulness of it all. They had begun the slow rebuilding of their shattered society. I felt as an Australian that we and not just Indonesians shared in the guilt of what had happened over the past twenty-five years[7]. We were not the knights in shining armour we thought many thought we were. We had come too late. They impressed me with their graciousness, long-suffering, and charm. They were a proud but humble; God-fearing with a respect for their elders, families and ancestors. Collectively, they reminded me of the nature of Nelson Mandela. We had much to learn. Perhaps I was idealising them.

THE ORPHANAGE

Our hospital had supported an orphanage, which I also visited regularly with others to provide English lessons, material support and medical assistance to the children and nuns. I was once asked to see a young nun who lay on her low wooden bunk in a bare room with a clean white tiled floor so often seen in Timor. She was burning up. There was not even a paracetamol in the house. I gave the nuns a card of them I carried in my breast pocket and arranged admission to the UN Hospital. It was, I thought; dengue.

I always felt too big and awkward wearing boots, camouflage uniform, Steyr and stethoscope amongst diminutive nuns and shy little children... a bit like Alice after the potion that made her too big. The children were mostly six year olds but no bigger than my three year old. I wondered about their future mental health...

One East Timorese interpreter attached to us supported his family, brother and his children on his salary of $6 US a day. He was hoping to study at a university somewhere one day. He was relieved be among the lucky few who were employed, The brand new, white UN four wheel drives vehicles driven hither and thither by UN civilians stood in stark contract like their colour, to the deplorable conditions of locals. UN civilians from all corners of the globe who ventured every morning form their quarters in the multi-storied air-conditioned "love-boat" in Dili harbour were, in general, resented by the Timorese unlike other agencies like the ICRC (Red Cross) and Médecins Sans Frontières. Not much money was sticking locally and most was going back overseas as wages.

THE ICRC HOSPITAL

Hurtling along the poor Rafferty's rules roads around Dili and environs were numerous dilapidated "bongo vans" (mini-vans) which acted as taxis and which often had dozens of people both inside and out, including many two or three deep in the front seat and up to a dozen on the roof. Traffic accidents were a frequent source of work for the Red Cross (ICRC) Hospital in Dili. I visited the Hospital on several occasions and befriended the doctors who worked there; mainly young European doctors and one young Australian anaesthetist from Brisbane, Dr Lisa Bennett, who worked tirelessly under trying conditions. She was doing over a dozen operations a day. On one of my visits, she told me that they had only a few ampoules of morphine left for several hundred patients including children with the all too common kerosene burns from stoves. I was appalled to see things I had only seen in textbooks like a poor young boy with paraplegia from spinal tuberculosis.

EXTRACTION

"Extraction" time eventually came. All our equipment had to be steam cleaned before leaving and run the gauntlet of the Australian Quarantine Inspection Service, who went through everything with a fine tooth comb looking particularly for grass seeds. After we had handed in our weapons and ammunition, I felt strangely uneasy without them for a few days. At Komoro Airport, a UN Hercules awaited us. Darwin appeared below an hour and a half later. On walking onto the hot glary tarmac of the Darwin Airfield, I felt a strange sense of relief and of letting my guard down. I felt like kissing the ground like I had seen the Pope

do. It was not that I had been in any terrible danger but things just felt different here. On arrival at the RAAF base, we were each given a room in the mostly deserted Officers' Quarters. It was early Saturday afternoon. I opened up the masonite door, and the louvres of my stuffy room, unpacked my some kit, ran a hot bath and lay there submerged in thought until my toes went wrinkly and the water went cold.

A few of us, who had to wait for flights the next day, went into Darwin for a seafood meal at the wharf. By good fortune, the assistance of a very obliging Captain from 6RAR and about four hours of phone calls to several head quarters across Australia, I managed to secure passage on a charter flight which had been arranged already for some from 6RAR going home to Brisbane on leave. We took off at 0200 on Sunday morning, a day before I was due to leave officially.

I stared out the aircraft window into the darkness of the night sky, my thoughts full of what I had experienced and of my wife and children still asleep back home. Two fixed bright lights appeared in the east. At first I thought it was another plane. But I knew them...Jupiter and Saturn, in the dark eastern sky. We were on a south-eastly heading for Brisbane.

HOME

We touched down on a cold, winter's morning, at 0600 on 4th June, a shock after the tropics. It was the coldest winter on record for Brisbane. I was later to find the short days and bleak light hard to adjust to; perhaps a mild dose of seasonal affective disorder?

On disembarkation from the plane, the weary young men in DPCU's from 6RAR were hugged and kissed by girlfriends and wives. I looked around... no-one. I went downstairs to collect my gear from the carousel along with the hundreds of others and waited out front in the cold. My jumper was my kitbag somewhere. By then, there were about a dozen of us standing forlornly near the taxi rank. One perceptive young soldier was heard to say to his mate as he passed by us with his girl-friend arm in arm, "Oh, those blokes are the married men!" Linda had the children to attend to before leaving and was a little late. I was met by my tired but relieved wife who gave me a big hug and a kiss. I was in one piece. I unloaded the trolley of its generous pile of webbing and kit into the back of the van and she drove me home, a little lost for words. We were glad to be together again on a cold, Sunday Brisbane morning. Life as a couple had begun again.

EPILOGUE

On returning from five weeks away and a total of seven weeks from my practice, I suffered from some culture and climate shock as well as the effects of two weeks of post-deployment malaria and worming prophylaxis. I had a good dose of the "blues" which also affected others too. It took me about three months before I felt normal. I had underestimated the cultural, social, environmental and emotional impact of even a brief stay of five weeks.

United Nations deployments may be even more stress-inducing because of the counter-intuitive Rules of Engagement, which set up the perfect climate for post- traumatic stress disorder[9,10]. I had no post-deployment debriefing or follow-up by the ADF. As I continued to lose weight and had seen a lot of patients with tuberculosis in Timor, I arranged my own chest x-ray as well as my own malaria screen and dengue serology to see if I had seroconverted. I had disappeared back into the anonymity of civilian life.

Not long after my return, I was followed by Major Peter Lavercombe, Intensivist at St. Andrew's who went to East Timor also as an Intensivist having been "invited "only last year to join the Army Reserve because of ICU skills were in short supply. Flight Lieutenant Andrew Bryant, visiting Gastro-enterologist at St Andrew's, served for five weeks with our peace-keeping force in Bougainville in December 2000.

I came back 6kg lighter and nearly a year later, had not regained that weight and was $40,000 lighter in my back pocket. My wife, Linda, a psychiatrist, had just started some sessional work, was caring for our three children including a daughter aged 15 months, a son aged three, who missed me terribly, and a daughter aged 9. She found my absence a strain especially as she still had to run my affairs of my quiescent practice. This was compounded by the Army's failure to pay me the vital private practice allowance and salary even months after my return despite reassurance to the contrary. I had even used up my long service leave and holiday leave at the Redcliffe Hospital to help pay for the deployment.

I feel proud to have been part of this team and to have contributed to the military traditions of the St Andrew's War Memorial Hospital, the Royal Australian

Army Medical Corps and the Australian Defence Force. I believe that we should support not only those who are on medical deployment but also their families. Unfortunately, Specialist Reserve Medical Officers often operate independently from the Regular Army, all too often in a vacuum and without the support of a unit. The largest cost is still borne by our families. More can be done. I resigned my commission on 21 March 2003 after long-standing disillusionment about the current lack of support of Reserve Specialists in ADF Health and also because of Australia's invasion of Iraq without the mandate of the United Nations. I dedicate this paper to my wife, Linda and my seven children.

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TEN YEARS ON

The Military Wisdom Tooth[1]

C.J.R. McGrath, K.H. Dawson[2]

INTRODUCTION

THE PRACTICE OF MILITARY DENTISTRY is unique. Military dentists are trained in aspects of military medicine, operational health support, emergency triage and military administration. The peacetime responsibility of the armed forces is the preparation for war. In wartime, the primary role of the dental service is the conservation of manpower by the avoidance of unnecessary evacuation of the dentally sick[1]. This is accomplished by prompt and appropriate therapeutic treatment and, more significantly, by the implementation of preventive programmes and the promotion of healthy behaviour.

In keeping with the concept of preventive dental care, the question of whether or not to remove impacted mandibular third molars prophylactically remains hotly debated. In the civilian population, many practitioners advocate removing these teeth only if symptomatic or pathological. The indications for treatment in the military setting are quite different due to the nature of military service and the need for personnel to be medically and dentally fit at all times. This paper discusses the management of impacted third molar teeth from a military perspective, and proposes a treatment protocol for the management of these teeth in the Australian Defence Force.

DISCUSSION

The mandibular third molar is the most commonly impacted tooth in the adult dentition. With the decline of dental caries due to water fluoridation, the incidence of these impactions is increasing[2]. The mandibular third molar is located posteriorly in the mouth, between the second molar tooth and the ascending ramus of the mandible. The pericoronal tissues are rendered extremely susceptible to infection due to only partial eruption of the tooth and the relative difficulty of cleaning at the back of the mouth. Anatomically, the third molar is related to the buccal and sub-masseteric spaces laterally, the sub-mandibular space inferiorly, and the sub-lingual, pterygoid and lateral pharyngeal spaces medially. Extension of infection into these tissue spaces is responsible for its serious nature and its potential threat to life. Aetiological factors associated with the development of pericoronitis include age, emotional stress, smoking, chronic fatigue, general debilitating illness, poor oral hygiene and respiratory tract infections[3].

Most commonly minor infection presents as swelling of the soft tissues covering the tooth. This swelling results in physical impingement by the opposing maxillary third molar leading to an increase in swelling and pain and yet greater mechanical trauma. Signs and symptoms include pain, trismus, sub-mandibular lymphadenopathy and halitosis. In more severe cases there is pyrexia, obvious facial swelling and dysphagia. Extension of infection into the sub-mandibular, sub-lingual and lateral pharyngeal spaces may lead rapidly to airway compromise and asphyxia. When admission to hospital for odontogenic infection is required, mean hospital stays have been reported in the range of four[4] to nine[5] days.

In civilian practice approximately 25 to 30 percent of wisdom tooth removals are for pericoronitis[6]. Other common indications include dental caries, root resorption, periodontal disease, orthodontia, cyst formation and for the relief of less clearly defined jaw pains. The presence of unerupted third molars reduces the cross-sectional area of the mandible and increases the likelihood of fracture following trauma.

Morbidity associated third molar removal is relatively high in the short term. Principal complaints are of pain and swelling and peak in the first two postoperative days. Alveolar osteitis (dry socket) is a painful condition

1. McGrath CJR, Dawson KH. The military wisdom tooth. *Aust Mil Med 1994*; 3(1): 7-9.
2. Flight-Lieutenant Chris McGrath RAAF graduated in dentistry at the University of Melbourne in 1988. At the time of this article, his most recent posting was as a Dental Officer at No. 6 RAAF Hospital.
   Major Ken Dawson RAADC is a specialist oral and maxillofacial surgeon who was on the faculty of the Department of Oral and Maxillofacial Surgery at the University of Washington at the time of this article. An Army Reserve officer, his most recent appointment had been as Officer Commanding 3 Field Dental Unit in Melbourne.

often experienced after the removal of mandibular third molars. It is more common in patients over the age of 25 years[7] and those with a history of pericoronitis[8]. The most frequently observed long term complications are those associated with damage to the inferior alveolar and lingual nerves which supply sensation to the lower lip and tongue. Long term sensory deficits are seen in approximately 0.9 percent of inferior alveolar and 0.6 percent of lingual nerves[9]. The frequency of neural injury has been demonstrated to reduce with the experience of the surgeon[10].

Following the surgical removal of impacted wisdom teeth, the healing of periodontal defects about the root of the second molar tooth is significantly better in the younger patient[11].

Why are third molar teeth important in the military environment? A recent study found that 77.3 percent of Australian Regular Army recruits had third molars present[12]. The mean age of the ADF is under 30 years and thus in the prime range for infections associated with their wisdom teeth. In the course of training, but more particularly operations, soldiers are prone to emotional stress, chronic fatigue, poor nutrition, poor oral hygiene and other illnesses, all of which are aetiological factors in the development of pericoronal infections. Thus a significant portion of our patient population is at increased risk of pericoronitis.

The management of significant facial infections is the province of the oral and maxillofacial surgeon and within neither the scope of expertise of the general dental officer nor the facilities of the field (or base) dental unit. The need for both surgeon and hospital facilities would under operational conditions demand evacuation to a Level 4 medical facility. The soldier could expect to be away from his Unit and normal duties for approximately 14 days. The logistical difficulties are yet greater for a seaman on a surface ship or submarine.

The concept of conservation of manpower by preventive means dictates that impacted wisdom teeth should be identified early and removed before complications arise.

What are the advantages to the ADF of the prophylactic removal of impacted third molars during initial training?

- Conservation of manpower. If properly integrated into basic training, or before the commencement of specialist training, loss of skilled personnel to this preventable disease can be eliminated. Minor rearrangement of training programmes and the performance of surgical procedures late in the week should reduce lost training time to negligible levels.
- Prevention of complications. Surgery carried out by specialist surgeons under controlled conditions in suitable facilities minimises the incidence of complications. Performance under less than ideal conditions of what should have been elective procedures or the failure to address the periodontal considerations associated with impacted wisdom teeth may expose the ADF to legal liability at a later time.
- Training of dental officers. Concentration of oral and maxillofacial surgical activity offers the opportunity to increase the surgical skills of dental officers posted to these Units. Expertise is better acquired under direct specialist supervision than by experience as an emergency in the field.
- Effective utilisation of specialist manpower. The ADF has recently and is currently training a number of oral and maxillofacial surgeons. Concentration of basic oral surgical services would both facilitate effective utilization of these officers and also aid dissemination of their knowledge and skills.

The potential disadvantages of the routine prophylactic removal of impacted third molars soon after enlistment are twofold.

- Loss of training time. This should be minimal and acceptable if health care is viewed as integral rather than an impediment to the basic training course and the programmes are minimally reorganised on the lines discussed previously.
- Performance of unnecessary surgery. Not all impacted third molars will become symptomatic and despite the use of highly developed assessment skill on the part of the clinicians involved, "unnecessary" surgery will undoubtedly be performed[13].

CONCLUSIONS & RECOMMENDATIONS

The Defence force is an organisation quite unlike any other in our society. It is comprised largely of healthy, young men and women who are called upon at short notice to perform at their best, for long periods of time, often under very adverse conditions. Failure to

perform may result in the injury or death of their colleagues. It is the responsibility of the ADF in peacetime to prepare for war by preparing its members to perform under frequently adverse operational conditions. The prevention of illness is as vital to the reliability of the force as is any other aspect of military training.

The authors propose that all recruits or equivalent have a screening panoramic radiograph of the jaws performed both for diagnostic and forensic purposes. Any recruit who has a history, signs or symptoms of pericoronitis or who has pathological changes about a third molar tooth should have this tooth removed. Partially erupted or third molars not radiographically completely covered by bone are very susceptible to the development of acute pericoronitis and should be removed prophylactically.

The appropriate time for the routine surgical management of impacted teeth is during at the conclusion of basic training when the soldiers' skills are low and posted Unit routine will not be disrupted. In the presence of the will to do so, basic training courses and the routines of the supporting Dental Units can and should be altered to reduce lost training time to negligible levels.

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BOOK REVIEW

Faces of Battle: A Health Perspective

Reviewed by CMDR Neil Westphalen RAN[1]

TWO RECENT AUSTRALIAN BOOKS offer insights into the past, present and future nature of the human element in war. It is suggested that both books are highly relevant to ADF health staff, particularly with respect to understanding their role in providing health services in such circumstances.

THE HUMAN FACE OF WARFARE

Following national service in the Rhodesian Army, Dr Michael Evans graduated in history and war studies from universities in the United Kingdom, Rhodesia, and Western Australia, before becoming a senior research fellow at the Land Warfare Centre at Duntroon. Co-editor Dr Alan Ryan served in the Australian Army Reserve from 1981 to 1994, before becoming senior lecturer in history, politics and law at the University of Notre Dame Australia via a Law/Arts degree from Melbourne University.

Their book *The Human Face of Warfare*[1] contains essays from various Australian and overseas experts who presented various topics at an inaugural international conference held at the National Conference Centre in Canberra in March 1999.

The introduction by Roger Spiller sets the scene by referring to tensions between the 'technocentric' and 'human' conceptions of war; in particular, the belief that democratic societies are driven to technical military solutions in order to achieve 'near-bloodless' wars, because they are too fragile to withstand any other than the most benign military action. Certainly, examples such as the Falklands, Grenada, the first Gulf War, Haiti, Panama, the Balkans and Somalia suggest that waging war in this manner is feasible. It is suggested, however, that these are outweighed by the larger number of civil wars and other conflicts since 1945 where the human element was pivotal. It also remains unclear which approach may ultimately prove more successful during current operations in Iraq and Yugoslavia. From a health perspective, it is suggested that the main implications of Spiller's thesis relate to the need for high standards of casualty care (in support of his premise) and to query whether military health services should be structured to manage large numbers of enemy casualties as well as their own.

The chapter by David Grossman, on the psychology and physiology of close combat, covers ground addressed 20 years ago by John Ellis in his *Sharp End of War*[2]. Grossman suggests that the physiological and psychological responses to close combat, combined with the need to overcome the innate resistance to killing other human beings, come at a price which manifests itself as PTSD. It is suggested, however, that his thesis is incomplete: not all people who are exposed to close combat (or home invasion, or other forms of civilian assault) get PTSD; furthermore many (perhaps even most) PTSD cases have not in fact been exposed to close combat. Grossman's view therefore seems somewhat superficial compared to Ben Shephard's *War of Nerves*[3], even without having 473 pages to develop his thesis.

Steven Tetlow discusses the incorporation of human factors into computer combat simulation, something most parents with teenage males and a home computer would be familiar. It is suggested, however, that the applicability of Tetlow's models to 'real-world' decision-making should be approached with considerable caution: getting shot playing 'Desert Storm' on a X-Box is perhaps not quite the same as the real thing, especially when it usually takes more than a dinky medical pack and a 'ripping band-aid' sound effect to return wounded SF grunts to full combat fitness.

Evans discusses two war heroes: Australia's Albert Jacka from WWI, and the US's Audie Murphy from WWII. Apart from the opportunity to eulogise the significant wartime efforts of both men (and to mourn their unfortunate post-war lives), it is not entirely clear what Evans achieves, other that to suggest that there are rare individuals who, contrary to Grossman's thesis, actually function better in combat conditions than in peacetime.

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Hugh Smith takes Spiller further in discussing the 'bearable cost of conflict', by suggesting that democratic societies have lost the willingness to sustain heavy casualties. He notes that the media in particular are much better at tracing the fortunes of an individual than to explain why his or her life should be risked. He also notes how the Revolution in Medical Military Affairs has led to lives being saved that otherwise would have been lost in previous conflicts, perhaps facilitating unrealistic expectations regarding casualty care in austere combat environments. Other factors include the nature of the national interests at stake, demographics (ie falling birth rates), and other socio-economic, racial, and gender considerations. He goes on to state that the use of PGMs and lack of reference to peacetime casualty rates supports a public belief that wars can be now fought and won with few casualties (on both sides).

It is suggested that Smith's thesis has been undergoing ongoing testing since the World Trade Centre attack on 11 September 2001; as such, time will tell. However, evidence from the mass aerial bombing attacks of WWII suggests that civilian populations – democratic and otherwise – can become inured to large scale civilian casualties. In such cases, the same may apply to their uniformed citizens (especially non-conscript ones). It is therefore suggested that Smith's thesis may be considered a contemporary and somewhat more sophisticated version of a view held prior to WWI, of war as a 'rite of passage' for nations and a way of 'hardening' their component societies. Subsequent events suggest that this premise remains somewhat flawed.

Peter Warfe, who is well known to AMMA members, discussed PTSD and lessons learned from the ADF's operations in Rwanda in 1995, and the Norwegian UN forces in Lebanon from 1978 to 1980. He provides a graphic description of the events surrounding the Kibeho massacre in April 1995, and how the ADF contingent's planning, presence, military discipline and compassion saved hundreds of lives, albeit at the cost of subsequent difficulties faced by some ex-contingent members since. In this, Evans refers to the terrible paradox of armed peacekeepers being unable to prevent the killing of unarmed civilians.

It is suggested that both Warfe and Evans are correct in stating that peacekeeping can be harder than unrestrained combat operations, but a key consideration remains the political and command decisions that exposed ADF personnel to such situations in the first place (ie replicating Spiller's and Smith's arguments): if something needs doing, it should be done properly, and it should be worth the cost in Australian lives. Although saving Rwandan lives was worthwhile, it is arguable whether the cost was more than it should have been because of UN-inspired constraints.

Warfe also refers to the need to identify those people most at risk of PTSD, for aggressive prevention programs, and for comprehensive follow-up. He notes that about 20% of the 311 ADF members who deployed to Rwanda indicated that they were suffering 'distress', but adds that this was not more than in a 'general Army sample'. Being a tri-service contingent, however, it would be interesting to know if the incidence of 'distress' (however defined) is/was higher within its various sub-components. It is suggested that higher rates of PTSD in the smaller sub-components compared to the larger ones (if present) has important implications for future deployed health units. It is also suggested that, notwithstanding the effort expended on the issues identified by Warfe in recent years, the evidence-based validity thereof remains unclear.

Paddy Griffith suggests that the 'empty battlefield' is likely to create more challenges for maintaining leadership and morale, in the context where a target seen is a target destroyed, generally by a weapon that in turn reveals itself as a target. He also repeats Spiller's and Smith's 'casualty-aversion' thesis in somewhat more direct terms, stating that one's soldiers have to be brutalised and tribalised in order to operate effectively. Political feasibilities aside, however, comparison of the ADF with the armed forces of some of our regional neighbours suggests that it is doubtful whether 'brutalised' soldiers are in fact more effective in opposing purportedly 'less-brutal' but better-trained opponents (however good the former may be at perpetrating atrocities on unarmed civilians).

Brigadier Jim Wallace writes on the effects of digitisation on command and control. He notes the potential for commanders to treat the battle as a computer game without reference to on-ground human factors (tying in rather nicely with Tetlow), and/or to delay decision-making in lieu of pursing digitally-produced (and therefore potentially flawed) 'certainty'. He also notes a USMC exercise where legal, medical, chaplaincy, and some logistic and planning

functions were moved to a rear headquarters, in the belief that their advice could be made available to commanders via a computer-based 'reachback' process. The results were somewhat inconclusive, in that the legal officer and chaplain jealously guarded their access to the commander; certainly it is suggested that the ADF's tendency to keep health staff officers at arm's length from their commanders has not benefited either party. On the other hand, naval medical officers at sea frequently have no option but to interact with their commanders in precisely this manner.

Well-known historian and author David Horner writes on stress on higher commanders. His quote from World War II's Burma commander, Field Marshal William Slim, is worth repeating in full, given its applicability to broader contexts:

"*it is an extraordinary thing that you should meet so much opposition from allies. Allies, altogether, are really very extraordinary people. It is astonishing how obstinate they are, how parochially minded, how ridiculously sensitive to prestige and how wrapped up in obsolete political ideas. It is equally astonishing how they fail to see how broad-minded you are, how clear your picture is, how up-to-date you are and how co-operative and big-hearted you are... But let me tell you... that you are an ally too, and all allies look just the same. If you walk to the other side of the table, you will look just like that to the fellow sitting opposite.*"

Eleanor Hancock writes on women as killers and killing women in a military context, noting how gender integration in the last 20 years has often paralleled the racial integration of the US forces 50 years ago. Notwithstanding the advances in military gender relations in recent years, the media interest in Jessica Lynch during the recent operations in Iraq, notably at some expense to her mates who were killed or wounded in the same ambush, suggests that both the US military and society in general may have some way to go.

Jeremy Manton, Carlene Wilson and Helen Braithwaite reviewed the advances in field training for battle over the last 20 years. Whilst sharing some of the limitations as the computer-based simulation training described by Tetlow, Manton *et al* demonstrated the effectiveness of modern field training. From a health perspective, however, it is unfortunate that the issue of casualty prevention was not specifically addressed. Certainly the Australian Army's experience in recent years suggests that the preventable training-related non Battle Casualty (BCas) injury rate has far exceeded the number of real BCas encountered during actual combat operations in Somalia, East Timor and Iraq.

Despite the comments by Spiller, Smith and Griffiths, Evans concludes by stating that it is unlikely that the 21st century will see war being limited to bloodless hi-tech 'surgical' strikes on static targets. Future adversaries will take their military activities to the jungles and urban centres where information technology will be less efficient, and ground troops will have the advantage. To counter these forces, Western democracies need to rally both human and moral resources: computers and machines will not be enough. Subsequent events since 1999 suggest that Evans was right despite the foregoing inconsistencies, although he should perhaps have added mountains and deserts as well.

THE FACE OF NAVAL BATTLE

Dr David Stevens joined the RAN in 1974 as an antisubmarine warfare officer and has been Director of the RAN Sea Power Centre since his retirement in 1994. He is the editor or author of several books on Australian naval history and maritime strategy. Dr John Reeve is Senior Lecturer in Naval History at ADFA, following an extensive academic career in Melbourne, Cambridge, Yale, Hong Kong and Sydney universities.

Their book *The Face of Naval Battle*[4] is the latest of a series containing essays based on the two-yearly King-Hall Naval History Conference, in this case held in Canberra in 2001. This, however, is the first to explore the human aspects of maritime warfare. Although sharing similarities with *The Human Face of Warfare*, *The Face of Naval Battle* sets out to address many of the same issues from a naval perspective.

As John Reeve sets the scene by outlining those aspects of maritime warfare that are different from land operations, his chapter is worth reviewing in detail. He describes the importance of people in naval warfare; not how they interact directly as enemies, but with their weapons systems and associated supporting infrastructure. In the sailing ship era, the Royal Navy consistently won battles with superior men in fewer numbers of inferior ships. Yet in 1916 at Jutland, the RN's overwhelming material advantages were negated by defects in organisation and training. In WWII, aggressive RN commanders were still able to win despite inferior equipment (albeit often at a high cost in ships and personnel).

Reeve then draws attention to the extensive literature on the human experience of land warfare, particularly compared to maritime operations. Recalling such experiences – on land or at sea – is initially constrained by operational security, while their subsequent recall is often delayed and/or blocked. There is also is the difficulty of recalling the blizzard of sights, sounds and smells associated with life-threatening emergency, perhaps accompanied by shock, fear and exhaustion, even before considering the human susceptibility to rationalise and re-order events when such accounts are written afterwards.

Reeve notes that there are three aspects of naval warfare that exacerbate these problems:

- Despite modern sensors, the action itself can literally be over 'in a flash', thereby not leaving much of an actual 'event' to recall. Even then, such events may have very few witnesses (in contrast to land warfare, virtually none who are non-combatant); of these many do not survive.
- Sailors generally do not enlist en masse for war as soldiers do; nor do they necessarily re-enter society en masse afterwards. Neither are they particularly well-known for being 'user-friendly' sources of contemporary history; if anything the 'Silent Service' ethos suggests otherwise.
- Finally, Robert Ballard's books on marine archaeology show why visiting naval battlegrounds entail somewhat more technological support than that required to do so ashore. Furthermore, surviving ships frequently do not outlive either the perils of the sea or the scrapper's torch. Even then, tangible links to the people who fought and died aboard them are typically conspicuous by their absence: apart from Nelson's uniform (at the National Maritime Museum at Greenwich), Victory's Trafalgar bloodstains are long-gone.

Reeve notes that technological advances over the last 500 years (in particular the last 150) now allow ships to fight each other rather than the people in them; to do so with progressively less regard to wind, weather or time of day; to destroy each other within seconds rather than over hours or days; and from dealing with two-dimensional threats on the sea surface to three-dimensional ones above and below.

Yet Reeve also notes that today's navies still reflect legacies from the age of sail, in ways that extend beyond sailors continuing to wear 19th century fancy-dress. Leadership and acceptance of risk have remained essential components to winning at sea, along with seamanship proficiency and the maintenance of morale. The factors that keep sailors operating their ships and weapons in desperate circumstances – confidence in their leadership, small group dynamics, training and tradition, discipline, courage and (it has to be said) the inability to run away – all remain as valid now as they did in Nelson's time. Furthermore, the tasks undertaken by ships in wartime – convoy escort, blockade and sea control – also remain unchanged, as has the nature of the sea itself. These enduring attributes manifest themselves as follows:

- The 'two worlds' of a warship in action (i.e. above and below the deck), each with their own benefits and dangers. Sailors in action on the upper deck may or may not prefer to remain there; those below deck may or may not prefer to see what is happening.
- Physical isolation from the enemy (in contrast to Grossman's comments regarding close combat), which facilitates both the ability to concentrate on the task at hand as an antidote to panic, and a fatalistic acceptance of either killing or being killed. An additional attribute is the fact that the tasks are frequently the same in peacetime and in war.
- Boredom and fatigue are a danger during any period of extended operations. In such circumstances, enhanced living conditions afloat and a positive living and working atmosphere aboard a warship derives from mutual respect generated by the performance of skilled and interdependent tasks. This means that ships develop their own personalities, created by their captains and their crews. Living in a space the size of a suburban living room with 30 other people that one has not chosen to live with for months on end makes this inevitable: the only option is whether the resulting 'atmosphere' is efficient – and therefore happy – or not.
- The penalty for failure for naval commanders is peremptory: a lost ship cannot be rallied like a broken infantry battalion. Other complications for naval commanders include managing both the weapons systems and the people who operate them (something air force commanders have in common); navigating the ship in confined waters while using her weapons systems (often simultaneously), balancing initiative with compliance with orders;

balancing the relationships and needs of different ship types within a task group, and making rapid operational decisions whilst being mindful of interservice sensitivities. All rather a lot to ask of one individual.

Reeve also notes that naval casualties have their own hazards to confront. Ships may be destroyed instantaneously with no or few survivors; they can sink quickly with high survival rates (British destroyers in the Mediterranean during WWII were sunk within two minutes, yet half their crews often still survived), or they may allow orderly abandonment without any casualties at all. Survivors in the water are exposed to many new dangers from the sea itself, as well as the violence of the enemy.

Reeve states that all naval warfare is 'joint', given the fundamental interfaces of the littoral environment between land and sea, and its reinforcement by air power. Navies are essential in order to project combat power ashore and to evacuate defeated armies to safety; throughout its history the RAN has done plenty of both. On the other hand, Evans and Ryan have not really considered joint operations, except to indicate a mindset that one service's war experiences – and the human elements thereof – apparently represent universal truth.

Reeve notes that submariners generally still live and work in a complex engineering environment with few compromises for their needs. Limited periscope access, the abrupt change from being the hunter to the hunted, and the low likelihood of survival in the event of accident or enemy action make for a somewhat demanding environment. Naval aviators generally have more in common with their land-based counterparts (at times perhaps more than their 'mullet' colleagues), but with additional challenges even in peacetime – per the RN Fleet Air Arm's WWII 'A25 Song'[5]:

'They say in the Air Force that a landing's OK,
If the pilot gets out and can still walk away,
But in the Fleet Air Arm the prospect is grim,
If the landing's piss-poor and the pilot can't swim' .

Reeve also compares the faces of naval, land and air battle. He states that, unlike soldiers, sailors tend not to be treated like beasts of burden; neither do they normally endure route marches, or the effects of hunger and thirst. He might also have added that unlike soldiers, sailors are scarce and expensive assets, a situation exacerbated in the modern era by the increasing emphasis on highly advanced technical training (particularly for engineering and electrical sailors).

Furthermore, soldiers are mindful that the enemy has a human face: sailors think far more of the opposing ship or aircraft shooting at them, than of the people aboard who are pulling the triggers. Even when sailors are being shot at, unlike soldiers they can usually do something useful about it. This means that (apart from submariners), most sailors generally do not suffer the same stress as (for example) soldiers under artillery bombardment.

Reeve also notes that ships are targets only with respect to their capabilities, not the ground (water?) they hold. This means that, while Army discipline is directed at soldiers holding ground while overcoming the instinct to flee danger, sailors – confined, busy, often having to either fight or die and having nowhere to run – have much less scope to panic or to break down. Reeve also notes that combat refusal among sailors is rare, and that 'Blighty' wounds often do not remove them from danger. Finally, because all sailors have an enemy that is far more pitiless than any human opponent, the level of understanding between navies – even in wartime – is sometimes better than with their own compatriot armies. It is, therefore, suggested that naval discipline is therefore substantially different to Army's – less rank-driven and far more amenable to expert opinion and advice – but remains none-the-less essential to ensuring not only success in action, but survival at sea in all circumstances.

The similarities between naval aviators and air force aircrew have been noted previously, but Reeve states that these are also shared to some extent with all other naval personnel. Like sailors, aircrew have to contend with an operational environment that is singularly unforgiving of error, even in peacetime. Airmen and sailors (in particular submariners) share the same interactions between people and their equipment, as well as a degree of detachment from the human face of the enemy. However, flying is not a way of life the way that being at sea is: aircrew measure flying hours, not days or weeks or years. While a sailor's ship becomes his or her home, aircrew do not have the same relationship with their aircraft. This means that, although sailors share similar swings from 'safe' to 'unsafe' environments as airmen, they tend to be less frequent, far less extreme, but of much longer duration. It is suggested this in turn means

that sailors are far more reliant than either army or air force members on their unit's own resources for psychology support. This is typically provided as a leadership and management – ie command/divisional – function, generally with only limited support from ship's health staff.

Andrew Gordon discusses command at the task group or fleet level. He offers numerous examples of Nelson's 'blind eye' at Copenhagen being successfully applied to a variety of naval actions since 1801, where naval commanders would have been justified in not taking the risky yet decisive action that brought victory. As Admiral of the Fleet Lord Fisher stated over a century ago, 'Any damned fool can obey orders'.

It is suggested that this attribute is not the sole province of naval commanders: often being thousands of miles from definitive care and frequently lacking their own medical officer, medical sailors are specifically trained to provide patient care independently for extended periods with minimal supervision. This not only entails having a high level of technical skill, but also a sober and self-disciplined appreciation of their limitations: while the errors of shore-based clinical 'cowboys' may be overcome with ready MO access and prompt evacuation, the seagoing context means such errors are more likely to prove disastrous. It is suggested that this attribute poses significant challenges for non-naval commanders of tri-service health contingents: it is the basis of why medical sailors are not simply 'assistants' to medical or nursing staff, and why trying to manage them as such is likely to disappoint all participants.

Gordon also notes that written doctrine is not a strong point for navies. As much of what navies do seems self-evident to naval personnel (even down to junior sailor level), documenting it often appears superfluous. Neither is it seen as beneficial to ensuring decisive results when it has been documented in the past, as seen by the initiative-robbing 18th century 'Fighting Instructions', or the Grand Fleet Battle Orders at Jutland. The downside is that navies are generally poor at explaining what they do to anyone else, a classic Australian example being the non-replacement of the carrier Melbourne in 1982.

On the health side, recent debates regarding post deployment health screening and DNA testing may be cases in point – in order to get the job done, any tri-service health policy that is either superfluous or cannot be applied by naval health staff in mid-Pacific will take second place to any alternative that can be used in such circumstances. As something like 85-90% of naval personnel still receive their health care from RAN health staff, this also means that shore-based naval health facilities must conform to the ships that they support, whatever the requirements of local defence Area Health Service SHOs. Although there is a need to accommodate the remaining 10-15% of naval personnel who receive their health care from non-naval sources, it is also suggested that the tail should not wag the dog.

Gordon also refers to the digitisation of command and control, albeit on different terms to Wallace. Gordon's concern relates to this technology either being used to improve collaboration and ad hoc task switching in order to enhance naval combat power, or to enhance centralised control in ways that have failed at sea previously (notably Jutland). In this respect, it is suggested that land and maritime command at the operational level seems to be diverging, thereby posing rather a challenge for HQAST staff (not to mention the command and control of deployed ADF health units ashore and at sea).

Bruce Ellerman's presentation on the 1894 Sino-Japanese War offers several lessons on how not to fight a navy. The Chinese fleet was split into three locations, under the command and control of local Army commanders who failed to allow their naval forces to support each other; foreign technology was misused; officer training and leadership were poor, while logistic support was marred by corruption and incompetence. Apparently the 'medical' services on one ship during the Yalu River action entailed a surgeon using his prussic acid atomiser to convert P1 and P2 casualties into P4s. The contrast with the British-built and trained Japanese Navy was both substantial and instrumental to their victory. Ellerman notes that over a century later (as perhaps its title suggests), the People's Liberation Army Navy (PLAN) may not have learned much since.

By way of contrast, Peter Overlack describes the efforts of Admiral Graf Spee's German East Asian Cruiser Squadron in 1914, which culminated in the detachment of the cruiser Emden to the Indian Ocean to triumph and tragedy, his own victory at Coronel off Chile, and the nemesis that followed off the Falklands. Left on his own half a world away from home, Spee demonstrated effective unified sea command despite a lack of orders from higher authority, acceptance of risk

(and the reliance on luck to go with it), leadership of men who for months on end knew that ultimately they were unlikely to survive, as well as tactical and technical skill in action. The difficulties of providing effective and efficient health services in such circumstances can only be imagined.

Russell Parkin provides an overview of sailors and seaborne soldiers on the defence of Australia from 1914 to 2001. He notes that the Australian Army has never performed its primary function of defending mainland Australia from invasion, instead acting as an overseas expeditionary 'projectile' fired by the RAN and assorted allied navies. This commenced in 1914 with the Australian Naval and Military Expeditionary Force (ANMEF) operations in German New Guinea, and most recently continued in East Timor, Iraq and the Solomons. Parkin also notes quite correctly that the ADF's experience of these operations has been a cycle of inter-service engagement and detachment. Although current world events suggest that detachment is no longer an option, the imperative is to ensure that the difference between the services operating together efficiently and effectively is recognised and accepted (as opposed to them operating the same way, irrespective of whether a particular function is actually necessary in particular environments or not). It is suggested this particularly applies to the ADF's health services.

Like Peter Warfe, Mike Dowsett is also well-known to most AMMA members. He discusses the medical aspects of the Sydney-Emden action off the Cocos Islands on 9 November 1914. Having sustained four killed and several wounded among her own crew in only two hours, Sydney's sickbay staff (two MOs and two medics, plus first aid parties) also dealt with Emden's casualties (134 KIA, 4 DOW, 61 WIA and 117 uninjured POWs) until they were landed in Colombo six days later. Emden's casualties did not reach Sydney until the day after the action, by which time most wounds were foul and stinking. Even with the help of Emden's surviving surgeon, treatment initially entailed working 40 hours straight in overcrowded, hot and humid conditions. After the casualties were landed, disinfecting the ship to prevent erysipelas in this pre-antibiotic era was rushed by the captain, and a day after sailing on 19 November the somewhat weary sickbay staff had yet another acute non-battle surgical case. Australia's WWII Pacific experience and subsequent conflicts since suggest that, notwithstanding the revolution in military medical affairs, things at sea have not changed.

David Hobbs discusses aircraft carriers. He notes how the British lead in naval aviation at the end of WWI was lost to the Americans and Japanese after the Royal Naval Air Service was amalgamated with the Royal Flying Corps to form the Royal Air Force. He also notes how the restoration of the Fleet Air Arm in 1938 left the RN with obsolete ships, aircraft and doctrine when WWII commenced a year later. Noting that the RAN established its own Fleet Air Arm in 1948 and the Army its aviation corps in 1960 (the latter taking over virtually all land-based helo operations from 1990), it is unclear why the ADF's health services should be managed any differently from its aviation forces.

Guy Griffiths offers his own naval battle experiences as a seaman officer in WWII, Korea and Vietnam, stating that the man (and now, the woman) remains the most important factor in achieving operational effectiveness with the material capabilities available. Gordon Johnson does likewise from a sailor's perspective aboard the cruiser Hobart in the Dutch East Indies in early 1942, a time including convoy runs to doomed Singapore, the rescue of badly-injured survivors from the Norah Moller, and participation in the disastrous Battle of the Java Sea before escaping to Colombo. All in all, a torrid time as any ship in any navy has had without sustaining either hits or casualties. Johnson ascribes this to the skill of his Captain and the professional competence of (and confidence in) all ship's departments.

David Jones' review of ex- US submariner Machinist's Mate Thomas Parks in WWII describes how two Australian sailors saved the latter from three Australian soldiers in a pub in Perth. These two:

"*... said G'day to the soldiers and sort of ignored me but they sensed what was going on. Then as they were standing on either side of me ... the biggest of the two sailors put his arm around my shoulder and glaring at the soldiers said 'I don't give a **** what Navy we are in we are all sailors aren't we'. ... the soldiers decided that it might be better if they left ... Those two Aussie skimmers* [non-submariners] *saved me from a bad beating and maybe even saved my life .. The Aussies escorted me all the way back to Fremantle right to Sailfish. They were on a corvette tied up right across the Swan River from us*'.

Peter Stanley discusses the late J.E. Macdonnell, who

served in the RAN from 1934 to 1948 and wrote over 200 novels on the wartime RAN. While the RAN's war entailed much drudgery, loss and (it has to be said) bad luck, Macdonnell's books offers a realistic view of 'what might have been' based on imagination and his own experiences, even though he was never in a major Fleet action. This is well-demonstrated by his references to the medical aspects of wartime naval life in his novels.

Michael Whitby describes the diary of Commander Frank Layard DSO, DSC, RN, who commanded a Canadian escort group in the Atlantic from 1943 to 1945. The RCN had all the personnel and other problems that might be expected of a navy that had expanded from 3500 to over 90,000 men in less than four years. This meant that, unlike Australian sailors, the Canadians were not well-regarded by Royal Navy officers for their discipline, technical prowess or efficiency, as shown by excessive convoy losses by RCN escort groups.

Having had his ship sunk off North Africa, Layard was detailed off to get one such group in order; a task in which he succeeded whilst enjoying the confidence of both his RN superiors and the Canadians who served under him – rather an achievement. Ace U-boat killer Captain Frank Walker RN regarded him as 'a capable destroyer captain, who has shown marked coolness and good judgement under fire', yet Layard's diary revealed an indecisive self-doubting man lacking in confidence, who did not give himself due credit. What kept him going was a personal network of fellow officers, diversions ashore, and a devoted family. Sixty years later, the importance of all three has not changed.

Lee Cordner outlines his personal experiences as CO HMAS Sydney (IV) in Gulf War I in 1990-2, and subsequently as CO HMAS Adelaide in 1997-9. He describes sea command as the last bastion of autocracy in a democratic society, while noting that the Australian ethos means that all on board see themselves as equals with their captain – they expect him (or her) to be different, competent, genuine, fair and above the pack, but not aloof. His (generally still 'his') competence as a seaman, skills as a tactician, and how well he leads, motivates and inspires his people are all vital to both success and survival.

It has been said that there is a special divine Providence that looks after fools, drunks and sailors: the corollary, however, is that anything that does go wrong, does so totally. In this Cordner recalled the damage to the USN sister ships Stark and Samuel B. Roberts in the late 1980's, and the loss of Sydney (II) in action against Kormoran in 1941. Fatigue (never achieving more than two hours uninterrupted sleep for 47 days straight), combined with fear, boredom, lack of daylight and a cocktail of drugs (presumably the NAPS tablets) exacerbated his problems.

On returning from the Gulf War in April 1991, Sydney had a 57% crew change and workups to do all over again, before departing for the MEAO again the following August. A degree of weariness at the end of his time in command is therefore perhaps excusable. The high crew changeover rate and limited time available (compared for example with East Timor AUSBATT rotations) also demonstrates why – in the naval context at least – many health-related force preparation tasks such as vaccinations are still best performed en route to the AO.

Cordner's time as CO Adelaide followed a similar pattern, with the added distractions of commanding a task group (including Westralia during her fire in May 1998) not to mention his first mixed-gender ship. The importance of medical staff not wasting their CO's time (yet barging in when necessary) therefore seems rather self-evident.

David Stevens discusses perceptions of the enemy in modern naval battle. He refers to John Keegan outlining the dichotomy between the 'fellowship of the sea' between sailors and the fact that modern war is fast-paced, deadly and decisive. Sailors in war go from one enemy to two or more, the worst of which still remains Monsarrat's 'Cruel Sea'. The worst RAN loss in WWI was the submarine AE1 with all hands, not by enemy action but by accident. The loss of Sydney (II) with all 645 hands in action is matched by the loss of Goorangi in 1940 by collision – in Port Philip Bay of all places – and Matafele in a cyclone off New Guinea in 1944, also with all hands. Following Armidale's sinking in 1942, most of her crew died not by enemy action but while awaiting rescue. Other examples include Nizam losing ten men to a freak wave in the Bight in 1945 and of course the accidents to Voyager in 1964, Stalwart in 1986, Otama in 1988 and Westralia in 1998. This means that damage control training is no different to any other battle drill: only the enemy varies.

Stevens also discusses naval attitudes to the Germans, the Italians and the Japanese, thereby covering similar

ground to Mark Johnson's *Fighting the Enemy*[6]. Although Australian sailors' attitudes towards the Germans were marred by the U-boat campaign in both world wars, in general they were respected as worthy and honourable adversaries. Perhaps surprisingly, relations with the Italian navy were similarly positive; however, Stevens characterised the Pacific war as displaying atrocious behaviour by all sides. Certainly the rescue of Emden's survivors by Sydney (I) 1914 and the Espero's by Sydney (II) in 1940 (to name two of several examples) contrasts in rather stark terms with the massacre of Japanese survivors in the Bismarck Sea by Allied air forces in 1943. Yet the Japanese midget submariners who died in the raid on Sydney Harbour received full naval honours (although admittedly this may have been part of an attempt to alleviate the conditions of allied POWs). Even so, the increasing desperate measures taken by the Japanese as the war progressed rather stretched things for most sailors, especially after Australia was hit twice by kamikazes in October 1944 (13 KIA, 1 missing, 16 DOW, 61 WIA), and five times in January 1945 (28 KIA, 16 missing, 68 WIA). In both cases, the wounded were retained on board (rather like Emden's aboard Sydney (I)) until Australia left the combat area several days later.

Stevens concludes with an excerpt written in 1940 by an Australian journalist who asked a Sydney (II) sailor how he felt in battle:

"... *it's all sort of mixed up. Before the ship opens fire we are all keyed up. Sometimes you find yourself trembling, not with fear, but with the strain of waiting. Then when the action begins it's all excitement. It's just as if you're taking part in the most exciting bit of some sporting contest, a football match or a swimming race. If you know you're hitting the enemy there's a feeling of elation, the same feeling as if you've kicked a goal in a football game. That wears off after a few minutes, particularly if your own ship isn't taking any punishment. Then you see the hits smacking into the other ship, with the flashes and the smoke and the glow of red-hot steel, and you begin to put yourself in the place of the other chap and try to think what you'd be feeling if you were at the other end. That's when discipline and training come in handy. For a brief period you feel that you want to stop firing. The feeling passes. You know if you did the other chap would just belt hell out of you. So you keep belting away, but you do it mechanically. You don't even seem to think. The feeling of elation has gone, but has been replaced by a sort of cold efficiency, and then you seem to do your best work...*"

It seems likely this sailor found out about the receiving end a year later.

Colin Wastell gives his perspective on war stress. He starts with Australia's aforementioned Kamikaze attacks, with her crew feeling – for months afterwards – that any enemy aircraft within 100 miles was specifically targeted at them, rather than the hundreds of US ships with whom they were operating. He also notes how PTSD symptoms became more frequent among WWII veterans 50 years later during the 'Australia Remembers' commemoration in 1995. He provides and overview of war stress since WWI and reviews the psychophysiology of traumatic stress, on comparable terms to Grossman but in somewhat better terms using what he termed 'catastrophic modelling'.

Wastell notes that the actions taken by a ship are directed at the survival of the ship and its crew. Naval history is replete of such examples. For example, the roles of damage control party members are distributed and yet clear: whether doing a hatch entry or fighting along a passageway, the team acts as a coherent group. On the other hand, personnel who are not well integrated into a ship's company are more likely to pursue self-interested behaviours at the expense of others. It is suggested that this has important implications for PCRF members, in particular the need to integrate them with the rest of the ship's company.

Finally, Peter Jones outlines the face of the future naval battle. The digitisation of command and control means for example, that a weapon aboard one ship may be fired by a button pushed on another. Resource constraints make it harder to replace current capabilities; despite stealth technology, missile systems are becoming more effective at finding and destroying their targets. Increasing weapon ranges mean that the size of the battlespace will increase. The already rapid pace of naval warfare will further increase, thereby exacerbating problems with fatigue, especially as ship's company sizes get smaller.

From a medical perspective, smaller ships' companies mean less clinical work to do, while the increasing trend towards multiskilling of sailors (as seen even now with Anzac/ minehunter crews and submariners), means that future medical sailors will no longer be able to 'just be medics'. This in turn has implications for both tri-service medical training, and compliance with the Geneva Conventions.

Larger battlespaces also have implications for the ADF's health services, particularly if Navy-specific health needs are not well articulated. Although telemedicine and robotic surgery will have a role, it is suggested that it will be a very long time before either will be more reliable and/or cost-effective than having trained naval health personnel aboard ships in the combat zone, especially for mass casualties.

Neither should it be assumed that navies share the same health threats as armies, even in peacetime. For example, armies have to contend with a wide variety of public health threats from food, water, disease vectors, and other environmental threats, while navies do not to anything like the same extent because (some port visits excepted), their environment is largely self-contained. On the other hand, the complex engineering environment at sea requires more attention to occupational hygiene matters than on land (although in this respect air forces have similar concerns).

In conclusion, both books offer valuable insight into the past, present and future nature of the human element in war. It is suggested that this is highly relevant to all ADF health staff, particularly with respect to understanding their role in providing health services in such circumstances.

Although a return to three single-service stovepipes is neither feasible nor appropriate, both books suggest that that a 'one-size-fits-all' approach to ADF health care in recent years has simply redistributed old inefficiencies without actually resolving them. Recent changes to the health requirements for naval reservists, the possible advent of an Army equivalent to the Directorate of Naval Health and the RAAF's Health Services Wing among other changes suggest that this has been recognised and accepted. The outcome of the Stevens review is therefore awaited with considerable interest.

Yet it seems odd that – Evans aside – less-technical land-based warfare proponents see an increasing technical orientation to future conflicts (driven by media and societal concerns regarding casualties), while the more technically-driven maritime proponents emphasised the ongoing importance of the human element, where media and societal concerns regarding casualties simply seem not to be an issue.

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ABSTRACTS FROM THE LITERATURE

Contributed by James Ross

Tveito T, Hysing M and Eriksen H. Low back pain interventions at the workplace: a systematic literature review. *Occup Med 2004*; 54(1): 3-13.

OBJECTIVE

To assess the effect of controlled workplace interventions on low back pain (LBP) through a review of controlled studies. The rising costs of employees with LBP have resulted in an abundance of offers to society and organisations of interventions to prevent and/or treat the problem. Little is known of the effect of the different interventions.

METHODS

A systematic literature search based on the inclusion criteria: controlled trial, work setting and assessment of at least one of the four main outcome measures: sick leave; costs; new episodes of LBP; and pain. Effect of the interventions was reported for the four main outcome measures.

RESULTS

Thirty-one publications from 28 interventions were found to comply with the inclusion criteria. Exercise interventions to prevent LBP among employees and interventions to treat employees with LBP have documented an effect on sick leave, costs and new episodes of LBP. Multidisciplinary interventions have documented an effect on the level of pain.

CONCLUSIONS

The results show that there is good reason to be careful when considering interventions aiming to prevent LBP among employees. Of all the workplace interventions only exercise and the comprehensive multidisciplinary and treatment interventions have a documented effect on LBP. There is a need for studies employing good methodology.

COMMENT

So, the scepticism shown by many towards a raft of low back pain interventions seems to be justified. Caution has meant that, for most of the treatment regimes, the studies have been inadequately robust and more research is needed. However, exercise and coordinated comprehensive programs to deal with medical, social, psychological, workplace and economic issues are needed.

Miller KE, Muth ER. Efficacy of acupressure and acustimulation bands for the prevention of motion sickness. *Aviat Space Environ Med 2004* Mar;75(3):227-34.

INTRODUCTION

The purpose of this study was to examine whether acupressure and acustimulation prevent motion sickness, taking into consideration whether or not the acupressure and acustimulation are administered properly. These techniques claim to reduce nausea through stimulation of the P6/Neiguan acupuncture point by applying acupressure or electrical acustimulation.

METHODS

The Acuband and ReliefBand were used to administer acupressure and acustimulation, respectively. There were 77 subjects who were assigned to 1 of 5 conditions: Acuband trained or untrained; ReliefBand trained or untrained; or placebo. Subjects were exposed to a 20-min baseline and a maximum of 20 min of optokinetic drum rotation. Untrained subjects read the device directions, used it as they deemed appropriate, and completed a usability analysis following drum exposure. Trained subjects read the device directions and were trained to use the device appropriately prior to drum exposure. Symptoms and gastric myoelectric activity were monitored during baseline and rotation.

RESULTS

In all conditions, symptoms of motion sickness and gastric tachyarrhythmia increased, and 3 cpm gastric myoelectric activity decreased, during drum exposure. The only difference found between conditions was a potential delay in symptom onset for the ReliefBand compared with the Acuband. While the Acuband was found difficult to use (0 untrained subjects used it correctly) and only a few minor usability issues were

identified for the ReliefBand, usability had no impact on efficacy.

DISCUSSION

Neither band nor placebo prevented the development of motion sickness, regardless of whether the bands were used correctly or incorrectly.

COMMENT

If the bands had no benefit in prevention of motion sickness, how is it known what is meant by using them correctly? Using them 'correctly' was not helpful. Maybe the answer is to use them in some other way...

Tu RH, Mitchell CS, Kay GG, Risby TH. Human exposure to the jet fuel, JP-8. *Aviat Space Environ Med 2004* Jan;75(1):49-59.

INTRODUCTION

This study investigates anecdotal reports that have suggested adverse health effects associated with acute or chronic exposure to jet fuel.

METHODS

JP-8 exposure during the course of the study day was estimated using breath analysis. Health effects associated with exposure were measured using a neurocognitive testing battery and liver and kidney function tests.

RESULTS

Breath analysis provided an estimate of an individual's recent JP-8 exposure that had occurred via inhalation and dermal routes. All individuals studied on base exhaled aromatic and aliphatic hydrocarbons that are found in JP-8. The subject who showed evidence of the most exposure to JP-8 had a breath concentration of 11.5 mg/m3 for total JP-8. This breath concentration suggested that exposure to JP-8 at an Air Guard Base is much less than exposure observed at other Air Force Bases. This reduction in exposure to JP-8 is attributed to the safety practices and standard operating procedures carried out by base personnel. The base personnel who exhibited the highest exposures to JP-8 were fuel cell workers, fuel specialists and smokers, who smoked downwind from the flightline.

DISCUSSION

Although study-day exposures appear to be much less than current guidelines, chronic exposure at these low levels appeared to affect neurocognitive functioning. JP-8-exposed individuals performed significantly poorer than a sample of non-exposed age- and education-matched individuals on 20 of 47 measures of information processing and other cognitive functions.

COMMENT

The problem using neurocognitive testing is that the best comparison is against a baseline reading in an individual. Age and education matched groups are a poor substitute. Having low level chronic exposure is now being suggested to have long term, ongoing negative impact on brain function. If this turns out to be the case, then this has very profound consequences for many industrial processes.

Risberg J, Ostberg C, Svensson T, Norfleet W, Ornhagen H, Mjaavatten O, Juvik T Atmospheric changes and physiological responses during a 6-day "disabled submarine" exercise. *Aviat Space Environ Med 2004* Feb;75(2):138-49.

BACKGROUND

Survival time within a disabled submarine (SUBSUNK) is dependant on atmospheric composition and proper design and use of emergency atmospheric control systems. The objective of this study was to investigate atmospheric changes and physiological responses during a SUBSUNK trial.

METHODS

There were 18 volunteers who were restrained within a 250 m3 front compartment of an Ula-class submarine submerged in 8 degrees C seawater for 6 d, 18 h. Atmospheric control was maintained according to emergency procedures using non-electrically powered chemical CO2 absorption, and O2 was replenished using chlorate candles. Atmospheric parameters, skin and body temperatures, weight, urine, and drinking volume were measured. Subjective responses to cold were measured on a visual analogue scale (VAS), and symptoms were logged on the environmental symptoms questionnaire (ESQ).

RESULTS

Atmospheric temperature gradually decreased to a minimum of 14.1 degrees C. Toe, heel, and finger temperatures decreased significantly. Subjects reported inferior subjective thermal comfort on the VAS and increased cold stress on the ESQ. Except for CO2, no inorganic or volatile organic compounds exceeded occupational exposure limits. The PO2 and PCO2 ranged from 17.4-20.3 and 1.9-2.8 kPa, respectively, during the first 5 d. During the last 2 d, PO2 and PCO2 were deliberately maintained at about 15.8 and 3.1 kPa, respectively. Mean oxygen consumption and CO2 production were 23.8 and 19.8 L standard temperature and pressure (STP) x man(-1) x h(-1), respectively. Soda lime and lithium hydroxide CO2 absorption capacities were 126 and 405 L STP x kg (-1) respectively.

CONCLUSIONS

Atmospheric conditions can be controlled acceptably for 6 d, 18 h within the front compartment of an Ula-class submarine operating according to emergency SUBSUNK procedures.

COMMENT

Eighteen people for a week in a space 10 metres by 10 metres by 2.5 metres. So they survived, but what of the psychology of that experiment?

Appenzeller GN. Injury patterns in peacekeeping missions: the Kosovo experience. *Mil Med 2004 Mar*;169(3):187-91.

Proper medical deployment planning requires projecting injuries. For this reason, the injury patterns and mechanism of injury were reviewed for an 18-month period in Kosovo, and injury rates and mechanisms were extracted for review. Overall, there were 404 trauma patients treated during the study period. Isolated head and neck injuries accounted for 29.5% (119) of injuries, chest wounds 5.7% (23), abdominal wounds 4.5% (18), and extremities 33.4% (135). Multiply injured patients accounted for the remaining 27.0% (109). When subdivided by mechanism, penetrating injury made up 36.9% (149), whereas blunt trauma accounted for 63.1% (255). Motor vehicle accidents made up the majority of blunt trauma (72.2%). Of penetrating injuries, gunshot wounds accounted for 55%, blast wounds 38%, and stabbings 6.7%. The data clearly demonstrate that humanitarian and peacekeeping missions require preparation for a wide variety of mechanisms of injury beyond the typical penetrating trauma of combat situations.

COMMENT

The lesson is hardly revolutionary. In peacekeeping, there will be injuries from causes other than combat. The detail is more interesting, with motor vehicles by far the most dangerous place to be.

Cummings TF. The treatment of cyanide poisoning. *Occup Med (Lond) 2004* Mar;54(2):82-5.

Cyanide has gained historical notoriety as a poison used with intent to cause fatality. Its occurrence in industry is confined to a small number of uses in a relatively narrow range of industries, including the manufacture of Perspex and nylon and in electroplating. With proper controls in these settings, episodes of poisoning are extremely rare. However, because of the potential for a fatal outcome, procedures for the treatment of acute poisoning are essential. Antidotes include methaemoglobin generators, direct binding agents and sulphur donors, but there is a lack of international consensus about the treatment of choice. This article reviews the mechanisms and treatment of cyanide intoxication and emphasizes the importance of having agreed local procedures for the emergency treatment of poisoning.

COMMENT

It seems that where you are in the world dictates how cyanide poisoning will be treated. UK (dicobalt edetate) is different to Germany (dimethylaminophenol) is different to US (sodium nitrate) is different to France (hydroxycobalamin). Which just means that no one treatment is a stand out.

Knapik JJ, Reynolds KL, Harman E. Soldier load carriage: historical, physiological, biomechanical, and medical aspects. *Mil Med 2004* Jan;169(1):45-56.

This study reviews historical and biomedical aspects of soldier load carriage. Before the 18th century, foot soldiers seldom carried more than 15 kg while on the march, but loads have progressively risen since then. This load increase is presumably due to the weight of weapons and equipment that incorporate new technologies to increase protection, firepower, communications, and mobility. Research shows that locating the load centre of mass as close as possible to the body centre of mass results in the lowest energy cost and tends to keep the body in an upright position similar to unloaded walking. Loads carried on other parts of the body result in higher energy expenditures: each kilogram added to the foot increases energy expenditure 7% to 10%; each kilogram added to the thigh increases energy expenditure 4%. Hip belts on rucksacks should be used whenever possible as they reduce pressure on the shoulders and increase comfort. Low or mid-back load placement might be preferable on uneven terrain but high load placement may be best for even terrain. In some tactical situations, combat load carts can be used, and these can considerably reduce energy expenditure and improve performance. Physical training that includes aerobic exercise, resistance training targeted at specific muscle groups, and regular road marching can considerably improve road marching speed and efficiency. The energy cost of walking with backpack loads increases progressively with increases in weight carried, body mass, walking speed, or grade; type of terrain also influences energy cost. Predictive equations have been developed, but these may not be accurate for prolonged load carriage. Common injuries associated with prolonged load carriage include foot blisters, stress fractures, back strains, metatarsalgia, rucksack palsy, and knee pain. Load carriage can be facilitated by lightening loads, improving load distribution, optimising load-carriage equipment, and taking preventive action to reduce the incidence of injury.

COMMENT

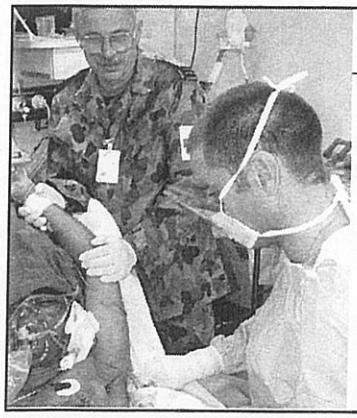
Comprehensive and erudite review.

Pronk N, et al. The association between work performance and physical activity, cardiorespiratory fitness and obesity. *J Occup Environ Med 2004*; 46(1): 19-25.

The purpose of this study was to test the association between lifestyle-related modifiable health risks (physical activity, cardiorespiratory fitness and obesity) and work performance. Data were obtained from 683 workers. Dependent variables included number of work days lost, quantity and quality of work performed, extra effort exerted and interpersonal relationships. Results indicated that higher levels of physical activity related to reduced decrements in quality of work performed and overall job performance; higher cardiorespiratory fitness related to reduced decrements of quality of work performed and a reduction in extra effort exerted to perform the work; obesity related to more difficulty in getting along with co-workers; severe obesity related to a higher number of work days lost. It is concluded that lifestyle-related modifiable health risk factors significantly impact employee work performance.

COMMENT

This study has demonstrated an association between obesity, lower physical activity and lower cardiorespiratory fitness on the one hand and better work outcomes: the ability to maintain work performance for longer without decrement, on the other hand. Obesity of itself was associated with increased lost time.



AMMA UPDATE

JULY 2004

News and Information for members of the Australian Military Medicine Association

SUCCESSES

ON 13 JUNE 2004, the Australian Government announced the Queen's Birthday Honours List. Among them, six ADF Health Personnel were recognised. Awards were:

COMMENDATION FOR DISTINGUISHED SERVICE

Colonel Jeffrey Robert BROCK – For distinguished performance in warlike operations as the Aero-Medical Evacuation Operations Officer with the United Nations Mission in Support of East Timor, Peacekeeping Force, from October 2002 to September 2003.

CONSPICUOUS SERVICE CROSS

Commander Elizabeth Carmel RUSHBROOK RAN – For outstanding achievement as the Medical Officer-in-Charge, Balmoral Navy Hospital, HMAS PENGUIN, and as the Officer-in-Charge, Primary Casualty Receiving Facility.

Lieutenant Colonel Roslyn Joy BLAKLEY – For outstanding achievement to the Australian Defence Force in the area of Health Administration.

Lieutenant Colonel Georgeina Mary WHELAN – For outstanding achievement as Acting Colonel Health, Land Headquarters.

NURSING SERVICE CROSS (NSC)

Private Jonathan Aharon WALTER – For outstanding devotion and competency in the performance of nursing duties in warlike operations as the Medical Assistant /Nurse for Delta Company, AUSBATT VIII, whilst deployed on Operation CITADEL.

CONSPICUOUS SERVICE MEDAL

Major Kittie Kit-Yuk LAI – For outstanding achievement as the Senior Dental Officer at the 3rd Combat Service Support Battalion.

AMMA CONFERENCES

2004 CONFERENCE

The 13th AMMA Annual Scientific Conference will be held at Rydges Lakeside Hotel, London Circuit, Canberra, Australian Capital Territory, from 22 - 24 October 2004

AWARDS & GRANTS

Awards and Grants winners for 2003 were announced at the Conference. This year's winners were:

Research Grant - $1000 This grant, presented towards new or ongoing research, was not awarded.

Journal Editors Prize - $750 For best paper by an AMMA Member published each year in the AMMA Journal was **CMDR Neil Westphalen and FLTLT Steven Cook.**

Patron's Prize - $250 Best article published in a peer-reviewed journal by an AMMA member – must be a health related article – was awarded to **CAPT Andy Robertson, RANR.**

Details about these awards and prizes can be found on the AMMA website: www.amma.asn.au

For those wishing to do a research project within Defence, the project must be approved by ADHREC (The Australian Defence Human Research Ethics Committee). Information kits for new researchers are available from the ADHREC Executive Secretary on
Tel: (02) 6266 3818
Fax: (02) 6266 4982

AMMA CONTACTS

For all general AMMA inquiries contact the Secretariat.

Leishman Associates:
Tel: (03) 6234 7844
Fax: (03) 6234 5958
amma@leishman-associaties.com.au
Website: www.amma.asn.au

AMMA WEBSITE

Visit AMMA's website at:
www.amma.asn.au
The web site is constantly evolving and any contributions are welcome.

JOURNAL

Journals for 2004 will be published as follows:

Issue	Copy Deadline
Oct 2004	31 Aug 2004
Mar 2005	31 Jan 2005

All queries regarding the Journal should be directed to the Editor:

Andy Robertson
Tel: (08) 9222 2277
Fax: (08) 9222 4142
Mobile: 0417 908 572
Email: agrobert@bigpond.net.au

Information for updates or other queries can be directed to Karen Leshinskas:
Tel: (07) 5461 1802
Fax: (07) 5461 1844

E-mail:
Karen.Leshinskas@defence.gov.au

CONFERENCE AND MEETING CALENDAR

Date	Conference	Venue	Contact Details
19 - 30 July 04	International Peace Operations Seminar	Canberra/ADFWC, RAAF Williamtown	peacekeeping@defence.gov.au
12 - 17 Sep 04	XXXVth International Congress on Military Medicine	Arlington, Virginia USA	www.icmm-cimm2004.osd.mil/congress/
30 Sep - 3 Oct	RACGP Annual Scientific Convention	Grand Hyatt Hotel, Melbourne	www.racgp.org.au
22 - 24 Oct 04	13th AMMA Annual Scientific Conference	Rydges Lakeside Hotel, Canberra ACT	www.amma.asn.au
16 - 20 May 05	14th World Congress on Disaster and Emergency Medicine	Edinburgh, Scotland	www.wcdem2005.org

AMMA ON THE NET

Conferences:	Medical Conferences	www.pslgroup.com/medconf.htm
Journals:	Medical Journal of Australia	www.mja.com.au
	New Scientist	www.newscientist.com
	Journal Watch	www.jwatch.org
Military Medicine:	AMMA	www.amma.asn.au
	AMSUS	www.amsus.org
	Armed Forces Infectious Diseases Society	www.wramc.amedd.army.mil/afids/links.htm
	Defence Health Service	www.defense.gov.au/dpe/dhs/
	Association of Military Osteopathic Physicians and Surgeons	http://www.amops.org/
	Navy Corpsman	www.corpsman.com
	Finnish Museum of Military Medicine	www.travel.fi/int/mmm/
	Henry Jackson Foundation for the Advancement of Military Medicine	http://scoop.hjf.org/
	International Association of Military Flight Surgeon Pilots	www.geocities.com/Pentagon/2265
	Military Medical Links	http://flash.lakeheadu.ca/~cfms/links.html
Disaster Medicine:	Disaster Preparedness and Management Unit	http://health.wa.gov.au/disaster
Professional Colleges:	ANZCA	www.anzca.edu.au
	RACGP	www.racgp.org.au
	RACMA	www.racma.org.au
	RACP	www.racp.edu.au
	RACS	www.racs.edu.au

INSTRUCTIONS FOR AUTHORS

Australian Military Medicine welcomes articles and other contributions on all aspects of military health care. Articles submitted may be subject to peer review. Articles must be offered exclusively to *Australian Military Medicine* for publication. Articles which have been published elsewhere will only be considered if prior approval has been received from the original publisher and they are of importance to the field of military medicine. All accepted manuscripts will be subject to editing.
Contributions should be sent to:

The Editor
Australian Military Medicine
17 Laguna Rise
Mullaloo, WA 6027
agrobert@bigpond.net.au

MANUSCRIPT REQUIREMENTS

One hard copy and one electronic copy of the manuscript should be submitted. The typed copy should be typed double-spaced and single-sided on A4 paper. The electronic copy should be on disk or sent by e-mail. The text in both hard and electronic copies should be unformatted. The electronic copy may be in any common word-processor format.

Contributions should be between 500 and 5000 words in length. Letters to the Editor should not exceed 500 words or 10 references. The Editor may consider any contributions outside these limits. Any articles reporting on human subjects involved in experiments must contain evidence of approval by the relevant institutional ethics committee.

The title page should include the article title; list of authors, including details of their full name, military rank, postnominals, position and institutional address; and, preferably, an abstract of the article (150-200 words). Contact details for the principal author, including postal address, e-mail address, telephone and fax numbers, should also be included.

Headings and sub-headings should be consistent throughout the article and conform with articles previously published in the Journal. No text, references, or legends to figures or tables, should be underlined.

Illustrations, figures and pictures should not be embedded in the document. Their intended position, however, should be clearly indicated. Illustrations and pictures should be saved as separate documents in high resolution (300dpi) TIFF or JPEG formats. Tables may be embedded in the paper.

Photographs may be black-and-white or colour. They should be provided in soft-copy, preferably as high resolution (300dpi) TIFF or JPEG files, but may be provided as hard-copy. Slides must be converted to soft-copy graphics files or to photographs.

Abbreviations mean different things to different readers. Abbreviations are only to be used after the complete expression and the abbreviation in brackets has appeared. For example, the Australian Defence Force (ADF) may then be referred to as the ADF.

SI units are to be used for all articles. Any normal ranges should also be included.

References should be in accordance with the "Vancouver" system (see *MJA* 1991; 155: 197-202, or www.mja.com.au/public/information/ uniform.html). References in the text should be numbered consecutively as they are cited and should appear as superscript numbers (e.g. text[1,2]). References are collated at the end of the article. Annotation of the references should accord with the abbreviations used in *Index Medicus*. Where there are seven or more authors, list only the first three then use *et al*. Authors are responsible for reference accuracy. An example of the reference system is as follows:

1. Quail G. Asthma in the military. *Aust Mil Med* 2000; 9(3):129-137.
2. Bowden M. *Black Hawk Down*. New York: Atlantic Monthly Press; 1999.

Reprinting of articles may be authorised by the Editor, with the author's consent, if an acknowledgment, quoting both the Journal and the original date of publication, is printed with the article.

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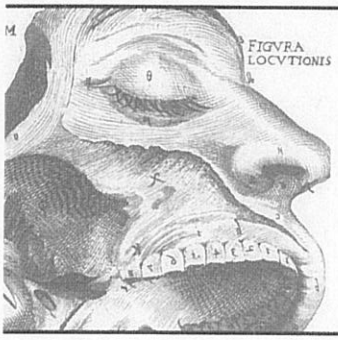

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*Peer Reviewed Articles