

Specialist Medical Review Council

Reasons for Decisions

Section 196W

Veterans' Entitlements Act 1986

**Re: Statements of Principles Nos. 5 and 6 of 2008
In Respect of Posttraumatic Stress Disorder**

Requests for Review Declaration No. 23

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SUMMATION

1. In relation to the Repatriation Medical Authority (the RMA) Statement of Principles No. 5 of 2008 concerning posttraumatic stress disorder and death from posttraumatic stress disorder, made under subsection 196B(2) of the *Veterans' Entitlements Act 1986* (the VEA), the Specialist Medical Review Council (the Council) under subsection 196W of the VEA:

DECLARES that there is sound medical-scientific evidence on which the RMA could have relied to amend the Statement of Principles to include the factors set out below;

DIRECTS the RMA to amend Statement of Principles No. 5 of 2008 by including the following factors for each of clinical onset and clinical worsening:

(a) Having a perception of threat and/or harm to the integrity of the self as a consequence of being in what:

- (i) the individual concerned; and
- (ii) a reasonable person in the circumstances of that individual would have;

considered to be any or all of a threatening, hostile, hazardous and/or menacing situation and/or environment.

Having a perception of threat and/or harm to the integrity of:

- (i) a significant other; and/or
- (ii) other persons known to the individual or with whom the individual concerned has had contact in the discharge of that individual's duties and/or responsibilities;

as a consequence of the individual concerned and the persons in (i) and/or (ii) being in the same or similar circumstances as the individual concerned which:

- (iii) the individual concerned; and
- (iv) a reasonable person in the circumstances of that individual would have;

considered to be any or all of a threatening, hostile, hazardous and/or menacing situation and/or environment but excluding a perception engendered from viewing or listening to mass media (unless such viewing or listening is part of that individual's duties and/or responsibilities).

2. In relation to the RMA Statement of Principles No. 6 of 2008 concerning posttraumatic stress disorder and death from posttraumatic stress disorder, made under subsection 196B(3) of the VEA the Council under subsection 196W of the VEA:

DECLARES that the sound medical-scientific evidence available to the RMA is insufficient to justify any amendment to the Statement of Principles to include as factors exposure to malevolent environment and/or perceived threat or any other factor.

3. In addition, the Council:

REMITTS both Statements of Principles Nos. 5 and 6 of 2008 concerning posttraumatic stress disorder and death from posttraumatic stress disorder to the RMA, and

DIRECTS the RMA to conduct a new investigation as soon as reasonably practicable, taking into account whatever new information has become available since both Statements of Principles were determined in 2008, including but not limited to the DSM-5¹ in addition to the information that was available to the RMA when Statements of Principles Nos. 5 and 6 were determined.

THE SPECIALIST MEDICAL REVIEW COUNCIL

4. The Council is a body corporate established under section 196V of the VEA, and consists of such number of members as the Minister for Veterans' Affairs determines from time to time to be necessary for the proper exercise of the function of the Council as set out in the VEA. The Minister must appoint one of the Councillors to be the Convener.
5. When a review is undertaken, three to five Councillors selected by the Convener constitute the Council. When appointing Councillors, the Minister is required to have regard to the branches of medical science expertise that would be necessary for deciding matters referred to the Council for review.
6. Clinical Associate Professor Jonathan Phillips AM, FRANZCP was the Convener of the Council for this review until 30 June 2012 when his appointment as Convener expired. Professor Charles Guest, the new Convener of the Council, appointed Professor Jonathan Phillips as Presiding Councillor for this review on and from 1 July 2012. Professor Phillips is a psychiatrist involved in three separate areas of practice, offering consultancy advice to health services and other bodies. Professor Phillips has a substantial clinical practice and is often called upon to provide medico-legal advice and opinion, and holds academic positions at three universities. He is

¹ *Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5™)* American Psychiatric Association 2013.

a past President of the Australian & New Zealand College of Psychiatrists and a past Chair of the Committee of Presidents of the Australian Medical Colleges.

The other members of the Council were:

- (i) Scientia Professor Richard Bryant BA, MClin Psych, PhD,
Professor Bryant is Professor at the University of New South Wales, Faculty of Science, School of Psychiatry. He is also an ARC (Australian Research Council) Laureate Fellow. Professor Bryant's research areas include post-traumatic stress disorder and anxiety.
- (ii) Professor Helen Herrman MD, MBBS, BMed Sci, FFPH (UK), FRANZCP, FAFPHM
Professor Herrman is Professor of Psychiatry at Orygen Youth Health Research Centre (OYHRC), the Centre for Youth Mental Health, the University of Melbourne, and Director of the WHO Collaborating Centre for Mental Health in Melbourne.
- (iii) Professor Alexander McFarlane AO MBBS (Hons), MD, FRANZCP, Dip Psychother. (GPCAPT RAAFSR)
Professor McFarlane is Director of the Centre for Traumatic Stress Studies at the University of Adelaide [Professor of Psychiatry] and past President of the International Society of Traumatic Stress Studies.
- (iv) Professor Derrick Silove MB ChB (Hons.I), MD, FRANZCP
Professor Silove is Professor of Psychiatry, School of Psychiatry, University of New South Wales; Director, Psychiatry Research and Teaching Unit, Liverpool Hospital.

THE LEGISLATION

7. The legislative scheme for the making of Statements of Principles is set out in Parts XIA and XIB of the VEA. Statements of Principles operate as templates that are ultimately applied by decision-makers in determining individual claims for benefits under the VEA and the *Military Rehabilitation and Compensation Act 2004* (the MRCA) ².

² See sections 120, 120A and 120B of the VEA and sections 335, 338 and 339 of the MRCA.

8. Fundamental to Statements of Principles is the concept of 'sound medical-scientific evidence', which is defined in section 5AB(2) of the VEA. Information about a particular kind of injury, disease or death is taken to be sound medical-scientific evidence if:
- (a) the information
 - (i) is consistent with material relating to medical science that has been published in a medical or scientific publication and has been, in the opinion of the Repatriation Medical Authority, subjected to a peer review process; or
 - (ii) in accordance with generally accepted medical practice, would serve as the basis for the diagnosis and management of a medical condition; and
 - (b) in the case of information about how that injury, disease or death may be caused meets the applicable criteria for assessing causation currently applied in the field of epidemiology³.
9. The functions of the Council are set out in section 196W of the VEA. In this case, the Council was asked (under section 196Y of the VEA) to review the contents of Statement of Principles No. 5 of 2008, in respect of posttraumatic stress disorder and death from posttraumatic stress disorder, being a Statement of Principles determined by the RMA under section 196B(2)⁴ of the VEA ('the reasonable hypothesis test').

³ This has been held to mean 'information which epidemiologists would consider appropriate to take into account' see *Repatriation Commission v Vietnam Veterans' Association of Australia NSW Branch Inc* (2000) 48 NSWLR 548 (the New South Wales Court of Appeal decision) per Spigelman CJ at [117].

⁴ Section 196B(2) provides:

If the Authority is of the view that there is sound medical-scientific evidence that indicates that a particular kind of injury, disease or death can be related to:

- (a) operational service rendered by veterans; or
- (b) peacekeeping service rendered by members of Peacekeeping Forces; or
- (c) hazardous service rendered by members of the Forces; or
- (caa) British nuclear test defence service rendered by members of the Forces; or
- (ca) warlike or non-warlike service rendered by members;

the Authority must determine a Statement of Principles in respect of that kind of injury, disease or death setting out:

- (d) the factors that must as a minimum exist; and
- (e) which of those factors must be related to service rendered by a person;

before it can be said that a reasonable hypothesis has been raised connecting an injury, disease or death of that kind with the circumstances of that service.

10. Pursuant to section 196W (3A) of the VEA the Council also reviewed the contents of Statement of Principles No. 6 of 2008, in respect of posttraumatic stress disorder and death from posttraumatic stress disorder, being a Statement of Principles determined by the RMA under section 196B(3)⁵ of the VEA ('the balance of probabilities test').
11. Specifically, the President of an organisation representing veterans, members of the Forces, and members of Peacekeeping Forces (the Applicant) contended that there was sound medical-scientific evidence upon which the RMA could have relied to amend Statement of Principles No. 5 of 2008 and the Council considered the same contentions in respect of Statement of Principles No. 6 of 2008.
12. In conducting its review, the Council must review all the information that was available to (before) the RMA at the time it determined, amended, or last amended the Statement of Principles (the relevant times) and is constrained to conduct its review by reference to that information only.⁶
13. Under section 196W of the VEA, the Council can only reach the view that a Statement of Principles should be amended on the basis of sound medical-scientific evidence.⁷

BACKGROUND

14. On 20 December 2007, the RMA under subsections 196B(2) and (3) of the VEA determined Statements of Principles being Instruments respectively numbered 5 and 6 of 2008 in respect of posttraumatic stress disorder and

⁵ Section 196B(3) provides:

If the Authority is of the view that on the sound medical-scientific evidence available it is more probable than not that a particular kind of injury, disease or death can be related to:

- (a) eligible war service (other than operational service) rendered by veterans; or
- (b) defence service (other than hazardous service and British nuclear test defence service) rendered by members of the Forces; or
- (ba) peacetime service rendered by members;

the Authority must determine a Statement of Principles in respect of that kind of injury, disease or death setting out:

- (c) the factors that must exist; and
- (d) which of those factors must be related to service rendered by a person;

before it can be said that, on the balance of probabilities, an injury, disease or death of that kind is connected with the circumstances of that service.

⁶ *Vietnam Veterans' Association (NSW Branch) Inc v Specialist Medical Review Council and Anor* (full Federal Court decision) (2002) 72 ALD 378 at [35] per Branson J.

⁷ See [8].

death from posttraumatic stress disorder (PTSD).⁸ The Statements of Principles took effect from 9 January 2008.

15. In accordance with section 42 of the *Legislative Instruments Act 2003* the Statements of Principles:
- were registered on the Federal Register of Legislative Instruments on 4 January 2008
 - tabled in the House of Representatives and in the Senate on 12 February 2008.

Application for review by the Council

16. An application dated 15 January 2008, for review of Statement of Principles No. 5 of 2008, was received by the Council on 23 January 2008. The Application stated as the Reasons for Review:

The definition of a stressor does not fully reflect the definition contained in the DSM-IV- TR.

For example DSM -IV TR refers to 'actual or threatened death' which allows for perception as a stressor...SOP 5 of 2008 definition refers to 'experiencing life-threatening event' which precludes perception.⁹

Further to the above the definition of stressors should include the chronic threat of serious injury or death and prolonged experience of malevolent environments.

17. In a letter from the Council dated 21 December 2010 the Applicant was asked for clarification of its contentions, including if it sought:
- an amendment to any existing factor/s;
 - the excision of any existing factor/s; and/or
 - the insertion of any new factor/s;
- in and/or from the Statements of Principles.

⁸ In these Reasons the Council uses the acronym 'PTSD'. It uses that acronym even if text being quoted used the acronym PtSD, and for ease of reading the Council has not individually identified those occasions.

⁹ The definition of the disease in Statements of Principles Nos. 5 and 6 of 2008 provides in clause 3(b) of each Statement of Principles that:

For the purposes of this Statement of Principles, [PTSD] means a psychiatric condition meeting the following diagnostic criteria (deprived from DSM-IV-TR):

- (A) the person has been exposed to a traumatic event in which:
- (i) the person experienced, witnessed, or was confronted with an event or events that involved actual or threatened death or serious injury, or a threat to the physical integrity of self or others; and
 - (ii) the person's response involved intense fear, helplessness, or horror; and
-

The definition in paragraph 9(a) of each of the Statements of Principles of a category 1A stressor means one or more of the following severe traumatic events:

- (a) experiencing a life-threatening event

18. The Applicant responded in a letter dated 3 January 2011:

Definition of Disease: posttraumatic Stress disorder

We ask the words in definition 3 (b) (ii)¹⁰ be deleted and replaced with the words:

“The person experienced a chronic threat of serious injury or death and prolonged experience of malevolent environments”.

Other definitions.

Inclusion in either category 1A or 1B definition of stressors the following words:¹¹

Experiencing a chronic threat of serious injury or death and prolonged experience of malevolent environments.

19. The Applicant in a letter dated 5 September 2012 and in its oral submissions complementing its written submission clarified its position as follows:

the definition of stressors should include the chronic threat of serious injury or death **or** prolonged experience of malevolent environments [emphasis added].

20. Pursuant to section 196ZB of the VEA, the Council published in the Gazette a Notice of its Intention to carry out a review of all the information available to the RMA about PTSD, and inviting persons or organisations so authorised to

¹⁰ The Council understood this comment to refer to paragraph 3(b)A(ii) in each of Statements of Principles Nos. 5 & 6 of 2008 as set out above, ie "the person's response involved intense fear, helplessness, or horror."

¹¹ Existing factor 6(a) in each of the Statements of Principles provides for:

- (a) experiencing a category 1A stressor before the clinical onset of [PTSD].

A category 1A stressor is defined in paragraph 9 of each of the Statements of Principles as meaning one or more of the following severe traumatic events:

- (a) experiencing a life-threatening event;
(b) being subject to a serious physical attack or assault including rape and sexual molestation; or
(c) being threatened with a weapon, being held captive, being kidnapped, or being tortured.

Existing factor 6(b) in each of the Statements of Principles provides for:

- (b) experiencing a category 1B stressor before the clinical onset of [PTSD].

A category 1B stressor is defined in paragraph 9 of each of the Statements of Principles as meaning one of the following severe traumatic events:

- (a) being an eyewitness to a person being killed or critically injured;
(b) viewing corpses or critically injured casualties as an eyewitness;
(c) being an eyewitness to atrocities inflicted on another person or persons;
(d) killing or maiming a person; or
(e) being an eyewitness to or participating in, the clearance of critically injured casualties.

make submissions to the Council.¹² The Council gazetted three subsequent notices as to the dates by which written submissions must be received by the Council.¹³

The information sent by the RMA to the Council

21. The RMA is obliged under section 196K of the VEA to send to the Council all the information that was available to it (the RMA) at the relevant times. That comprises all the information available to the RMA when it determined the original Statements of Principles in 1994, and all the information subsequently available at all times when the Statements of Principles have been amended, or revoked and replaced, up to and including that information which was available in December 2007 when the RMA determined the Statements of Principles under review. In other words, within 28 days after being notified that the Council has been asked to conduct a review, the RMA must send to the Council all the information in respect of PTSD that was in the possession of the RMA at the time it (the RMA) made the decision that triggered the Council's review.
22. Within the 28 day period specified by section 196K of the VEA, the RMA by letter dated 28 April 2008 sent to the Council the information the RMA advised was available to (before) it at the relevant times, as listed in **Appendix B**. By letter dated 26 February 2009 and email dated 26 March 2010 the RMA clarified and confirmed the information that was available to the RMA at the relevant times.
23. By agreement between the RMA and the Council, information the RMA advised was available to (before) it at the relevant times is posted on a secure website (referred to as FILEForce). It is made accessible by the Council to the Repatriation Commission and the Military Rehabilitation and Compensation Commission (the Commissions), the Applicant and other participants in the review via confidential passwords.

Proposed scope of review and proposed pool of information

24. On 2 September 2011, the Council wrote to the Applicant and the Commissions advising them of the Council's preliminary decisions on the proposed scope of the review and proposed pool of information.
25. The Applicant and the Commissions were invited to make any written comments as to the Council's preliminary decisions on the proposed scope of review and proposed pool of information by close of business on 25

¹² Gazette Notice number 32 of 13 August 2008, page 2193.

¹³ Gazette Notice number 30 of 5 August 2009, page 1961 extended the closing date for written submissions to 31 March 2010. Gazette Notice number 2 of 20 January 2010, page 94, further extended the closing date for written submissions to 31 December 2010 and Special Gazette Notice number 231 of 30 December 2010 further extended the closing date for written submissions to 28 February 2011.

September 2011 and to make any oral comments at the hearing of oral submissions complementing the written submissions.

26. By letter dated 5 September 2011 the Applicant made written comments on the Council's preliminary decisions on the proposed scope of review and proposed pool of information (see below).
27. The Commissions did not make any written comments on the Council's preliminary decisions on the proposed scope of review and proposed pool of information. In their oral submission complementing their written submission, the Commissions expressed agreement with the Council's preliminary decision about the scope of review:

in relation to the diagnosis and maintaining the diagnosis in terms of DSM IV TR.¹⁴

Preliminary decision on the proposed scope of review

28. Taking account of the exchange of correspondence referred to above clarifying the Applicant's contentions, the Council's preliminary decision on the proposed scope of review was that:

without limiting the scope of the Council's review of (some or the whole of) the contents of the Statements of Principles, the Council presently proposes to have particular regard to whether there was sound medical-scientific evidence upon which the RMA could have relied to amend Statements of Principles Nos. 5 and 6 of 2008 in any or all of the following ways for the clinical onset and/or worsening of PTSD:

1. as contended by the Applicant in respect of Statement of Principles No. 5 of 2008 and as proposed by the Council in respect of Statement of Principles No. 6 of 2008 given section 196W(3A) of the VEA:

by adding to the definitions of either category 1A stressor or category 1B stressor in clause 9 ('Other definitions'):¹⁵

the person experienced a chronic threat of serious injury or death or prolonged experience of malevolent environments;^{* 16}

¹⁴ Transcript of oral submissions complementing the written submissions at page 15.

¹⁵ As noted above in footnote 11, the definitions of Category 1A stressor and Category 1B stressor in clause 9 of each of Statements of Principles Nos. 5 and 6 of 2008 are in the same terms.

¹⁶ See [16] - [19] above.

* In the event that the Council were to decide that there was sufficient sound medical-scientific evidence on which the RMA could have relied to make this amendment, or an amendment in similar terms, the Council may decide to define 'malevolent environments'. While the Council has not formed any view as to the contended factor/s or any potential definition/s, the Council notes that The Macquarie Dictionary (revised edition 1985) definition of:

'malevolent' is:

wishing evil to another or others; showing ill will; or evil or maligned (sic) in influence.

'environment' includes:

the aggregate of surrounding things, conditions, or influences;
the particular influences on personal development as work conditions, home situation, etc;

and/or

2. as proposed by the Council in respect of Statements of Principles Nos. 5 and 6 of 2008:

by adding to clause 6 a new clinical onset and/or worsening factor/s:

the person experienced a reasonable perception of the threat of serious injury or death as the result of an actual event; and/or

the person experienced, witnessed or was confronted with a threatening or hazardous or menacing environment.

Council's preliminary decision on matters not to be included in the proposed scope of review

29. The Council noted that the Applicant in its letter of 3 January 2011 contended that the definition of PTSD in clause 3(b) of Statement of Principles No. 5 of 2008¹⁷ should be amended as follows:

To delete from clause 3(b)(A)(ii);

the person's response involved intense fear, helplessness, or horror¹⁸

and to substitute:

the person experienced a chronic threat of serious injury or death or prolonged experience of malevolent environments.¹⁹

¹⁷ As noted above in footnote 9, clause 3(b) of each of Statements of Principles Nos. 5 and 6 of 2008 are in the same terms.

¹⁸ See footnote 9 above.

¹⁹ As explained in [16] - [19] above, the Applicant originally specified 'and' but subsequently clarified in its letter of 5 September 2012, and re-confirmed in its oral submissions complementing its written submissions, that it contended 'or'.

30. The Council's preliminary view was that this contended amendment (to change the existing 'and' to 'or') at the end of existing paragraph 3b(A)(i) of both Statements of Principles Nos. 5 and 6 of 2008 should not be within the proposed scope of the review.
31. The Council's preliminary view was that the interpretation of the words in clause 3(b) of the Statements of Principles was both a medical-science matter and a legal matter. The Council noted that a submission on a legal matter is precluded by section 196ZA(6) of the VEA.
32. To the extent submissions about the words to be included in the definition in clause 3(b) of the Statements of Principles were:
- submissions about the information available to the RMA when it determined, amended, or last amended the Statements of Principles (the relevant times) and not submissions on a legal matter; and
 - based on the Council's preliminary reading of the information available to the RMA at the relevant times;
- the Council's preliminary view was that the definition of PTSD in clause 3(b) of the Statements of Principles should remain consistent with the definition of the disease in DSM-IV-TR.²⁰ In the Council's preliminary view this would not be the case were the Applicant's contentions concerning clause 3(b) of the Statements of Principles to be considered within the proposed scope of the review.

Preliminary decision on the proposed pool of information

33. The Council's preliminary decision on the proposed pool of information was that the pool of information should be identified from the information that was available to (before) the RMA at the relevant times; sent to the Council by the RMA under section 196K; and should comprise sound medical-scientific evidence as defined in section 5AB(2) of the VEA being information which:
- epidemiologists would consider appropriate to take into account; and
 - in the Council's view, 'touches on' (is relevant to) the proposed scope of review.
34. A copy of the preliminary list of the proposed pool of information was forwarded to the Applicant and the Commissions, and is attached at **Appendix A**.

²⁰ As noted above, clause 3(b) of each of Statements of Principles Nos. 5 and 6 of 2008 provides that PTSD 'means a psychiatric condition meeting the ... diagnostic criteria **(derived from DSM-IV-TR)** ...' (emphasis added).
DSM-IV-TR is the *Diagnostic and Statistical Manual of Mental Disorders* (Fourth Edition revised) American Psychiatric Association (2000) Washington.
By email dated 26 March 2010 the RMA confirmed that DSM-IV-TR was available information.

ORAL SUBMISSIONS COMPLEMENTING THE WRITTEN SUBMISSIONS

35. The Council held a meeting to hear oral submissions complementing the written submissions on Wednesday 21 March 2012. Mr M and Dr Brian O'Toole on behalf of the Applicant and a Medical Officer with the Department of Veterans' Affairs representing the Commissions made oral submissions complementing their respective written submissions.

SUBMISSIONS

The Applicant's Submissions

36. The Applicant's contentions as clarified are set out at [16] - [19] above.
37. On 1 June 2010 the Applicant submitted a paper by Dr Brian I. O'Toole dated May 2009 as its comprehensive written submission.²¹ The Applicant's oral submissions complementing its written submission were made by Mr M and Dr O'Toole.
38. Mr M made a brief statement at the hearing of oral submissions complementing the Applicant's written submission based on his personal service experience. He provided examples of exposures he had experienced which he submitted supported the Applicant's contentions 'especially relating to malevolent environment.'²²

...operating in areas that are heavily mined. ...their own mines, which the enemy...relocated... operating in these areas was very stressful, especially if your unit has already experienced an incident...troops [were] very, very stressed out when sent in areas which were mined.

Fear of being ambushed. ... Ready to initiate an ambush. You could lay in an ambush area for days...and this can be very stressful ... and also it was a very malevolent environment, and especially in the wet season you were out in monsoonal rains for day after day in the ambush position... And that could be out on patrol, or the enemy initiating an attack on your position at night or during the day when you were on location.

The other things that [troops] worried about [were] incoming enemy fire from mortars.

...engineers who actually lay mines, clear mines...

...incoming – outgoing – your own fire. When you are in a position and you are calling your own artillery fire in, there is always concerns that that could land on top of you.²³

...I believe that the environment does play a role. If you are in a stressful combat situation...like a low stress area and you're hungry, you're tired, you're

²¹ Paper by Dr Brian I. O'Toole, May 2009 titled: 'War Zone Exposures and PTSD'.

²² Transcript of oral submissions at page 9.

²³ Transcript of oral submissions at page 9.

wet, you're miserable, you're pulling yourself up a hill with a heavy load on your back, and they have an issue with the mortar and all that. ...I believe it does aggravate the stress that you're under.²⁴

39. In conclusion Mr M stated:

we believe that DSM IV does not address the long-term stressor, and/or does not address a malevolent environment.²⁵

40. Dr O'Toole's paper, submitted on behalf of the Applicant, examined both medical-science that was available to ('before') the RMA at the relevant times and medical-science that was 'new information' and so could not be taken into account by the Council in determining the review.²⁶

41. Dr O'Toole submitted that:

There is little doubt that direct exposure to combat increases the likelihood of PTSD in soldiers (at p.1).

42. Dr O'Toole provided references²⁷ in support of the disorder being recognised 'since time immemorial' and submitted that PTSD:

...may persist for many years, into old age...²⁸ (at p.1).

...it is not only warlike service that can engender PTSD, as the disorder has also been described in peacekeepers in Bosnia, in Cambodia and in Somalia, from country of origin forces as diverse as the USA, the Netherlands, and the United Kingdom...²⁹ (at p.1)

²⁴ Transcript of oral submissions at page 24.

²⁵ Transcript of oral submissions at page 10.

²⁶ Regardless of the way in which articles were referenced by the participants in the review, the Council has provided the full citations of articles in accordance with the 'Author -date' system described in the Commonwealth of Australia 2002, *Style manual*, 6th edn, John Wiley & Sons Australia Ltd, pp. 187-232.

In its footnotes the Council indicates if information cited by the participants is new information.

²⁷ At page 1 of Dr O'Toole's paper. See Endnote.

²⁸ See Endnote.

²⁹ Bramsen, I et al. 2001, 'Consistency of self reports of traumatic events in a population of Dutch peacekeepers: Reason for optimism', *Journal of Traumatic Stress*, vol. 14, no. 1, pp. 733 – 740.

This information was not available to the RMA at the relevant times, and so could only be considered by the Council as new information.

Litz, BT et al. 1997, 'Posttraumatic stress disorder associated with peacekeeping duty in Somalia for US military personnel', *American Journal of Psychiatry*, vol. 154, pp. 178-184.

Wessely et al. 2003. The full citation for this article was not provided to the Council and this information was not available to the RMA at the relevant times, and so could only be considered by the Council as new information.

Soldiers are not the only people to succumb: It has been reported in Iranian civilians subject to chemical warfare...³⁰ (at p.1).

43. Dr O'Toole made submissions on the basis of his interpretation of the following articles that:

While a confrontation with death lies at the heart of the experience, and is easily satisfied by direct combat experiences and common battlefield exposures, evidence is mounting that PTSD and other psychiatric disorders (anxiety, depression) can arise from exposures that are not congruent with direct combat exposures.

...published literature ... address[es] the following themes:

- (i) the initial scientific attempts to discover the prime and essential components of war zone exposures;
- (ii) the changing nature of war which has dictated a widening of this search;
- (iii) separate identifiable components of war-zone exposures have been identified and their independent effect on PTSD symptoms has begun to be examined;
- (iv) complications caused by the various formulations of PTSD make difficult the task of correlating observed and defined psychiatric disorder with a set of non-traditional combat stressors; and ...
- (v) a particular example of a non-traditional combat stressor – duration of time spent in a malevolent environment – is examined for its association with PTSD (at pp. 1-2).

a. National Vietnam Veterans Readjustment Study (NVVRS)³¹

The nature of war has changed from open field confrontations between large opposing forces, as occurred in World Wars I and II, to smaller, guerrilla and insurgency actions often taking place in civilian surroundings, as occurred in Vietnam, east Timor, Iraq and Afghanistan.

³⁰ Hashemian, F et al. 2006, 'Anxiety, depression, and posttraumatic stress disorder in Iranian survivors of chemical warfare', *Journal of the American Medical Association*, vol. 296, pp. 560-566.

This information was not available to the RMA at the relevant times, and so could only be considered by the Council as new information.

³¹ The following information was not available to the RMA at the relevant times, and so could only be considered by the Council as new information:

Kulka, RA et al. 1990, *Trauma and the Vietnam Generation. Report of Findings from the National Vietnam Veterans Readjustment Study*, vol. I, New York, Brunner / Mazel.

Kulka, RA, et al. 1990, *The National Vietnam Veterans Readjustment Study, vol. II, Tables of Findings and Technical Appendices*, New York, Brunner / Mazel.

Jordan, BK et al. 1991, 'Lifetime and current prevalence of specific psychiatric disorders among Vietnam veterans and controls', *Archives of General Psychiatry*, vol. 48, pp. 207-215.

Schlenger, WE et al. 1992, 'The prevalence of post-traumatic stress disorder in the Vietnam generation, A multimethod, multisource assessment of psychiatric disorder', *Journal of Traumatic Stress*, vol. 5, pp. 333-363.

While traditional combat has been the focus of many investigations, it is now recognised that other war zone exposures can also be traumatogenic. (at p. 2).

- b. Card 1983; Decoufle et al. 1992 (sic); Fontana et al. 1992; Gallops et al. 1981; Grady et al. 1989; Keane et al 1989; Snow et al. 1988; Wilson & Krauss 1985.³²

...before...initial results of the NVVRS were published, American studies were ongoing into aspects of war zone stressors, in an attempt to delineate the essential components of what constituted a stressor. Different studies showing a relation between combat and PTSD ... have not uniformly agreed upon the construct of combat stress and the relevant dimensions of the combat or war-zone stressor experience, and thus have used different scale items ...

³² Apart from Fontana, A et al. 1992 the following information was not available to the RMA at the relevant times, and so could only be considered by the Council as new information.
Card, J 1983, *Lives After Vietnam. The Personal Impact of Military Service*, Lexington, MA: Lexington Books.
Decoufle, P et al. 1987, 'Self-reported health status of Vietnam veterans in relation to perceived exposure to herbicides and combat', *American Journal of Epidemiology*, vol. 135, pp. 312-323.
Fontana, A et al. 1992, 'War zone traumas and posttraumatic stress disorder symptomatology', *Journal of Nervous and Mental Disease*, vol. 180, pp. 748-755.
Gallops MS, et al. 1981, 'Revised combat scale', (at p. 125), in Laufer, RS et al. eds.1981, *Legacies of Vietnam*, Washington DC, US Government Printing Office.
Grady, DA et al. 1989, 'Dimensions of war zone stress: an empirical analysis', *Journal of Nervous and Mental Disease*, vol. 177, pp. 347-350.
Keane, TM et al. 1989, 'Clinical evaluation of a measure to assess combat exposure', *Psychological Assessment*, vol. 1, pp. 53-55.
Snow, BR et al. 1988, 'Post-traumatic stress disorder among American Legionnaires in relation to combat experience in Vietnam, Associated and contributing factors', *Environmental Research*, vol. 47, pp. 175-192.
Wilson, JP & Krauss, GE 1985, 'Predicting post-traumatic stress disorder among Vietnam veterans', in Kelly, E ed. *Post-Traumatic Stress Disorder and the War Veteran Patient*, New York, Brunner / Mazel.

- c. Card, J 1983; Egendorf, A et al 1979 (sic); Laufer, RS et al. eds.1981; Wilson, JP & Krauss, GE 1985; Stellman & Stellman 1988; Goldberg, J et al. 1990. ...³³

... Despite this lack of uniformity, studies which have measured intensity of exposure and intensity of disorder have generally demonstrated a dose-response relationship (at p. 2).

- d. Grady, DA et al. 1989

... talked about being a target as being the essential experience that drives a post-traumatic stress disorder from within a combat zone. ... there are all sorts of harsh environments that occur right around the world without resulting in post-traumatic stress disorder. However, the malevolent environment where you are threatened with death as opposed to mere discomfort, I think constitutes a different set of circumstances.³⁴

44. Dr O'Toole contended that the Legacies of Vietnam study reported three dimensions of combat.

- a. Laufer et al. 1984³⁵

...direct exposure to combat, witnessing abusive violence, and participation in abusive violence...had differential effects on patterns of symptoms of PTSD (at p. 2).

³³ Apart from Goldberg, J et al. 1990 the following information was not available to the RMA at the relevant times, and so could only be considered by the Council as new information. Card, J 1983, *Lives After Vietnam. The Personal Impact of Military Service*, Lexington, MA: Lexington Books.

Egendorf, A et al. 1981, *Legacies of Vietnam: Comparative Adjustment of Veterans and Their Peers*. Washington, DC: Center for Policy Research, Inc.

Laufer, RS et al. eds. 1981, *Legacies of Vietnam*, Washington DC, US Government Printing Office.

Wilson, JP & Krauss, GE 1985, 'Predicting post-traumatic stress disorder among Vietnam veterans', in Kelly, E ed. *Post-Traumatic Stress Disorder and the War Veteran Patient*, New York, Brunner / Mazel.

Stellman & Stellman 1988. The full citation for this article was not provided to the Council.

Goldberg, J et al. 1990, 'A twin study of the effects of the Vietnam war on posttraumatic stress disorder, *Journal of the American Medical Association*, vol. 263, pp. 1227-1232.

³⁴ See at page 22 of the transcript of complementary oral submissions.

³⁵ Laufer RS, et al. 1984, 'War stress and trauma: The Vietnam veteran experience', *Journal of Health and Social Behavior*, vol. 25, pp. 65-85.

This information was not available to the RMA at the relevant times, and so could only be considered by the Council as new information.

b. Yaeger et al. 1984 ³⁶

...increased combat exposure resulted in increased symptom recruitment (at p. 2).

c. Laufer, Brett and Gallops 1985a ³⁷

each [of the three matters mentioned in [44a]] was differentially associated with intrusion and denial (at p. 2).

d. Laufer et al. 1985b ³⁸

Participation in combat *per se* was related to total stress symptoms, hyperarousal, intrusion and numbing symptoms in the year prior to interview, while exposure to atrocities was related only to current imagery, and participation in atrocities was related only to current hyperarousal (at p. 2).

e. Breslau & Davis 1987 ³⁹

Participation in atrocities...was reported to have an effect on PTSD additionally and independently of total combat exposure (at p. 2).

f. Yehuda Southwick and Geller 1992 ⁴⁰

...participation in atrocities was significantly related to intrusion, but not avoidance, in contrast to the Legacies study (Laufer et al. 1985b See at [44d] and fn 38) (at p. 2).

³⁶ Yaeger et al. 1984. The full citation for this article was not provided to the Council. This information was not available to the RMA at the relevant times, and so could only be considered by the Council as new information.

³⁷ Laufer RS, et al. 1985a, 'Dimensions of posttraumatic stress disorder among Vietnam veterans', *Journal of Nervous and Mental Disease*, vol. 173, pp. 538-545. This information was not available to the RMA at the relevant times, and so could only be considered by the Council as new information.

³⁸ Laufer RS, et al. 1985b, 'Symptom patterns associated with posttraumatic stress disorder among Vietnam veterans exposed to war trauma *American Journal of Psychiatry* 1985b; 142: 1304-1311. This information was not available to the RMA at the relevant times, and so could only be considered by the Council as new information.

³⁹ Breslau & Davis 1987. The full citation for this article was not provided to the Council. This information was not available to the RMA at the relevant times, and so could only be considered by the Council as new information.

⁴⁰ Yehuda, R et al. 1992, 'Exposure to atrocities and severity of chronic posttraumatic stress disorder in Vietnam combat veterans', *American Journal of Psychiatry*, vol. 149, pp. 333-336. This information was not available to the RMA at the relevant times, and so could only be considered by the Council as new information.

45. Dr O'Toole submitted ⁴¹ that there was a disparity in measures of war zone and combat exposures; and that findings of a dose-response relationship between stressor exposure and risk of PTSD required interpretation. He suggested that event inventories such as a combat scale may or may not include the precise event that caused an individual's PTSD. Further, he submitted that the traumatic event may be independent of combat, but that combat stress increases vulnerability or that the accumulation of war zone stressors may be as traumatic in some people as a single high impact event in other people. Dr O'Toole provided examples from the literature in support of his contention that there was a disparity in measures of war zone and combat exposures and submitted that other studies investigated stressors and the risk of PTSD by the use of different scales/inventories:

a. O'Toole, BI et al 1999:

the meaning of a scale score derived from the accumulation of experiences of different events therefore is uncertain and ambiguous (at p 3).⁴²

b. Wilson & Krauss 1985 ⁴³

Their stressor inventory provided three factors, a relatively unitary combat scale that they labelled "injury/death" and two other factors ("lack of personal comforts" and "short timer syndrome") (at p. 2).

...exposure to injury / death was found to be associated with each of the different dimensions of PTSD derived from...their self-report inventory, the Vietnam Era Stress Inventory. Combat exposure and lack of comforts were related to depression, physical symptoms, stigmatisation/alienation, sensation-seeking, anger and intimacy conflict, while..."short-time syndrome" was related only to stigmatisation/alienation (at p. 3).

c. Grady, Woolfolk and Budney 1989⁴⁴

⁴¹ At page 3 of his paper.

⁴² O'Toole, BI et al 1999, 'Combat, dissociation, and posttraumatic stress disorder in Australian Vietnam veterans', *Journal of Traumatic Stress*, vol 12, pp 625-640.
This information was not available to the RMA at the relevant times, and so could only be considered by the Council as new information.

⁴³ Wilson, JP & Krauss, GE 1985, 'Predicting post-traumatic stress disorder among Vietnam veterans', in Kelly, E ed. *Post-Traumatic Stress Disorder and the War Veteran Patient*, New York, Brunner / Mazel.

This information was not available to the RMA at the relevant times, and so could only be considered by the Council as new information.

⁴⁴ Grady, DA et al. 1989, 'Dimensions of war zone stress: an empirical analysis', *Journal of Nervous and Mental Disease*, vol. 177, pp. 347-350.

Laufer et al. 1981 and Lund et al. 1984. The full citations for these articles were not provided to the Council (see footnote 33 Laufer, RS et al. eds. 1981).

The above information was not available to the RMA at the relevant times, and so could only be considered by the Council as new information.

...analysed two scales (Laufer et al. 1981; Lund et al. 1984)... They found four factors, described as battlefield engagement 'infantry contact', military casualty or 'death/loss', being responsible for civilian death or being present when acts of abusive violence were committed (but not actually committing them), and being located in forward areas (at p. 3).

...they found that the abusive violence factor accounted for almost twice as much variance as the other factors combined (at p. 3).

d. Fontana Rosenheck and Brett 1992 ⁴⁵

...further differentiated aspects of war stress into those where the victim was a target of another's attempts to kill, or the observer or agent of a traumatic event, or had failed to prevent a preventable adverse event (at p. 3).

Having been a target was related to PTSD symptom profile more than any other role, while having been an agent or having failed to prevent death or injury was related more strongly to general psychiatric stress and suicide attempts, rather than PTSD... Participation in abusive violence was as strongly related to general psychiatric distress as to PTSD and was not related to the numbing symptoms. They concluded that it was being terrified of being killed (as in being a target) that was the subjective experience of war that was associated most strongly with PTSD (at p. 3).

46. As mentioned above Dr O'Toole submitted that the nature of war zone stress had changed since World Wars I and II. He made further submissions about the impact of these changes, on the basis of his interpretation of the following articles:

a. NVVRS ⁴⁶

...described several aspects of war zone stressors: combat, death and injury to others, threat of death to oneself, abusive violence and physical deprivation, loss of meaning and control, but combined these into a single stressor index that was shown to be highly related to risk of PTSD (at pp. 3-4).

⁴⁵ Fontana, A et al. 1992, 'War zone traumas and posttraumatic stress disorder symptomatology', *Journal of Nervous and Mental Disease*, vol. 180, pp. 748-755.

⁴⁶ Kulka, RA et al. 1990, *Trauma and the Vietnam Generation. Report of Findings from the National Vietnam Veterans Readjustment Study*, vol. I, New York, Brunner / Mazel.

Kulka, RA, et al. 1990, *The National Vietnam Veterans Readjustment Study, vol. II, Tables of Findings and Technical Appendices*, New York, Brunner / Mazel.

Jordan, BK et al. 1991, 'Lifetime and current prevalence of specific psychiatric disorders among Vietnam veterans and controls', *Archives of General Psychiatry*, vol. 48, pp. 207-215.

Schlenger, WE et al. 1992, 'The prevalence of post-traumatic stress disorder in the Vietnam generation, A multimethod, multisource assessment of psychiatric disorder', *Journal of Traumatic Stress*, vol. 5, pp. 333-363.

The above information was not available to the RMA at the relevant times, and so could only be considered by the Council as new information.

b. O'Toole, BI et al. 1999 ⁴⁷

...in a war zone such as in Vietnam, an enemy contact may involve exchange of fire and direct threat to life, but also other real death encounters such as directly killing the enemy, seeing comrades being hit by fire, tending to the wounded and dying, both friendly and enemy, and involvement in burial parties. It could also entail long periods on patrol, with the constant threat of enemy ambush or treading on hidden land mines...exposure to enemy threat could come from ambush while on patrols, serving in aggressive operations, driving in convoys, being under attack in Fire Support Bases, flying in helicopters, being on piquet duty particularly at night, being in towns or villages, being in Saigon during Tet, and so on (at p. 4).

47. Dr O'Toole further submitted that Australian soldiers in Vietnam were exposed to longer periods of risk of contact with the enemy than at any time since Gallipoli. He also suggested that the war in Afghanistan, with its exposure to patrols, IEDs,⁴⁸ and being outside the "green zone" in Iraq (with a continuous danger of assault with weapons) brought soldiers into similar constant risk within a civilian populated environment.

These exposures may be as cumulatively traumatic as being directly under fire or being exposed to sights of wounded or dying combatants or civilians (at p. 4).

48. Dr O'Toole cited King et al. 1995, who had: ⁴⁹

...defined four stressor scales: Traditional combat, exposure to atrocities or episodes of extraordinary abusive violence, subjective or perceived threat, and general milieu of harsh and malevolent environment.

...they found that these four representations of war zone stressors were separate and distinct and that:

- (i) traditional combat exposure had no direct effect on PTSD, but acted through the construct of perceived threat,
- (ii) that exposure to atrocities/abusive violence acted directly on PTSD (i.e. not through perceived threat), and that
- (iii) malevolent environment had both a direct effect on PTSD as well as an indirect effect through perceived threat, with malevolent

⁴⁷ O'Toole, BI et al. 1999, 'Combat, dissociation, and posttraumatic stress disorder in Australian Vietnam veterans', *Journal of Traumatic Stress*, vol. 12, pp. 625-640.

This information was not available to the RMA at the relevant times, and so could only be considered by the Council as new information.

⁴⁸ IED – Improvised Explosive Device.

⁴⁹ King, DW et al. 1995, 'Alternative representations of war-zone stressors: Relationships to posttraumatic stress disorder in male and female Vietnam veterans', *Journal of Abnormal Psychology*, vol. 104, pp. 184-196.

environment having the largest effect on PTSD, larger by a factor of four (see Figure 3 and Table 4, p. 192)(at p. 4).

49. Dr O'Toole submitted that the above findings by King et al were supported by subsequent reports.⁵⁰ He submitted that King et al 1999 had 'reinforced the notion that war zone stressors comprised more than traditional combat, being a target and exposure to the dead and dying,' with further support from King et al 1995 in its findings 'that women in the NVVRS⁵¹ who had no direct combat role, were also subject to PTSD and war zone stressors' with similar reported findings for women who served in the Gulf War US military forces.⁵² Dr O'Toole further relied upon his interpretation of the following articles:

a. Fontana & Rosenheck 1999⁵³

...also used the NVVRS data... They described seven dimensions of the stressor experience in Vietnam as: field placement (that is, being in a forward area), traditional combat or fighting, physical conditions, witnessing the death of others, insufficiency of resources (increased vulnerability of one's unit due to exhaustion of munitions and supplies), threat to life, killing, and exposures to atrocities (at p. 4-5).

...they determined...significant paths to their construct of PTSD measured as the composite means of NVVRS PTSD indicators...in addition to significant paths from fighting to killing and thence to PTSD, there were also significant paths from field placement to physical conditions to insufficiency to PTSD, thus confirming that aspects of the malevolent environment contributed directly and indirectly to PTSD (at p.5).

⁵⁰ King, DW et al. 1999, 'Posttraumatic stress disorder in a national sample of female and male Vietnam veterans: Risk factors, war-zone stressors, and resilience-recovery variables' *Journal of Abnormal Psychology*, vol. 108, pp. 164-170 at p. 169.

⁵¹ King, DW et al. 1995, 'Alternative representations of war-zone stressors: Relationships to posttraumatic stress disorder in male and female Vietnam veterans', *Journal of Abnormal Psychology*, vol. 104, pp. 184-196.

⁵² Pierce, PF 1997, 'Physical and emotional health of Gulf War veteran women', *Aviation Space Environmental Medicine*, vol. 68, pp. 317-321.

This information was not available to the RMA at the relevant times, and so could only be considered by the Council as new information.

⁵³ Fontana, A & Rosenheck, R 1999. 'A model of war zone stressors and posttraumatic stress disorder', *Journal of Traumatic Stress*, vol. 12, pp. 111-126.

b. Australian Vietnam Veterans Health Study - AVVHS.⁵⁴

50. The AVVHS selected the 21-item combat exposure index of Wilson and Krauss 1995,⁵⁵ to assess combat exposure. Subjects were a random sample of 1,000 Army members drawn from a 'postings file', created during the Australian 'agent orange' studies.⁵⁶

The most frequent item exposures assessed by this scale were: risk of being killed or injured (87.4%), seeing dead enemy (73.1%), seeing Australian wounded (68.8%), making contact with the enemy (68.8%), seeing enemy wounded (62.3%), and firing their weapon at the enemy (58.3%).

In a factor analysis...four factors were identified: the first included traditional combat including enemy contact, firing weapons, seeing Vietnamese killed,

⁵⁴ O'Toole, BI et al. 1996, 'The Australian Vietnam Veterans Health Study I, Study design and response bias', *International Journal of Epidemiology*, vol. 25, pp. 307-318.

O'Toole, BI et al. 1996, 'The Australian Vietnam Veterans Health Study II, Self reported health of veterans compared with the Australian population', *International Journal of Epidemiology*, vol. 25, pp. 319-330.

O'Toole, BI et al. 1996, 'The Australian Vietnam Veterans Health Study III, Psychological health of Australian Vietnam veterans and its relationship to combat', *International Journal of Epidemiology*, vol. 25, pp. 331-340.

O'Toole, BI et al. 1998, 'Risk factors for posttraumatic stress disorder in Australian Vietnam veterans', *Australian & New Zealand Journal of Psychiatry*, vol. 32, pp. 21-31.

O'Toole, BI et al. 1998, 'Posttraumatic stress disorder and comorbidity in Australian Vietnam veterans: risk factors, chronicity and combat', *Australian & New Zealand Journal of Psychiatry*, vol. 32, pp. 32-42.

The following information was not available to the RMA at the relevant times, and so could only be considered by the Council as new information.

O'Toole, BI et al. 1999, 'Combat, dissociation, and posttraumatic stress disorder in Australian Vietnam veterans', *Journal of Traumatic Stress*, vol. 12, pp. 625-640.

O'Toole, BI & Catts, SV 2008, 'Trauma, PTSD and physical health: An epidemiological study of Australian Vietnam veterans', *Journal of Psychosomatic Research*, vol. 64, pp. 33-40.

O'Toole, BI et al. 2009, [In PRESS, accepted 5 May] 'The physical and mental health of Australian Vietnam veterans three decades after the war and its relation to military service, combat and PTSD', *American Journal of Epidemiology*.

⁵⁵ Wilson, JP & Krauss, GE 1985, 'Predicting post-traumatic stress disorder among Vietnam veterans', in Kelly, E ed. *Post-Traumatic Stress Disorder and the War Veteran Patient*, New York, Brunner / Mazel.

⁵⁶ Fett, MJ et al 1984, *The Mortality Report. Part I. A Retrospective Cohort Study of Mortality Among Australian National Servicemen of the Vietnam Conflict Era*. Canberra; Australian Government Publishing Service.

O'Toole, BI et al. 1984, *The Mortality Report. Part II. Factors Influencing Mortality Rates of Australian National Servicemen of the Vietnam Conflict Era*, Canberra, Australian Government Publishing Service.

Forcier, L et al. 1984, *The Mortality Report, Part III. The Relation Between Aspects of Vietnam Service and Subsequent Mortality Among National Servicemen of The Vietnam Conflict Era*, Canberra, Australian Government Publishing Service.

The above information was not available to the RMA at the relevant times, and so could only be considered by the Council as new information.

killing Vietnamese, seeing Australians killed, seeing dead enemy, participating in body counts, but also included subjective feelings of never surviving combat and risk of being killed or injured. The second factor included seeing enemy wounded, seeing Australians wounded, seeing dead enemy, seeing dead civilians, seeing Australians dead and seeing Australians injured with antipersonnel devices. The third factor included civilian-related events: directly hurting Vietnamese, observing Vietnamese being killed, and observing Vietnamese being hurt. The final factor included only two items, direct involvement in mutilation and observing mutilation, which they remarked was anecdotally connected with burial parties after combat. For lifetime PTSD diagnosis, the first three factors were all associated with PTSD subscales (re-experiencing, avoidance, hyperarousal) and the diagnosis itself while the fourth factor was associated only with avoidance. For current (one-month) PTSD, all factors were associated with all PTSD subscales and diagnosis except that factor 3 was not associated with the diagnosis and factor 4 was not associated with intrusion (see Table 5 p 636). They concluded that non-combat experiences are associated with PTSD components and the overall diagnosis, in addition to direct combat experiences (at p. 5).

a. O'Toole, BI et al. 1996⁵⁷

...examined risk factors for PTSD in their Vietnam veteran cohort and observed that...the only military service factor that was associated with lifetime PTSD diagnosis was corps group: Compared with non-field corps, Engineers (RAE) had the highest risk for PTSD (Odds Ratio, OR = 5.17, 95% Confidence Interval, CI = 1.86-14.35), followed by Infantry (OR = 1.58, 95% CI = 1.01-2.49), Armour and Artillery (grouped) (OR = 1.51, 95% CI = 1.25 - 2.84), and Signals/Medical/RAEME (grouped) (OR = 1.27, 95%CI = 1.44-2.31) See Table 3, p28 (at p. 5).

⁵⁷ O'Toole, BI et al. 1996, 'The Australian Vietnam Veterans Health Study I, Study design and response bias', *International Journal of Epidemiology*, vol. 25, pp. 307-318.
O'Toole, BI et al. 1996, 'The Australian Vietnam Veterans Health Study II, Self reported health of veterans compared with the Australian population', *International Journal of Epidemiology*, vol. 25, pp. 319-330.
O'Toole, BI et al. 1996, 'The Australian Vietnam Veterans Health Study III, Psychological health of Australian Vietnam veterans and its relationship to combat', *International Journal of Epidemiology*, vol. 25, pp. 331-340.

b. Gulf War Study ⁵⁸ (at p.5):

...showed that Persian Gulf War (PGW) veterans were at higher risk of PTSD than a comparison group of contemporary-serving military members who were not deployed to the Gulf. Their estimate of the lifetime prevalence of PTSD was 31%, similar to that found by the NVVRS in Vietnam veterans, and higher than the 20.9% found by the AVVHS, using different clinical measures. In a subsequent paper (Ikin et al, 2005), they described the exposure scale they used in detail, and titled their paper "War zone stress without direct combat". They reported the most frequent exposures were being on a ship in a war zone (81.2%), being in fear of one's life (71.3%), being on formal alert for nuclear, biological or chemical attack (70.9%), and fear of entrapment below the water line (53.6%). Other stressors included boarding hostile ships at sea, and fear of collision with sea mines (and thus being trapped below the water line).

c. Litz et al. 1997 ⁵⁹ (at p.6):

A cohort of 3,461 military serving personnel were surveyed 5 months after their return using exposure scale items derived from debriefing interviews, focus groups and expert US Department of Veterans Affairs opinion. They defined five categories: positive military duty, positive humanitarian duty, low magnitude stressors, negative peacekeeping, and "traditional war zone exposures" (see Litz et al, 1997, p180 for details) and correlated these with a composite measure of PTSD derived from the Post Traumatic Checklist (PCL) and the Mississippi Scale for Combat-related PTSD and calibrated against the Clinician Assessed PTSD Scale (CAPS). They reported that low-magnitude stressors related to the

⁵⁸ Ikin, JF et al. 2004, 'War-related psychological stressors and risk of psychological disorders in Australian veterans of the 1991 Gulf War', *British Journal of Psychiatry*, vol. 185, pp. 116 – 126.

One of the authors of the Ikin, JF et al. 2004 article, McFarlane, AC is a member of the Council for this review.

Ikin, JF et al. 2005, 'War zone stress without direct combat: the Australian naval experience of the Gulf war', *Journal of Traumatic Stress*, vol. 18, pp. 193-204.

McKenzie DP, et al. 2004, 'Psychological health of Australian veterans of the 1991 Gulf War: An assessment using the SF-12, GHQ-12 and PCL-S', *Psychological Medicine*, vol. 34, pp. 1419-1430.

The above information was not available to the RMA at the relevant times, and so could only be considered by the Council as new information.

One of the authors of the McKenzie DP, et al. 2004 article, McFarlane, AC is a member of the Council for this review.

⁵⁹ Litz, BT et al. 1997, 'Posttraumatic stress disorder associated with peacekeeping duty in Somalia for US military personnel', *American Journal of Psychiatry*, vol. 154, pp. 178-184.

Loo, CM et al. 2007, 'Ethnic-related stressors in the war zone: Case studies of Asian American Vietnam veterans', *Military Medicine*, vol. 172, no. 9, pp. 968-971. This information was not available to the RMA at the relevant times, and so could only be considered by the Council as new information.

malevolence of the environment in Somalia were rated as more frustrating than the negative aspects of peacekeeping (p181). The prevalence of PTSD in the group was 8% overall (for men, 7.9%, for women, 8.8%).

... they reported that the intensity of frustration with the negative aspects of peacekeeping and the frequency of war zone stressors were relatively strong predictors of PTSD for both men and women (see Table 4, p182). They concluded that "...peacekeeping operations under perilous conditions may represent a unique class of potentially traumatizing experiences not sufficiently captured by traditional descriptors of war zone exposure" (p183).

51. Dr O'Toole submitted that:

It therefore seems likely that PTSD can occur in the absence of A-2 (at p. 8).⁶⁰

52. Dr O'Toole submitted that there had been a refinement of the criteria for diagnosing PTSD over time. He suggested that this view was supported by his interpretation of the following articles:

a. Spitzer et al. 2007⁶¹ (at p. 7):

...the stressor "A" criterion appears to rely solely on the existence of a single, separate definable "event" that would be distressing to almost anyone. The subsequent separation of the experience of defined stressor criterion ("A-1") and the person's reaction to it (the "A-2" criterion)...made explicit the implicit criteria in DSM-III and DSM-III-R accompanying text, that required that a person's response involve a subjective component of "fear, helplessness, or horror". This has not been without its critics and has resulted in a number of research reports to both operationalise the criterion and test its validity.

b. Fontana & Rosenheck 1999; and

Hoge et al. 2004⁶² (at p. 7):

It has been shown that combat soldiers reliably experience the "A-I" criterion in combat...

⁶⁰ Which the Council understands to be a reference to the diagnostic criteria in clause 3(b)(A)(ii) of the Statements of Principles.

⁶¹ Spitzer, RL et al. 2007, 'Saving PTSD from itself in DSM-V', *Anxiety Disorders*, pp. 233-241.

This information was not available to the RMA at the relevant times, and so could only be considered by the Council as new information.

⁶² Fontana, A & Rosenheck, R 1999. 'A model of war zone stressors and posttraumatic stress disorder', *Journal of Traumatic Stress*, vol. 12, pp. 111-126.

Hoge, CW et al. 2004, 'Combat duty in Iraq and Afghanistan, mental health problems and barriers to care', *New England Journal of Medicine*, vol. 351, pp. 13-22.

c. Weathers & Keane 2007⁶³ (at p. 7):

...the existence of the "A-2" criterion has been disputed, particularly for combat troops or other occupations trained for circumstances prevailing in war zone and similar environments.

d. Brunet et al. 2001⁶⁴ (at p. 7):

...reported that 90% of police officers who had experienced a critical incident reported at least one "A-2" response...

In reviewing the literature Brunet et al (2001) found evidence that the peritraumatic response may entail emotional reactions beyond the DSM-IV "A-2" criteria, including feelings of personal life threat (March, 1993), guilt and shame (Solomon et al, 1996), anger (Ehlers et al, 1998), loss of bowel or bladder control (Lehman, 1985), and shaking, trembling and increased heart rate (Shalev et al, 1998; Resnick, 1997), in addition to "fear, helplessness and horror" as required by the DSM-IV.

e. Schnurr et al. 2002⁶⁵

...reported that more than 70% of older (mainly World War II) veterans who reported experiencing a combat-related "A-1" event also reported "A-2" responses. However, Schnurr et al (2002) noted that absence of

⁶³ Weathers, FW & Keane, TM 2007, 'The Criterion A problem revisited, Controversies and challenges in defining and measuring psychological trauma', *Journal of Traumatic Stress*, vol. 20, no. 2, pp. 107-121.

This information was not available to the RMA at the relevant times, and so could only be considered by the Council as new information.

⁶⁴ Apart from Ehlers, A 1998 and Resnick, HS 1997 the following information was not available to the RMA at the relevant times, and so could only be considered by the Council as new information.

Brunet, A et al. 2001, 'The peritraumatic distress inventory: A proposed measure of PTSD criterion A2', *American Journal of Psychiatry*, vol. 158, pp. 1480-1485.

March, JS 1993, 'What constitutes a stressor? The "criterion A" issue', in Davidson, JRT & Foa, EB eds. *Posttraumatic Stress Disorder: DSM-IV and Beyond*, Washington, DC, American Psychiatric Press, pp. 7-54.

Solomon et al, 1996. The full citation for this article was not provided to the Council.

Ehlers, A 1998, 'Psychological predictors of chronic posttraumatic stress disorder after motor vehicle accidents', *Journal of Abnormal Psychology*, vol. 107, pp. 508-519.

Lehman, H 1985, 'Somatic and psychological symptoms after the experience of life threatening events: a profile analysis', *Victimology*, vol. 10, pp. 512-538.

Shalev, AY et al. 'A prospective study of heart rate response following trauma and the subsequent development of posttraumatic stress disorder', *Archives of General Psychiatry*, vol. 55, pp. 553-559.

Resnick, HS 1997, 'Acute panic reactions among rape victims, implications for prevention of post rape psychopathology', *National Center for PTSD Clinical Quarterly*, vol. 7, pp. 41-45.

⁶⁵ Schnurr, PP et al. 2002, 'Trauma in the lives of older men: Findings from the Normative Aging Study', *Journal of Clinical Geropsychology*, vol. 8, pp. 175-187.

This information was not available to the RMA at the relevant times, and so could only be considered by the Council as new information.

an "A-2" response does not preclude the development of PTSD (at p. 7).

f. Adler et al. 2008⁶⁶ (at p. 7-8):

In a study of US Iraq veterans interviewed 3 months after return from a 12-month deployment, who reported experiencing a criterion "A-1" event, they noted that nearly 80% did not also report a criterion "A-2" response. When questioned more closely about their lack of response, 62% reported occupationally-related responses such as "Like a soldier", "Did my job", "My training kicked in", "I returned fire". Anger was a commonly endorsed response, as was lack of emotion and suppressed feelings, and responses such as "I was shocked", "I was scared", "Worried". These do not strictly fit the "A-2" criterion as narrowly defined as the authors note: "Despite the potential overlap with A2, individuals reporting shock and anxiety did not report A2 during the interview" (p. 305). They concluded that "...not responding with A2 did not prevent individuals from developing significant PTSD symptomatology" (p. 306) and questioned whether future research should assess whether endorsing A2 is incompatible with endorsing occupationally-related responses and whether individuals trained for potentially traumatic exposures report A2 feelings at some later point in time, after the highly trained occupational response has occurred.

53. Dr O'Toole submitted⁶⁷ that the duration of exposure to a stressful or malevolent environment is pertinent. He contended that while DSM-IV-TR apparently concentrates on a single event, the definition of an 'event' appears unclear.

For example, a combat event may take place over several hours (such as the battle of Long Tan), or a stressful patrol may last for days or weeks. In the civilian sector, PTSD has been described in individuals who endure prolonged periods of domestic violence or sexual abuse (see Kaysen, Resick & Wise, 2003⁶⁸ for a review of studies) (at p. 8).

⁶⁶ Adler, AB et al. 2008, 'A2 diagnostic criterion for combat-related posttraumatic stress disorder', *Journal of Traumatic Stress*, vol. 21, no. 3, pp. 301-308.

This information was not available to the RMA at the relevant times, and so could only be considered by the Council as new information.

⁶⁷ At page 8 of his paper.

⁶⁸ Kaysen D et al. 2003, 'Living in danger: the impact of chronic traumatisation and the traumatic context on posttraumatic stress disorder', *Trauma, Violence and Abuse*, vol. 4, pp. 247-264.

54. In support of his contentions Dr O'Toole provided his interpretation of the following articles concerning war zone stressors and civilian stressors:

a. McFarlane, AW & de Girolamo 1996 ⁶⁹

Prolonged periods of exposure to malevolent environments may also encompass intermittent, multiple single-incident traumatic events (at p. 8).

b. Buydens-Branchley et al, 1990 ⁷⁰

Kulka et al, 1990

Wilson & Krauss, 1985

Longer time spent in a combat zone has been reported to generally predict greater PTSD symptomatology...(at p. 8).

c. Buydens-Branchley et al, 1990 ⁷¹

Kulka et al, 1990;

[Longer time spent in a combat zone has been reported]...to predict more persistent symptomatology...(at p. 8).

⁶⁹ McFarlane, AC & de Girolamo, G 1996, 'The nature of traumatic stressors and the epidemiology of posttraumatic reactions', at p. 129-154 in van der Kolk, BA McFarlane, AC and Weisaeth, L eds. *Traumatic Stress: The Effects of overwhelming Experience on Mind, Body and Society*, New York: Guilford.

This information was not available to the RMA at the relevant times, and so could only be considered by the Council as new information.

One of the authors, McFarlane, AC is a member of the Council for this review.

⁷⁰ The following information was not available to the RMA at the relevant times, and so could only be considered by the Council as new information.

Buydens-Branchley, L et al. 1990, 'Duration and intensity of combat exposure and posttraumatic stress disorder in Vietnam veterans', *Journal of Nervous and Mental Disease*, vol. 178, pp. 582-587.

Kulka, RA et al. 1990, *Trauma and the Vietnam Generation. Report of Findings from the National Vietnam Veterans Readjustment Study*, vol. I, New York, Brunner / Mazel.

Kulka, RA, et al. 1990, *The National Vietnam Veterans Readjustment Study, vol. II, Tables of Findings and Technical Appendices*, New York, Brunner / Mazel.

Wilson, JP & Krauss, GE 1985, 'Predicting post-traumatic stress disorder among Vietnam veterans', in Kelly, E ed. *Post-Traumatic Stress Disorder and the War Veteran Patient*, New York, Brunner / Mazel.

⁷¹ The following information was not available to the RMA at the relevant times, and so could only be considered by the Council as new information.

Buydens-Branchley, L et al. 1990, 'Duration and intensity of combat exposure and posttraumatic stress disorder in Vietnam veterans', *Journal of Nervous and Mental Disease*, vol. 178, pp. 582-587.

Kulka, RA et al. 1990, *Trauma and the Vietnam Generation. Report of Findings from the National Vietnam Veterans Readjustment Study*, vol. I, New York, Brunner / Mazel.

Kulka, RA, et al. 1990, *The National Vietnam Veterans Readjustment Study, vol. II, Tables of Findings and Technical Appendices*, New York, Brunner / Mazel.

d. McFarlane, AW 2009⁷²

...used the classic criteria for causality advanced by Bradford Hill (1965) to examine the evidence for the effect of duration of war zone exposure in stress-related sequelae (at p. 8).

e. NVVRS⁷³

...found that those serving 13 months or more in a combat zone had more severe PTSD symptomatology and higher levels of PTSD diagnoses than shorter durations (at p. 8).

⁷² This information was not available to the RMA at the relevant times, and so could only be considered by the Council as new information.

McFarlane, AC 2009, 'The duration of deployment and sensitization to stress', *Psychiatric Annals*, vol. 39, no. 2 pp. 81-86.

McFarlane, AC is a member of the Council for this review.

Bradford Hill, A 1965, 'The environment and disease: Association or causation?', *Proceedings of the Royal Society of Medicine*, vol. 58, pp. 295-300.

⁷³ The following information was not available to the RMA at the relevant times, and so could only be considered by the Council as new information.

Kulka, RA et al. 1990, *Trauma and the Vietnam Generation. Report of Findings from the National Vietnam Veterans Readjustment Study*, vol. I, New York, Brunner / Mazel.

Kulka, RA, et al. 1990, *The National Vietnam Veterans Readjustment Study, vol. II, Tables of Findings and Technical Appendices*, New York, Brunner / Mazel.

Jordan, BK et al. 1991, 'Lifetime and current prevalence of specific psychiatric disorders among Vietnam veterans and controls', *Archives of General Psychiatry*, vol. 48, pp. 207-215.

Schlenger, WE et al. 1992, 'The prevalence of post-traumatic stress disorder in the Vietnam generation, A multimethod, multisource assessment of psychiatric disorder', *Journal of Traumatic Stress*, vol. 5, pp. 333-363.

f. AVVHS ⁷⁴

In the second wave of the longitudinal veteran cohort studied...[a] longer period of Vietnam service was found to be strongly related to PTSD, in the presence of other controlling variables, including Army AGC (intelligence) test score, age, wave I PTSD diagnosis and combat score (see Table 5, Annex A) (at p. 8).

55. In a discussion between the Council, Mr M, Dr O'Toole and the Commissions' representative at the hearing of complementary oral submissions, Dr O'Toole confirmed that in his view the perceived threat of death or harm (as opposed to discomfort) is the defining characteristic of a 'malevolent environment' in the context of a military or war environment.⁷⁵

56. Dr O'Toole concluded:

...the evidence strongly suggests that exposure to a single event, as implied by the DSM [IV-TR], is insufficient to explain the occurrence of PTSD in troops who do not have a direct combat role or who do not experience a single "high impact" event. It also suggests that military members who are trained for combat situations may not experience an immediate DSM Criterion "A-2" reaction, as this may be suppressed during actual combat situations. The absence of an "A-2" reaction does not necessarily operate to nullify the sequelae of PTSD (at pp. 8-9).

In Vietnam, and in the Gulf War, individuals who did not experience direct enemy contact also qualified for a diagnosis of PTSD. Peacekeepers who

⁷⁴ O'Toole, BI et al. 1996, 'The Australian Vietnam Veterans Health Study I, Study design and response bias', *International Journal of Epidemiology*, vol. 25, pp. 307-318.

O'Toole, BI et al. 1996, 'The Australian Vietnam Veterans Health Study II, Self reported health of veterans compared with the Australian population', *International Journal of Epidemiology*, vol. 25, pp. 319-330.

O'Toole, BI et al. 1996, 'The Australian Vietnam Veterans Health Study III, Psychological health of Australian Vietnam veterans and its relationship to combat', *International Journal of Epidemiology*, vol. 25, pp. 331-340.

O'Toole, BI et al. 1998, 'Risk factors for posttraumatic stress disorder in Australian Vietnam veterans', *Australian & New Zealand Journal of Psychiatry*, vol. 32, pp. 21-31.

O'Toole, BI et al. 1998, 'Posttraumatic stress disorder and comorbidity in Australian Vietnam veterans: risk factors, chronicity and combat', *Australian & New Zealand Journal of Psychiatry*, vol. 32, pp. 32-42.

The following information was not available to the RMA at the relevant times, and so could only be considered by the Council as new information.

O'Toole, BI et al. 1999, 'Combat, dissociation, and posttraumatic stress disorder in Australian Vietnam veterans', *Journal of Traumatic Stress*, vol. 12, pp. 625-640.

O'Toole, BI & Catts, SV 2008, 'Trauma, PTSD and physical health: An epidemiological study of Australian Vietnam veterans', *Journal of Psychosomatic Research*, vol. 64, pp. 33-40.

O'Toole, BI et al. 2009, [In PRESS, accepted 5 May] 'The physical and mental health of Australian Vietnam veterans three decades after the war and its relation to military service, combat and PTSD', *American Journal of Epidemiology*.

⁷⁵ Transcript of complementary oral submissions at pages 22-23.

also do not experience direct combat-like conditions have been shown to succumb to PTSD symptoms.

Secondly, the changing nature of combat dictates that the components of war zone and service theatre stressors include more than just the traditional direct combat, exposure to the dead and dying, witnessing or participating in acts of mutilation or abusive violence. They also encompass the subjective experience of being a target or potential target, being unable to prevent an adverse event, which is often encountered by RAE and non-combatant groups such as nursing or medical staff, or being responsible for civilian injury or death whether directly or indirectly. In addition, they include being located in a forward area, having perceived insufficient resources and hence vulnerability, and serving under perilous conditions. Finally, they involve longer durations of service in malevolent environments, such as exist in guerilla warfare or counter-insurgency deployments, or peacekeeping environments (at p. 9).

57. Dr O'Toole submitted finally:

...that a reasonable hypothesis can be supported that, as well as PTSD arising from chronic exposure to stressors or acute exposure to stressors, it can arise from exposures and deployment to malevolent environments where the risk of death or injury is present (at p. 9).

The Commissions' Submissions

58. The Commissions made a comprehensive written submission dated October 2010 and made an oral submission complementing their written submission. At the time the Commissions' written submission was prepared the Commissions had available to them only the Application, and not the later clarification provided by the Applicant as to its contentions, nor the Council's preliminary decision on the scope of review. As a consequence, the Council, as a result of discussions with the Commissions' representative at the hearing of oral submissions complementing the written submissions, understands that the Commissions' written submission addressed matters which (ultimately) were not within the scope of review.

59. The Council therefore, while taking into account the entirety of the Commissions' written submission (and the oral submissions complementing the written submission), has summarised in these Reasons its understanding of the components of the Commissions' written submission which focused on matters ultimately within the scope of review, as clarified by the Commissions' representative at the hearing of oral submissions complementing the written submissions.

60. A Medical Officer with the Department of Veterans' Affairs (the Department) represented the Commissions at the Council's meeting on 21 March 2012, and was the principal author of the Commissions' written submission to the Council.

61. The Commissions submitted that:

The definition of PTSD in instrument 5 of 2008 reproduces the diagnostic criteria from DSM-IV-TR, with some inconsequential modifications and the exclusion of notes relating to children.⁷⁶

The Commission's assessment is that the applicant is concerned in particular with the definition of a category 1A stressor and how this compares to the DSM-IV-TR diagnostic criterion A(1) for PTSD.⁷⁷

...the Commission understands the applicant to contend that DSM-IV-TR diagnostic criterion A(1) does not require there to have been an objective, real threat, whereas the category 1A stressor definition does.⁷⁸

An essential element of the disease is exposure to an extreme traumatic stressor. The same traumatic stressor that partly defines the condition is also the cause of the condition. It is therefore necessary that the disease definition and the SOP stressor factors match up. It would be untenable to have a person experience a stressor that enabled the diagnosis of PTSD to be made, but then that stressor was not recognised as a cause of the condition by the SOP factors.⁷⁹

62. The Commissions understood that the Applicant contended:

... that those experiences ["chronic threat of serious injury or death" or "prolonged experience of malevolent environments"] should be regarded as severe traumatic events and explicitly included in the category 1A stressor definition in the SOP⁸⁰

which was contrary to the Commissions' view that the diagnostic criteria in clause 3(b)(A) of the Statements of Principles 'matched up' with the existing definitions of category 1A stressor and category 1B stressor in paragraph 9 of the Statements of Principles.

63. The Commissions identified the following studies as sound medical-scientific evidence touching on an individual's perception of threat within a malevolent environment and submitted that:

...moving onto malevolent environment I think it is important to be clear about what we mean by that.

...I think the applicant is interested in malevolent environment where you're in that chronically threatening war zone type situation with the sort of examples he described.

The literature...is about malevolent environment with a different meaning...⁸¹

64. The articles the Commissions identified as relevant in this context were:

⁷⁶ Commissions' written submission at [19], page 6.

⁷⁷ Commissions' written submission at [23], page 6.

⁷⁸ Commissions' written submission at [26], page 7.

⁷⁹ Commissions' written submission at [24], page 7.

⁸⁰ Commissions' written submissions at [36], page 9.

⁸¹ Transcript of complementary oral submissions at page 18.

- King, DW et al. 1995⁸²
- King, DW et al. 1999⁸³
- Fontana, A & Rosenheck, R 1999⁸⁴

... They were both taking data from the National Vietnam Veterans Readjustment Study and looking at different ways of codifying war zone stresses. And malevolent environment in that context was referring more to unpleasant living conditions, bad food, bad accommodation, lack of sleep, insects, that sort of thing. That is not the threat from landmines or the threat from ambush... there is [sic] two different meanings, two different approaches to malevolent environment.⁸⁵

65. The Commissions submitted that King, DW et al. 1995 used the term “malevolent environment” as one of four conceptualisations of war zone stressor experiences:

...to describe discomforts and deprivations in day-to-day life in a war zone, including such things as adverse climate, poor living arrangements and lack of desirable food.⁸⁶

66. However, the Commissions queried whether the data of King et al. could be meaningfully disentangled.

...they [King, DW et al. 1995 & 1999] found [in their 1995 paper] that traditional combat had no direct effect on PTSD whereas the daily hassles, unpleasant living conditions did. ... a strange conclusion given the way PTSD is defined. How can an unpleasant environment be more important than combat or more direct than combat.

...in the later 1999 report...they found that the effect of malevolent environment was indirect through other war zone and post-war variables...⁸⁷

⁸² King, DW et al. 1995, 'Alternative representations of war zone stressors: relationships to posttraumatic stress disorder in male and female Vietnam veterans', *Journal of Abnormal Psychology*, vol. 104, no. 1, pp. 184-195.

⁸³ King, DW et al. 1999, 'Posttraumatic stress disorder in a national sample of female and male Vietnam veterans: Risk factors, war-zone stressors, and resilience-recovery variables. *Journal of Abnormal Psychology*, vol. 108, pp. 164-170.

⁸⁴ Fontana, A & Rosenheck, R 1999. 'A model of war zone stressors and posttraumatic stress disorder', *Journal of Traumatic Stress*, vol. 12, pp. 111-126.

⁸⁵ Transcript of complementary oral submissions at page 18.

⁸⁶ Commissions' written submission at [40], page 10.

⁸⁷ Transcript of complementary oral submissions at pages 18 - 19.

67. The Commissions submitted that Fontana, A & Rosenheck, R 1999⁸⁸
- ...using the same data set from the same study [as King et al 1995, 1999-NVVRS] ...did a slightly different modelling of war zone stressors and links of those stressors to PTSD. And they found that neither harsh physical conditions, the malevolent environment concept, or perceived threat, contributed directly to PTSD once you factored in other contributors like exposure to death of others or killing or injuring others ... [with] the same original data set, they came to a different conclusion.⁸⁹
68. The Commissions submitted that the data was unconvincing and that it was very difficult to draw conclusions from it:
- It is open to possibilities but it doesn't clearly indicate that there is a causal association⁹⁰ between being in that sort of environment and risk of PTSD that is independent of the obvious correlation between that exposure and experiencing the stressor.⁹¹
69. The Commission noted that the review paper by Kaysen, D et al. 2003⁹² looked at length of time in a combat zone and submitted that:
- ...their conclusion was that it was unclear whether duration made a separate and important contribution. ...you've got the obvious confounding of the longer you're in the combat zone the more likely you are to experience a criterion A(i) stressor.⁹³
70. The Commissions submitted that Kessler, RC et al. 1995⁹⁴ and authors of other population prevalence studies have asked questions (based on DSM-III-R criteria which are similar to the DSM-IV-TR examples of traumatic events that qualify as extreme traumatic stressors), as part of the diagnostic assessment of PTSD.⁹⁵

⁸⁸ Fontana, A & Rosenheck, R 1999. 'A model of war zone stressors and posttraumatic stress disorder', *Journal of Traumatic Stress*, vol. 12, pp. 111-126.

⁸⁹ Transcript of complementary oral submissions at page 19.

⁹⁰ This methodology does not reflect the Council's two step process in applying the reasonable hypothesis test as set down by the Full Federal Court (see [75] – [76]).

⁹¹ Transcript of complementary oral submissions at page 19.

⁹² Kaysen, D et al. 2003, 'Living in danger. The impact of chronic traumatization and the traumatic context on posttraumatic stress disorder', *Trauma, Violence & Abuse*, vol. 4, no. 3, pp. 247-264.

⁹³ Transcript of complementary oral submissions at page 19.

⁹⁴ Kessler, RC et al. 1995, 'Posttraumatic stress disorder in the National Comorbidity Survey', *Archives of General Psychiatry*, vol. 52, pp. 1048-1060.

⁹⁵ Commissions' written submission at [45], pp. 11-12.

71. The Commissions submitted that Creamer, M et al. 2001⁹⁶ also used a list of “events and experiences that qualify as traumas in DSM-IV” as part of the assessment for the presence of PTSD.⁹⁷

72. The Commissions’ interpretation:

...of these lists is that they are meant to be comprehensive but not definitive. These lists all indicate that the stressor must be an extreme event or experience.⁹⁸

73. In the Commissions’ view:

...the relatively low magnitude stressors associated with a malevolent environment clearly do not qualify as extreme traumatic stressors in accordance with DSM-IV-TR. Prolonged experience of such an environment may also not be consistent with the DSM-IV-TR requirement of experiencing “an event”.⁹⁹

More generally...the non-specific, pervasive threat of being in a war zone, in the absence of any particular traumatic event, is not of the same order as the extreme stressors identified in DSM-IV-TR as being causative¹⁰⁰ for PTSD and may also not be “an event”.¹⁰¹

74. The Commissions concluded:

The Commission[s] see[] no reason to specifically include “chronic threat of serious injury or death” and no scope to include “prolonged experience of malevolent environments” as part of the definition of a category 1A stressor in the SOP. The Commission[s are] of the view that the category 1A stressor in the SOP should not be redefined in any way that would make it inconsistent with criterion A(1) in DSM-IV-TR.¹⁰²

...as long as we’re working from that definition [that has this threshold requirement to have the qualifying stressor, at least as it’s currently defined] and you need that stressor, then there is difficulty I find from the science in trying to say that, yes, we’ve got the other factors that contribute.¹⁰³

⁹⁶ Creamer, M Burgess, P McFarlane, AC 2001, ‘Posttraumatic stress disorder: findings from the Australian National Survey on Mental Health and Well-being’, *Psychological Medicine*, vol. 31, pp. 1237-1247.

One of the authors McFarlane, AC is a member of the Council for this review.

⁹⁷ Commissions’ written submission at [45], page 12.

⁹⁸ Commissions’ written submission at [46], page 12.

⁹⁹ Commissions’ written submission at [47], page 12.

¹⁰⁰ This methodology does not reflect the Council’s two step process in applying the reasonable hypothesis test as set down by the Full Federal Court (see [75] – [76]).

¹⁰¹ Commissions’ written submission at [48] page 12.

¹⁰² Commissions’ written submission at [49], page 12.

¹⁰³ Transcript of complementary oral submissions at page 20.

REASONS FOR THE COUNCIL'S DECISION

The Council's Task

75. In conducting a review the Council follows a two-step process. It first identifies the pool of information, i.e. by identifying from all the information that was available to the RMA when it determined, amended, or last amended the Statements of Principles the sound medical-scientific evidence (as that term is defined in section 5AB(2) of the VEA (see paragraph 8 above)) which touches on (i.e. is relevant to) the issue of whether a particular kind of injury, disease or death can be related to service.
76. The second step requires the Council to determine whether there was sound medical-scientific evidence in the pool of information:
- a) that indicates (points to as opposed to merely leaves open)¹⁰⁴ the relevant possibility (whether exposure to perceived threat and/or malevolent environment (if found to exist in a particular case)) could provide a link or element in a reasonable hypothesis connecting PTSD or death from PTSD to relevant¹⁰⁵ service¹⁰⁶). The Council had to find that the hypothesis contended for was reasonable, and not one which was 'obviously fanciful, impossible, incredible or not tenable or too remote or too tenuous.'¹⁰⁷
 - b) concerning perceived threat and/or malevolent environment which, if found to exist in a particular case, could provide a relevant connection between PTSD or death from PTSD and relevant¹⁰⁸ service according to a standard of satisfaction 'on the balance of probabilities', or as being 'more probable than not'.
77. In these Reasons the association for both the reasonable hypothesis test (paragraph 76 (a)) and the balance of probabilities test (paragraph 76 (b)) are respectively referred to as the 'relevant association'.
78. It was with these tests firmly at the forefront of its collective mind that the Council considered the sound medical-scientific evidence in the pool of

¹⁰⁴ See Full Federal Court decision at paragraph 49 per Branson J.

¹⁰⁵ Relevant service here refers to operational, peacekeeping and hazardous service, British nuclear test defence service, and warlike and non-warlike service as those terms are defined in the VEA and the MRCA.

¹⁰⁶ See *Vietnam Veterans' Association of Australia (NSW Branch) Inc v Specialist Medical Review Council and Anor* (2002) 69 ALD 553 (Moore J decision) per Moore J at paragraph 29.

¹⁰⁷ See the full Federal Court decision in *Repatriation Commission v Bey* (1997) 79 FCR 364 which cited with approval these comments from Veterans' Review Board in *Stacey* (unreported 26 June 1985), all of which were in turn cited with approval in the Moore J decision at paragraph 33.

¹⁰⁸ Relevant service here refers to eligible war service (other than operational service), defence service (other than hazardous service and British nuclear test defence service), and peacetime service as those terms are defined in the VEA and the MRCA.

information and the submissions made by the Applicant and the Commissions referable to the contended factor/s.

79. In forming its judgement of whether the sound medical-scientific evidence pointed to the relevant association, the Council was conscious that the reasonable hypothesis test is 'a test of possibility'¹⁰⁹ and 'an unusually light burden.'¹¹⁰ If the reasonable hypothesis test was found not to be met, the balance of probabilities test necessarily could not be satisfied.

Scope of the Review

80. The Council decided to confine its attention to those matters identified in paragraph [28] above.

Pool of Information

81. As mentioned above, the first step for the Council was to determine the pool of information from the information that was available to (before) the RMA when it determined, amended, or last amended the Statements of Principles, as sent to the Council by the RMA under section 196K (in 2008 and subsequently clarified and confirmed in 2009 and 2010).
82. The Council's final view on the pool of information was that it should comprise the sound medical-scientific evidence the Council had identified on a preliminary basis as set out in paragraph [33] (**Appendix A**). In reaching this decision the Council took into account the written submissions and complementary oral submissions and considered whether any of the information to which it was referred should be in the pool.
83. The Council noted the Applicant's reference to documents which were not available to (not before) the RMA (see **Appendix C**). As mentioned above, in determining the review the Council is unable to (and so did not) consider information which was not available to (not before) the RMA at the relevant times.

COUNCIL'S ANALYSIS OF THE INFORMATION IN THE POOL

Should There Be a 'Perceived Threat' and/or 'Malevolent Environment' Factor/s?

84. Having settled the pool of information, the second question for the Council to consider was whether the sound medical-scientific evidence in the pool of information indicates ('points to' as opposed to merely leaves open) a potential perceived threat and/or malevolent environment factor/s as a link/s or element/s in a reasonable hypothesis connecting PTSD to relevant

¹⁰⁹ See full Federal Court decision at paragraph 49 citing with approval Spigelman CJ in the New South Wales Court of Appeal decision at paragraph 111.

¹¹⁰ See full Federal Court decision at paragraph 55 per Branson J.

service (see paragraph 76 (a)) and if so whether the relevant connection exists on the balance of probabilities (see paragraph 76 (b)).

85. The only basis upon which the Council can review the contents of a Statement of Principles is by reviewing all the information that was available to (before) the RMA at the relevant times, in order to ascertain whether there was sound medical-scientific evidence upon which the RMA could have relied to amend either or both of the Statements of Principles.
86. The Council considered all the articles in the pool. However, given the large number of articles in the pool, the Council in these Reasons focuses upon its analysis of those articles that it considered most pertinent to the issues before it.
87. Ultimately, matters of weight are questions for the Council in the exercise of its expertise and scientific judgement, noting that the Councillors are appointed to a particular review because of their specialist expertise in the particular condition, and the matters within the scope of the review.

Council's Analysis of the Salient articles in the Pool Touching on 'Perceived Threat' and/or 'Malevolent Environment'

88. The Council took into account all the submissions made to it, both written and oral.¹¹¹ However, the Council's task is to determine whether the sound medical-scientific evidence available to the RMA at the relevant times:
 - 88.1. 'points to' the relevant association,¹¹² and if so,
 - 88.2. satisfies the balance of probabilities test.¹¹³
89. For the Council, consideration of the statistical data was a necessary, but not sufficient consideration of whether the different tests were met. The Council considered all the studies, both individually and collectively, to consider whether the sound medical-scientific evidence available to the RMA at the relevant times 'pointed to' as opposed to merely leaving open the relevant association, and if so, whether it satisfied the balance of probabilities test. The Council having closely analysed all the information in the pool, placed particular weight on the articles discussed in detail below.

¹¹¹ From the Applicant as summarised at [36] - [57].
From the Commissions as summarised at [58] - [74].

¹¹² See [76 (a)].

¹¹³ See [76 (b)].

King, DW et al.1995. 'Alternative representations of war zone stressors: relationships to posttraumatic stress disorder in male and female Vietnam veterans', *Journal of Abnormal Psychology* vol. 104, no. 1, pp. 184-95. RMA ID 32364

90. This study was part of a series of studies investigating the NVVRS data in respect of PTSD. It analysed retrospective self-report data on a randomly selected sub-sample of 300 men and 108 women from the NVVRS.¹¹⁴

91. The authors surveyed then current debate as to:

a. whether the stressor in the definition of PTSD was

a truly objective event or conceptualized in terms of the subjective meaning of that event.¹¹⁵

b. whether:

... more usual, less intense events can produce PTSD symptoms... not[ing]that some evidence suggests that repeated, less intense events may produce a cumulative effect equal to the impact of a single high-intensity traumatic event, and that what one might characterize as 'daily hassles' may, in some cases, produce significantly greater dysfunction than that resulting from more intense events.¹¹⁶

92. The authors considered four conceptualisations of war zone stressors:

a. **traditional combat events** (which they described as 'a prototypical Criterion A stressor for PTSD'):

...firing a weapon, being fired on, seeing persons wounded or killed, and the like.¹¹⁷

An attempt was made to exclude any personal interpretations or subjective judgements about the events or circumstances.

b. **exposure to atrocities or exceptionally abusive violence:**

...the torture of prisoners, severe mistreatment of civilians, use of cruel weaponry or chemicals, and mutilation of bodies.¹¹⁸

This stressor was defined to reduce personal interpretations or subjective judgements.

¹¹⁴ Page 186. See footnote [31].

¹¹⁵ Page 184.

¹¹⁶ Page 184, and citing Sutker, Uddo-Crane and Allain (1991). 'Clinical and research assessment of posttraumatic stress disorder: A conceptual overview' *Psychological Assessment*, 3 pp 520 to 530.

This information was not available to the RMA at the relevant times and so could only be considered by the Council as new information.

¹¹⁷ Page 185.

¹¹⁸ Page 185.

c. perceived threat

how objective experiences in the war zone were individually perceived and internalised.¹¹⁹

This stressor was defined in terms of personal judgements or individual assessments of events or circumstances as potentially threatening or harmful.¹²⁰

Those assessments may or may not have been accurate representations of objective reality. An emphasis was placed on interpretations of, and feelings about, events or circumstances.

d. malevolent environment

[the] discomforts and deprivations in day-to-day life ... relatively low magnitude stressors - at least when compared to combat or atrocity situations - might include lack of desirable food, poor living arrangements, annoying climate, unpredictable and extended work schedules and the like. They are the typical "daily hassles" irritations, and pressures within a harsh or malevolent war zone.¹²¹

This stressor focused on the accumulation of 'daily hassles' to the point of potentially causing personal distress and creating a sense of futility, helplessness or emotional emptiness. It was necessarily subjective.

93. The authors' stated first purpose of their study was to:

use these four representations of war zone stressors to examine the Criterion A objectivity –subjectivity and event magnitude issues in terms of relationships to PTSD. Reports of exposure to traditional combat events and reports of exposure to atrocities or episodes of extraordinarily abusive violence were intended to denote potentially verifiable (the more 'objective') aspects of the war zone experience... Personal judgments of threat of harm in the face of war zone incidents and circumstances were included to assess a more subjective conceptualisation of the stressor. Finally, exposure to the harsh or malevolent environment of daily life exemplified stressors of lower magnitude, and ... involved largely subjective appraisals.¹²²

¹¹⁹ Page 185.

¹²⁰ Page 186.

¹²¹ See generally at page 185, and see too discussion at page 186ff.

¹²² Page 185.

94. The authors' second purpose was to consider the effect of war zone stressors on women who had served in Vietnam, mostly as nurses. The authors noted that women:

generally did not engage in what would be called traditional combat activities, nor were they typically in a position to witness or participate in the commission of atrocious or extremely violent acts. On the other hand, perceived threat (fear for one's safety and well-being in a guerrilla war in which there were no clearly established lines of battle) and harsh day-to-day living... are possibly quite salient...¹²³

95. Using structural equation modelling strategies the authors presented a final model of the total direct and indirect effects of the four war zone stressors on PTSD for both men and women.¹²⁴

- male veterans scored higher on all four stressor indexes than female veterans;
- the pattern of relationships was generally similar for men and women except for one path from traditional combat to perceived threat;
- malevolent environment appeared to be the most potent stressor for men and women;
- traditional combat had least impact for men and atrocities-abusive violence the least impact for women.

96. Perceived threat was found to be a direct effect. Traditional combat experiences were found not directly to influence PTSD, but impacted indirectly through perceived threat, whilst exposure to atrocities-abusive violence directly impacted PTSD, with no indirect impact through perceived threat (but the authors noted that this may have been mediated by 'guilt and shame', which were not part of the study).¹²⁵

97. The authors stated that their findings provided strong evidence that each of these four stressor indexes impact PTSD and in different ways.¹²⁶ Correlation results for the direct and indirect effects are shown in Table 4 set out below.¹²⁷

¹²³ Pages 185 - 6.

¹²⁴ See at page 191-192. Table 4 and Figure 3.

¹²⁵ Pages 191 - 192 and 193.

¹²⁶ See at page 191.

¹²⁷ See Table 4 at page 192, shown in [97].

Table 4

Effects of War Zone Stressors on PTSD for the Revised Model

Variable	Total effect	Direct effect	Indirect effect
Traditional combat			
Men	.12	.00	.12
Women	.29	.00	.29
Atrocities–abusive violence	.21	.21	.00
Perceived threat	.25	.25	
Malevolent environment	.48	.37	.12

98. The authors described as 'striking' that their results showed harsh or malevolent environment to be the 'most potent' effect on PTSD (for both men and women). Its effect was both direct and indirect, through the intervening variable of perceived threat.

Figure 3 showing the authors' revised path coefficient model ¹²⁸

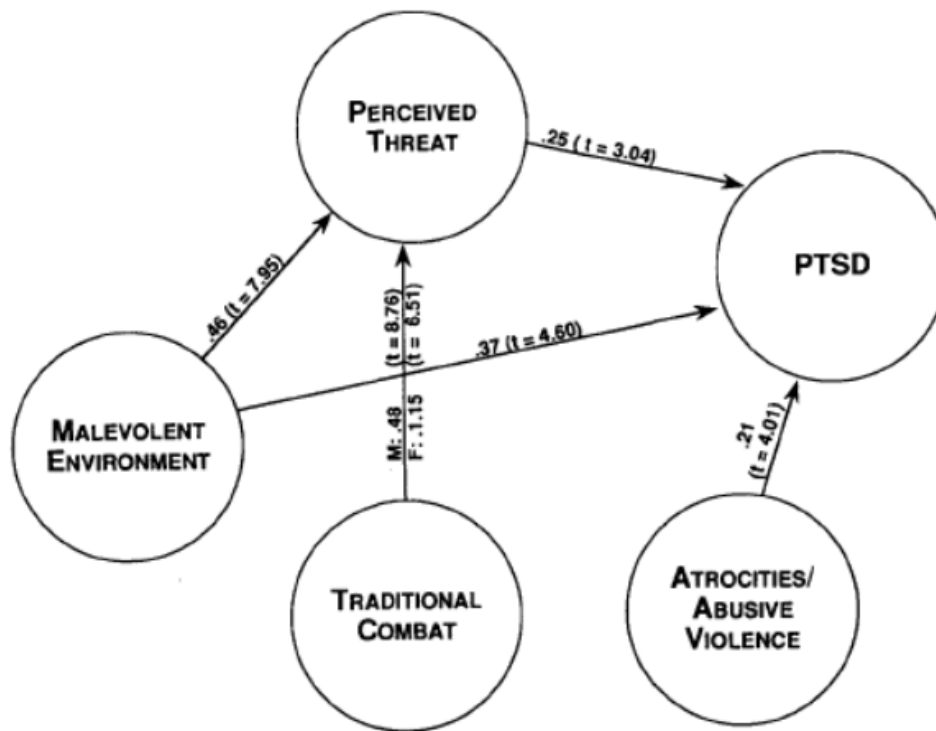


Figure 3. Path coefficients and associated *t* statistics for the revised model. For the combat-to-perceived threat path, separate values are given for male veterans (M) and female veterans (F). PTSD = posttraumatic stress disorder.

99. The authors concluded their study provided some support for the four representations of war zone stressors (as conceptualised in their model illustrated in their figure 3, shown above).

100. The study was published prior to the finalisation of the DSM-IV. The authors recommended that both objective and subjective aspects of stressors be assessed, noting that:

... perceived threat as a subjective personal appraisal had a total effect for male veterans that was greater than either traditional combat or atrocities-abusive violence both considered more observable, verifiable representations ... of war zone stressful events. For women, the total effect for perceived threat exceeded that for atrocities ... Traditional combat only manifested an influence when ... mediated by the subjective assessment of impending harm.¹²⁹

101. The authors considered that their findings suggested the importance of exposure to and perception of lower magnitude stressors, positing that these may either:

- (a) have their own effects, or may exacerbate subjective reactions to an objectively traumatic event, or
- (b) it may be that exposure to a traumatic event leads to an increased sensitivity to lower magnitude stressors. The authors commented that their results:

... point to the critical need to evaluate further what role is played by lower magnitude events, perhaps occurring over an extended period of time, in the etiology of PTSD. In this regard, the results are partially at variance with the draft DSM-IV ... Criterion A nosology.¹³⁰

102. The authors noted some limitations with the study, including that it was based on retrospective self-report of events and circumstances occurring approximately 10 to 20 years previously. They noted this could raise issues of poor recall, reconstruction, and/or attribution bias.

Council's comments

103. The Council considered this study touched on the contended factor regarding malevolent environment and the contended factor regarding perception of threat.

104. The Council noted that the study used a somewhat unconventional model (structural equation modelling) in its analysis of potential relationships between stressors and PTSD, although at the time the study was conducted, this was the 'gold standard' paper in this area methodologically speaking.

¹²⁹ Page 193.

¹³⁰ Page 193.

105. The Council noted there was a potentially strong subjective component. While it was clear that there was an association between reported symptoms and reported environment, that is not necessarily evidence that there was an association between malevolent environment at the time and the onset and/or worsening of PTSD. The Council considered a possible interpretation of the data was that there was an association between actual trauma and PTSD, with exposure to a malevolent environment an exacerbating factor.

106. The study was cross-sectional and used data from interviews about events occurring 20 years earlier. The Council considered this involved considerable limitations, but the Council nevertheless considered that the study was evidence in favour of the relevant association.

107. For the contended factor in respect of malevolent environment, the Council considered that this study:

- pointed to the relevant association; but
- did not satisfy the balance of probabilities test

for clinical onset and clinical worsening.

108. For the contended factor in respect of perception of threat, the Council considered that this study:

- pointed to the relevant association; but
- did not satisfy the balance of probabilities test

for clinical onset and clinical worsening.

Litz BT, Orsillo SM, Friedman M, Ehlich P & Batres A 1997 'Posttraumatic Stress Disorder associated with peacekeeping duty in Somalia for U.S. military personnel' *American Journal of Psychiatry*, Vol 154 pp 178-184. RMA ID 12806.

109. This study aimed to examine the prevalence of PTSD associated with deployment to peacekeeping duty in Somalia, and to consider positive and negative experiences, and the potential risk for PTSD.¹³¹

110. A large cohort of active duty personnel deployed to Somalia comprising 3,085 men and 225 women was surveyed approximately five months after their return to the United States.¹³² Approximately 17.8% had previous conflict service, with most participants (85.9%) having served during the Persian Gulf War.¹³³ The tasks undertaken in Somalia by the participants were diverse.

111. The authors noted that previous research had indicated that peacekeeping in peaceful conditions was associated with frustration, boredom and role

¹³¹ Pages 178 - 179.

¹³² Page 179.

¹³³ Page 181.

conflict, but not with the development of lasting stress reactions. This research thus examined PTSD in circumstances where the nature of peacekeeping was believed to have changed, including interventions in which 'the peace between warring parties is tenuous or non-existent, yet the need for humanitarian intervention and resolution of the conflict is great'. Combat-trained military personnel were called upon to provide humanitarian relief in an unsafe and unstable environment - ongoing clan warfare, disease, and a disorganised and unstructured society.¹³⁴

112. This mission differed from previously studied peacekeeping missions, as there were "chronic breakdowns in peace and ongoing life threat to peacekeepers".¹³⁵ Although peacekeepers performed their duties amidst ongoing fighting between clans, with periodic and unpredictable life threat to themselves, strict rules of engagement sharply restricted their options for protection or retaliation.¹³⁶
113. The authors noted earlier research which had found that low magnitude military-related stressors (eg. poor diet, exposure to the elements, sleep disruptions), had been shown independently to contribute to risk for PTSD in Vietnam veterans. Similarly, prolonged expectation of life threat due to anticipated chemical weapon or missile attacks, and non-combat stressors such as accidents or sexual harassment had also been found to be independent contributors.¹³⁷ The authors considered that the Somalia mission combined traditional combat events with a variety of low magnitude stressors.
114. The survey instrument covered both traditional combat events and a 'low magnitude stressor subscale', comprising 10 items associated with 'being in the military or the malevolence of the environment in Somalia', rated on a 5-point Likert-type scale. 'Sample items included enduring the climate, the danger of contracting disease and being separated from family'.¹³⁸
115. The war-zone exposure subscale included measuring the frequency of exposure to war zone related experiences such as going on dangerous patrols and receiving small arms fire.¹³⁹ PTSD was measured in accordance with DSM –IV using the PTSD checklist and the Mississippi Scale for Combat Related Post-traumatic Stress Disorder.¹⁴⁰
116. A negative peacekeeping subscale included 'having to exercise restraint while patrolling dangerous areas', and 'dealing with changing roles regarding the

¹³⁴ Page 179.

¹³⁵ Page 178-179.

¹³⁶ Page 179.

¹³⁷ Page 179.

¹³⁸ Page 180.

¹³⁹ Page 180.

¹⁴⁰ Page 180.

discretionary use of force'. Two positive subscales measured positive military experiences and positive humanitarian experiences.

117. Eight percent of peacekeepers met the diagnostic criteria for PTSD. While lower than the present estimate for PTSD in Vietnam combat veterans, this was comparable to estimates of the prevalence of PTSD in Persian Gulf veterans.¹⁴¹
118. Participants rated low magnitude stressors, relating to the malevolence of the environment, as more frustrating than the negative aspects of peacekeeping.¹⁴² Women reported feeling significantly more adversely affected by low magnitude stressors, although the effect sizes for gender were generally small.¹⁴³
119. In multivariate analysis, the best predictors of PTSD symptom severity were the frequency of exposure to war zone stressors ($t=14.9$, $p=0.00001$), and negative aspects of peacekeeping ($t=7.7$, $p=0.00001$) whereas "positive aspects of military service" was a strongly protective factor ($t= -11.1$, $p=0.00001$).¹⁴⁴ Low magnitude stressors related to the malevolence of the environment in Somalia were significantly related to PTSD symptom severity ($t=2.5$, $p<0.01$). This was not attributed to prior war-zone exposure ($t=0.6$, $p=0.56$).¹⁴⁵
120. The authors considered that:
- peacekeeping operations under perilous conditions may represent a unique class of potentially traumatising experiences not sufficiently captured by traditional descriptors of war zone exposure.¹⁴⁶
121. The authors noted some limitations with the study, particularly recall bias.¹⁴⁷
122. The authors concluded these data suggested that peacekeeping may be difficult to reconcile for some combat-trained soldiers and can create a risk for PTSD.

Council's comments

123. The Council considered this study touched on the contended factor regarding malevolent environment and the contended factor regarding perception of threat.

¹⁴¹ Page 182.

¹⁴² Page 181.

¹⁴³ Page 181.

¹⁴⁴ Table 4, page 182.

¹⁴⁵ Table 4, page 182.

¹⁴⁶ Page 183.

¹⁴⁷ Page 183.

124. The Council noted that this study found an overall association between combat stressors and PTSD and highlighted the association between peacekeeper stress and PTSD.
125. The Council noted that the study connected "unsafe and unstable environments" and/or "perilous conditions" with PTSD. The Council noted this related to firefights, peacekeeping duty in dangerous and conflict conditions (witnessing interclan violence, receiving threatening responses while administering humanitarian aid) and a variety of low-magnitude stressors (climate, threat of disease, separation from family). However, the Council considered there is a difficulty in applying this finding to other environments - the peacekeeping may be different and/or there may be some overlap and the Council considered the study did not assist in identifying what any overlap / commonality might be.
126. The Council considered the study highlighted the futility of trying to separate the context and style of the environment. However, the Council considered that this article supported the relevant association with PTSD. In the Council's view, and cognisant of the low threshold of the reasonable hypothesis test, the Council considered that this study supported the relevant connection between (high frequency) exposure to military service environments (combat zone and peacekeeping) and the perception of threat. The Council noted that while the study measured frequency of exposure the relevant data was not presented in the paper.
127. For the contended factor of chronic malevolent environment, the Council considered that this study:
- pointed to the relevant association; but
 - did not satisfy the balance of probabilities test
- for clinical onset and clinical worsening.
128. For the contended factor of perception of threat, the Council considered that this study:
- pointed to the relevant association; but
 - did not satisfy the balance of probabilities test
- for clinical onset and clinical worsening.

Keane, TM M, King LA, King DW, Spence LA, Miller A-M, Miller PM. 1998, 'Do war zone stressors predict development of psychiatric disorders?' in Morris P, Raphael B and Bordujenko A (Eds), *Repatriation Medical Authority Consensus Conference Proceedings: Stress and Challenge - Health and Disease*, Brisbane February 9-11, 1998. RMA ID 12622 & 22686 ¹⁴⁸

129. This paper used data from the NVVRS,¹⁴⁹ a study of psychological effects in US Vietnam War veterans, in comparison to military but non-war-zone veterans of the period. The data were gathered in the mid-1980s. The authors reported as "strikingly high" the NVVRS finding of 30% lifetime PTSD and 15% current PTSD prevalence among theatre veterans 'some twenty years after the war'.¹⁵⁰

130. The purpose of this paper was to examine further the potential relationships among the 4 war-zone stressors identified in the King et al (1995) study (traditional combat, atrocities, perceived life-threat and malevolent environment),¹⁵¹ and with psychiatric conditions other than and including PTSD. Gender was included as a variable to explore its potential interactions with the war-zone stressors.

131. The subsample for this study comprised 1,200 men and 432 women. Assessment of psychological diagnosis was carried out using the Diagnostic Interview Schedule (DIS – based on DSM-III-R),¹⁵² and the Mississippi Scale for Combat-Related PTSD¹⁵³ (a score of 94 or above indicating a positive diagnosis).

132. Assessment showed current (6 month) PTSD prevalence of 16.7%, which was higher in men (20.3%) and considerably lower in women (6.5%), who were mostly nurses or clerks. The frequency of having any psychological disorder including PTSD was 49.8%, and 47% when PTSD was not included.¹⁵⁴

¹⁴⁸ The pagination cited in these Reasons is taken from the monograph of the Conference Proceedings, RMA ID 22686.

¹⁴⁹ Kulka, RA et al. 1988, *Contractual report of findings from the National Vietnam Veterans Readjustment Study*, Research Triangle Institute, Research Triangle Park, NC.

¹⁵⁰ Page 1.

¹⁵¹ See King et al (1995) discussed elsewhere in these Reasons. Two of the authors of this paper were also the lead authors on the King et al series of studies.

¹⁵² Robins, LN et al. 1981, 'National Institute of Mental Health Diagnostic Interview Schedule: Its history, characteristics, and validity', *Arch of Gen Psychiatry*, vol. 38, pp. 381-389.

This information was not available to the RMA at the relevant times, and so could only be considered by the Council as new information.

¹⁵³ Keane, TM et al. 1988, 'Mississippi Scale for Combat-Related Post-Traumatic Stress Disorder: Three studies in reliability and validity', *J of Consulting and Clinical Psychology*, vol. 56, pp. 85-90.

This information was not available to the RMA at the relevant times, and so could only be considered by the Council as new information.

¹⁵⁴ See at page 4 and Table 2 at page 48.

133. Many statistical analyses were employed to look for potential relationships between the psychological outcomes and exposure categories, individually and combined. In summary, the four defined categories of war-zone stressors each predicted psychiatric outcomes, both combined and individually.

In general, the more an individual was exposed to the four dimensions of traumatic stress, the more likely he or she was to develop any of these psychiatric conditions.¹⁵⁵

134. Each of the war zone stressors had small but positive increased odds ratios for current PTSD in both types of analyses. The ORs varied only slightly depending on how the other variables were entered into the regression calculation.¹⁵⁶

135. The authors considered that disaggregating the war zone stressors enabled them to:

conclude that all components of the variable war zone stressors contribute to the development of PTSD and the other psychiatric conditions.¹⁵⁷

Council's comments

136. The Council considered this study touched on the contended factor regarding malevolent environment and the contended factor regarding perception of threat.

137. The Council noted that this study dealt with the same data set from the NVVRS (which was retrospective and self reported), which is source data for other studies analysed in these Reasons, including the King et al papers (1995) and (1999).

138. This study also used the same methodologies, relying on the use of the Mississippi Scale for Combat-Related PTSD. Thus, the difficulties discussed above of isolating any separate potential contribution to the onset and/or worsening of PTSD from malevolent environment and traumatic events also applied here, although the modelling analysis was an attempt to identify relative contributions.

139. The Council noted that this paper provided useful definitions because it distinguished between the malevolent environment and the perception of threat aspects of exposures. It individually addressed each item in relation to separate outcomes, and each individual war zone stressor separately predicted the outcomes (including PTSD). The Council considered doubt remained as to whether exposure to a malevolent environment was

¹⁵⁵ See at page 51.

¹⁵⁶ See Table 12b on page 88. The individual OR for perceived threat was 1.22, and for malevolent environment was 1.12, p = 0.00.

¹⁵⁷ See at page 51.

independently associated with PTSD in the absence of a traumatic event, and if so, where the boundary lay between malevolent environment and proximate threat.

140. The Council considered that the data showed that a malevolent environment can certainly compound the impact of a traumatic event. The Council was less persuaded that a malevolent environment alone has the relevant association in the absence of a traumatic event. While the Council considered it could be only an augmentation (or exacerbating) effect, the Council noted that the authors believed their method had controlled for the effects of actual combat, and the Council was very conscious of the low threshold for the reasonable hypothesis test to be met. The Council noted that there was 'almost a dose-response'.

141. For the contended malevolent environment factor, Council considered that this study:

- pointed to the relevant association; but
- did not satisfy the balance of probabilities test

for clinical onset and clinical worsening.

142. For the contended perception of threat factor, Council considered that this study:

- pointed to the relevant association; but
- did not satisfy the balance of probabilities test

for clinical onset and clinical worsening.

O'Toole BI, Marshall RP, Schureck RJ, Dobson M 1998, 'Risk factors for posttraumatic stress disorder in Australian Vietnam veterans' *Australian and New Zealand Journal of Psychiatry*, Vol 32 pp 21-31. RMA ID 13902

143. From a national random sample of 1,000 male Australian Vietnam veterans from the AVVHS, 641 respondents were examined using a health status interview and a self-completed battery of measures for psychological health, stressors in Vietnam, a measure of combat exposure and the AUSCID-V¹⁵⁸ to assess Vietnam-related PTSD symptomology.¹⁵⁹

144. Exposure to combat was measured from military records and self-report interview and scaled by length of time and potential exposure to high war zone stress. Participants were divided into two combat groups (Infantry, Engineers), two protected combat groups and non-combat or services groups. There was a moderate but significant correlation between self-

¹⁵⁸ AUSCID-V adapted from Spitzer, R Williams J, Gobbon M, Structured clinical interview for DSM-III-R, version NP-V. NY New York State Psychiatric Institute, 1987.

¹⁵⁹ See at pages 21 - 23.

reported combat exposure and objective measure based on postings ($r=0.44$, $p<0.001$).¹⁶⁰

Compared with non-field corps, the study found that men in the Engineer Corps¹⁶¹ had a much greater chance of PTSD (OR= 5.69 CI = 1.96-16.5) followed by men in Infantry (OR=2.02; CI = 1.23 - 3.34), while men in corps with a protected field role such as armour and artillery succumbed to PTSD less often (OR = 1.05; CI = 0.51 - 2.18) as did men in the services roles (Signals, Medical, RAEME: OR = 1.17; CI = 0.60 - 2.27); note that men in non-field corps also developed PTSD.¹⁶²

145. After controlling for all other variables, in the final model, the men in the Engineer Corps had an OR of 5.17 (95%CI 1.86-14.35) of developing PTSD, followed by men in Infantry: 1.58 (95% CI 1.01-2.49).¹⁶³

146. The authors found that combat exposure was clearly associated with PTSD, accounting for about 18% of the deviance towards PTSD diagnosis.

147. The authors noted limitations to the study of self-report and the potential for recall bias, particularly in relation to the onset of psychiatric disorder. However, the authors concluded that combat was a prime predictor of PTSD, but of the military variables, only corps group assumed significance.¹⁶⁴ The authors found that:

the most significant contribution to PTSD was the combat casualty group. Combat exposure ... was clearly associated with PTSD... Becoming a casualty, particularly a battle casualty, was a significant determinant of PTSD but its contribution was lessened after controlling for other combat stress variables. Only the combat and dissociative scales were important in the final model, and in spite of their modest correlation they made the most significant contribution to PTSD even after controlling for other factors... the evidence here suggests that trauma exposure itself, and the dissociative reaction to trauma, remain the most significant determinants.¹⁶⁵

¹⁶⁰ Page 23.

¹⁶¹ The study design paper for the AVVHS, by the same authors and cited by them in this paper, says that field engineers were 'mine clearance teams'. (p310) O'Toole et al, 'The Australian Vietnam Veterans Health Study 1. Study design and response bias.' *International Journal of Epidemiology*. 1996. RMA ID 3037.

¹⁶² Page 25. See too Dr O'Toole's submission at [50(a)].

¹⁶³ See Table 3 page 28.

¹⁶⁴ Page 28.

¹⁶⁵ Page 29.

Council's Comments

148. The primary aim of the study was to assess the relative roles of exposure to traumatic stressors and pre-existing vulnerabilities. As the latter did not touch on the contentions in the review, the Council focused upon the findings concerning exposure to combat stressors. The Council noted that this paper highlighted that Infantry and Engineers were corps at the highest risk of developing PTSD, with the Engineers Corps being the most likely.
149. The Council considered that there were some methodological issues with the paper: it was a cross-sectional study; and it was somewhat difficult to disentangle the effect perception of risk might have in the absence of direct trauma. However, the Council considered that this is the nature of the literature in this field, most of which addresses being in a threatening environment, without looking at the degree of exposure to actual trauma.
150. The Council considered that strong inferences could not be drawn from this paper as to perception of threat as a 'stand alone' risk factor for PTSD given the absence of an analysis of the risk of PTSD for those engineers who had experienced direct traumatic events from those engineers who had not. However, the Council noted that being in the Engineering Corps remained a significant risk factor even after controlling for combat exposure.
151. The Council considered it reasonable to treat the engineers in this analysis somewhat as a 'proxy' for the perception of threat issue, given that the engineers had qualitatively different experiences from the other subject groups. The Engineer Corps is involved in a range of activities in the combat environment, including deactivating booby traps and mine clearance and defusing ordinance. All such activities have a high risk of catastrophic outcomes if misadventure was to happen.
152. While not necessarily express in the paper, the Council considered that the strongly increased odds ratio for engineers was not simply accounted for by actual traumatic events occurring in combat exposure; the Engineer Corps had an increased risk of PTSD independent of trauma exposure. The Council considered it likely that threat was the critical issue rather than the occurrence of a specific traumatic event. The nature of this threat is realistic and indicative of the specific role of the corps member.
153. While acknowledging the above-mentioned limitations, and being cautious in its interpretation of the data, the Council considered that the findings about the Engineering Corps illustrated that perception and environment are inter-related, capturing the nature of perception of threat within an environment which was inherently hazardous and hostile. Accordingly, the Council considered that this paper was supportive of a perception of risk in the absence of a specific traumatic event as having the relevant association with PTSD.

154. For the contended malevolent environment factor, Council considered that this study

- pointed to the relevant association; but
- did not satisfy the balance of probabilities test

for clinical onset and clinical worsening.

155. For the contended perception of threat factor, Council considered that this study:

- pointed to the relevant association; but
- did not satisfy the balance of probabilities test

for clinical onset and clinical worsening.

King, DW et al. 1999, 'Posttraumatic stress disorder in a national sample of female and male Vietnam veterans: risk factors, war-zone stressors, and resilience-recovery variables', *Journal of Abnormal Psychology*, vol. 108, pp. 164-70. RMA ID 31767

156. This study built on a series of studies published in 1994, 1995, 1996 and 1998 analysing data from the NVVRS:

- In 1994¹⁶⁶ – factor analysis of the Mississippi Scale for Combat-Related PTSD scores¹⁶⁷ identified categories of symptom that resulted in a higher order global PTSD factor that replaced previous symptom categories, and then served as indicators of the PTSD construct in later studies.
- In 1995¹⁶⁸ – investigated how 4 war-zone stressor dimensions were differentially associated with PTSD, the findings of which are summarised above.¹⁶⁹

¹⁶⁶ Citing: King, L.A. et al. (1994), 'Latent Structure of the Mississippi Scale for Combat-Related Post-Traumatic Stress Disorder: Exploratory and higher-order confirmatory factor analyses' *Assessment*, 1, pp 275-279.

This information was not available to the RMA at the relevant times and so could only be considered by the Council as new information.

¹⁶⁷ Citing: Keane T.M et al. (1988) 'Mississippi Scale for Combat Related Posttraumatic Stress Disorder: Three Studies in Reliability and Validity' *Journal of Consulting and Clinical Psychology*, 56 pp 85-90.

This information was not available to the RMA at the relevant times and so could only be considered by the Council as new information.

¹⁶⁸ King, DW et al.1995, 'Alternative representations of war zone stressors: relationships to posttraumatic stress disorder in male and female Vietnam veterans', *Journal of Abnormal Psychology* vol. 104, no. 1, pp. 184-95. RMA ID 32364.

¹⁶⁹ See [90]ff.

- In 1996¹⁷⁰ – the study incorporated the representation of war-zone stressors along with pre-war risk factors; and
 - In 1998¹⁷¹ – the representation of war-zone stressors along with post-war resilience and recovery variables.¹⁷²
157. In this 1999 study the authors formulated and tested an integrated structural equation model using the variables investigated in their previous studies (pre-war risk factors, war-zone stressors and post-war resilience-recovery variables), using data from 1,200 men and 432 women from the NVVRS.¹⁷³
158. Relationships among pre-trauma risk factors (e.g., family instability, childhood antisocial behaviour), war-zone stressors (e.g., combat, perceived threat), post-trauma resilience-recovery variables (e.g. hardiness, social support), and PTSD symptom severity were examined:¹⁷⁴
- a. For men and women, the authors found six common variables that had direct relationships to PTSD:
 - ...the pre-war risk factor of early trauma;
 - ...the war-zone stressors of atrocities – abusive violence and perceived threat; and
 - ...the post-war resilience-recovery variables of additional stressful life events, hardiness and functional social support.¹⁷⁵
 - b. For men the authors found an additional three variables had direct relationships to PTSD:
 - ...the pre-war risk factor of age at entry to Vietnam;
 - the malevolent environment war-zone stressor;
 - ...the post-war resilience-recovery variable of structural social support.¹⁷⁶

¹⁷⁰ King et al (1995).

¹⁷¹ Citing: King, L.A. et al. (1998) 'Resilience-recovery factors in posttraumatic stress disorder among female and male Vietnam veterans: Hardiness postwar social support, and additional stressful life events'. *Journal of Personality Social Psychology*. 74, pp 420-434.

¹⁷² At page 165.

¹⁷³ Kulka, RA et al. 1990, *Trauma and the Vietnam Generation, Report of Findings from the National Vietnam Veterans Readjustment Study* vol 1 Brunner / Mazel, New York.

¹⁷⁴ See at page 166 and Table 1 page 166.

¹⁷⁵ See at Pages 166-7.

¹⁷⁶ See at page 167.

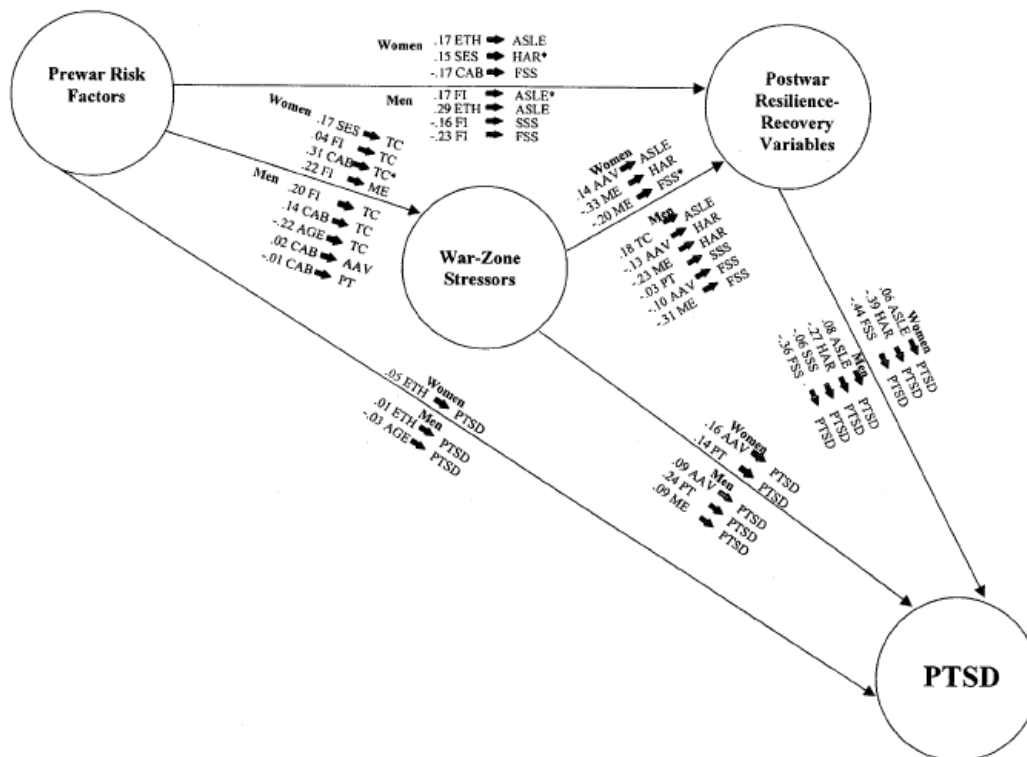


Figure 1. Simplified representation of the structural models of the associations among prewar risk factors, war-zone stressors, postwar resilience-recovery variables, and posttraumatic stress disorder (PTSD). All between-category coefficients for women and men are standardized within genders. SES = socioeconomic status; FI = family instability; ETH = early trauma history; CAB = childhood antisocial behavior; AGE = age at entry to Vietnam; TC = traditional combat; AAV = atrocities-abusive violence; PT = perceived threat; ME = malevolent environment; ASLE = additional stressful life events; HAR = hardiness; SSS = structural social support; FSS = functional social support. Relationships with asterisks were not predicted in this study or observed in the prior component studies.

Figure 1 Illustration of the results of the authors' modelling¹⁷⁷

159. The authors noted that:

the only inconsistency in direct relationships to PTSD over the several studies in the sequence involved the association between malevolent environment and PTSD.¹⁷⁸

and specifically:

In the earlier study of pre-war and war-zone variables...this relationship was obtained for both genders...In the prior study of post-war and war zone variables, the relationship was not observed for either gender...

In the current study...the association was not present for women, and a rather modest association was retained...for men with the large majority of malevolent environment's total effect (74%) attributable to its indirect relationship to PTSD through other war-zone stressors and post-war variables.

¹⁷⁷ Figure 1 at page 167.

¹⁷⁸ Page 167.

160. The relative contributions were different for men and women. The war-zone stressors were the most important for men, and for women veterans, the post-war resilience factors were more important.¹⁷⁹

161. The authors expected that there would be a hierarchy (confirmed for men but not for women) among the variables contributing to PTSD:

war-zone stressors proposed to be preeminent, followed by postwar resilience-recovery variables, and then prewar risk factors.¹⁸⁰

162. By summing the absolute values of the direct and indirect effects of each variable within the category the authors found that:¹⁸¹

For men...the total effects for war-zone stressors was 1.36; for postwar resilience-recovery variables, the value was .96; and for prewar risk factors it was .80

For women...the sums were 1.10 for war-zone stressors; 1.33 for the postwar resilience-recovery variables...and .53 for the prewar risk factors... .

163. The authors acknowledged that the cross-sectional design of the study and the retrospective self-report nature of the data mandated careful interpretation of their findings. These concerns were primarily about the direction of relationships among variables.

164. However, the authors concluded that:¹⁸²

...the findings endorse a multivariate perspective on PTSD...all categories of variables (pretrauma, trauma, and posttrauma) appear important to...understanding ... individual differences in the display of symptoms.

Thus, events and circumstances that preceded the focal trauma as well as events and circumstances that characterise the post-trauma environment must be recognised.

In addition, for both women and men, the resilience-recovery variables were quite potent. Particularly relevant were the large associations of hardiness and functional social support with PTSD. ...[these] variables may serve to uniquely offset the deleterious consequences of stressors on PTSD.

...the findings endorsed a multifactorial representation of the traumatic experience itself, in this case, several war-zone stressor dimensions being differentially associated with both pretrauma risk factors and posttrauma resilience-recovery variables.

¹⁷⁹ Page 168.

¹⁸⁰ Page 168.

¹⁸¹ Page 168.

¹⁸² Page 168.

165. With respect to further understanding PTSD symptoms, the authors recommended that:

...exposure to multiple stressful events over an extended period of time, perhaps many years, may drive current symptomatology and mandates more than a narrow investigation of a single traumatic event.¹⁸³

Council's comments

166. The Council considered this study touched on the contended factor regarding malevolent environment and the contended factor regarding perception of threat.

167. The Council noted that this study extended the work from the earlier NVVRS studies, in particular the King et al (1995) paper, summarised in these Reasons, and the Council's comments made in respect of the 1995 paper apply equally here.

168. For the contended factor in respect of malevolent environment the Council considered that this study:

- pointed to the relevant association; but
- did not satisfy the balance of probabilities test

for clinical onset and clinical worsening.

169. For the contended factor in respect of perception of threat, the Council considered that this study:

- pointed to the relevant association; but
- did not satisfy the balance of probabilities test

for clinical onset and clinical worsening.

Fontana A & Rosenheck RA 1999, 'A model of war zone stressors and posttraumatic stress disorder.' *Journal of Traumatic Stress* 12:111-126. RMA ID 34253.

170. The aim of this study was to develop:

a rational conceptual model ... which specifies the nature of the relationships among war zone stressors themselves as well as their relationships to PTSD.¹⁸⁴

171. The authors undertook this study to investigate further these relationships with concepts developed by King et al in their 1995 paper.

172. Subjects in this study were 1,117 theatre veterans from the NVVRS, randomly divided into two groups (n= 567 and n=550) each with an average age of 40 years.¹⁸⁵

¹⁸³ Page 169.

¹⁸⁴ Page 112.

173. The authors noted that:

the landmark ... NVVRS combined data on several types of stressors into one index of war zone stress, which included combat, death and injury of others, threat of death to oneself, abusive violence and physical deprivation... In addition, the NVVRS identified loss of meaning and control as another type of stressor. Most recently, King and his colleagues have combined physical deprivation and loss of meaning and control as exposure to a malevolent environment.

174. The authors noted that the King et al, 1995 study:¹⁸⁶

reported that malevolent environment was the stressor that contributed most strongly to PTSD, eclipsing even combat in magnitude. The authors noted that malevolent environment was composed of 'relatively low magnitude stressors' that might better be called 'daily hassles' rather than *traumatic* events.¹⁸⁷

175. The authors referred to it as a 'surprising finding' by King et al, 1995 that exposure to malevolent environment was:

the stressor that contributed most strongly to PTSD, eclipsing even combat in magnitude.¹⁸⁸

176. To test any potential relationships between variables, the authors constructed a structural equation model, which they described as an extension of multiple regression analysis.¹⁸⁹ They separated:

- combat stress into five related experiences (including fighting, threat of death or injury to oneself, death or injury to others, killing others and committing atrocities), and
- malevolent environment into two components, the physical conditions of the environment and the conditions of insufficiency and constraint that often prevailed.¹⁹⁰

¹⁸⁵ See pages 111 and 115.

¹⁸⁶ King et al, 1995, discussed elsewhere in these Reasons.

¹⁸⁷ Page 112.

¹⁸⁸ Page 112.

¹⁸⁹ Page 115.

¹⁹⁰ Page 113.

177. The 'physical conditions of the environment' were measured by three items:

- bad climate;
- insects, disease and filth; and
- lack of shelter from the weather.

178. 'Insufficiency of the environment' was measured as shortages and constraints by reference to 7 items:

- bad food;
- an inadequate amount of:
 - food;
 - water;
 - weapons or munitions;
 - equipment or supplies;
 - loss of freedom of movement; and
- lack of privacy.

179. Items that measured a reaction to environmental conditions (as distinct from the environmental conditions themselves) were excluded from both the physical conditions and the insufficiency of the environment variables.¹⁹¹

180. Perceived threat of one's own death or injury was measured by five items:

- exposure to danger and risk of casualty;
- fear of being killed or injured;
- fear of surprise attack;
- feeling that one would never survive the combat situation; and
- danger of being killed or wounded.¹⁹²

181. Levels of exposure were also differentiated, depending upon where troops were stationed:

ground troops .. stationed in the countryside, are posited to be exposed to more unpleasant physical conditions and to more fighting. The further out in the field that troops are stationed, the less is technology available to counter inclement weather, insects or dirt, and the closer is the perimeter of safety.¹⁹³

¹⁹¹ Page 118.

¹⁹² Page 119.

¹⁹³ Page 113.

182. Insufficiency of the environment, (in the form of inadequacies of supplies and constraints on freedom of movement) was:

posited to contribute to the perceived threat of the situation and exposure to the death and injury of others because of the increased vulnerability of one's unit due to the exhaustion of munitions and supplies.¹⁹⁴

183. The model tested whether 'insufficiency' had a direct as well as an indirect contribution to PTSD.

184. PTSD was measured as the predicted probability of being diagnosed with PTSD as determined at interview, from nine variables, including the Mississippi Scale for Combat-Related PTSD. The predictive model estimated the unadjusted prevalence of PTSD in the group (from a clinical subsample) as 21% (SD =0.32).¹⁹⁵

185. After statistical modelling and cross-validation, the authors found that 'most of the connections among variables specified theoretically were borne out empirically'.¹⁹⁶

186. Contrary to the authors' theoretical expectations, perceived threat did not contribute to PTSD directly, once the other contributors were taken into account.¹⁹⁷

the perception of threat to one's life and safety appears to be a concomitant reaction to other war zone stressors but it does not appear to be of substantial importance to the development of PTSD aside from these other stressors.¹⁹⁸

¹⁹⁴ Page 114.

¹⁹⁵ Page 120.

¹⁹⁶ Page 122.

¹⁹⁷ Page 123.

¹⁹⁸ Page 123.

- Death of others contributed both to the perception of threat to oneself and to killing or injuring others.
- Killing or injuring others had, as expected a strong direct effect on PTSD.
- Fighting did not have significant direct effects on PTSD after accounting for all the mediating elements of insufficiency of supplies, constraints on freedom; exposure to death and injury of others; and the need for one's own killing of others.
- Committing atrocities (other than killing or injuring others) was not found to make a substantial effect on PTSD. Harsh physical conditions did not contribute directly to PTSD, once the indirect effects of insufficiency of supplies; constraints on freedom and privacy were taken into account
- Insufficiency of environment had a large direct effect on PTSD; even when mediated by variables of death and injury of others and to perceived threat. (p122)...

187. In the final model, the insufficiency of the environment was found to have had a large direct effect on PTSD, with the authors concluding that:¹⁹⁹

the contribution of a malevolent environment to PTSD, therefore, would not seem to reside as much in harsh physical conditions as in the shortages and constraints that are a function of those conditions and the fighting in which soldiers engage.²⁰⁰

188. Based on what the authors considered the best-fitting model they had developed, the authors suggested that insufficiency of the environment, defined as above, was the aspect of 'malevolent environment', which contributed significantly to PTSD.²⁰¹ They found that harsh physical conditions contributed indirectly but not directly to PTSD.²⁰²

189. Harsh physical conditions did not contribute directly to PTSD, once the indirect effects of insufficiency of supplies; constraints on freedom and privacy were taken into account.²⁰³

190. The authors illustrated their final model with a figure showing the direction of relationships and magnitude of contribution found between each variable.

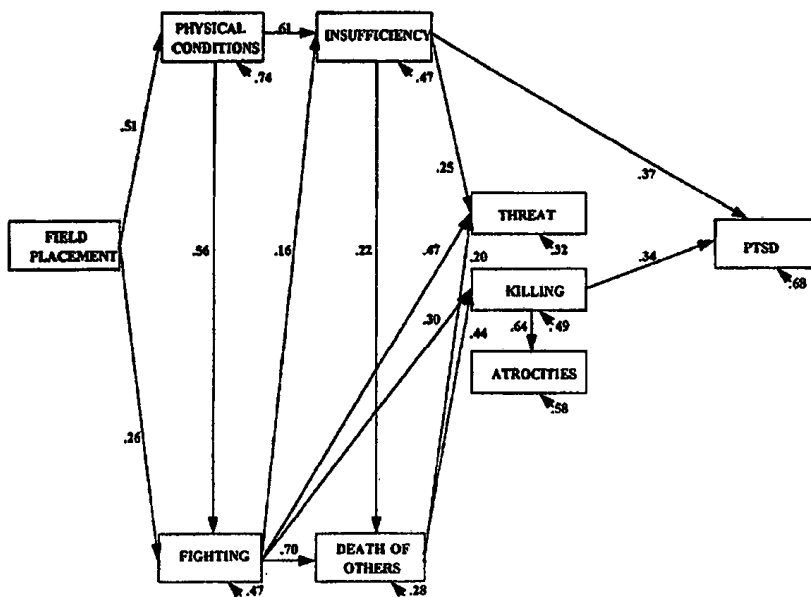


Figure 2. Cross-validated model for the interrelationships among war zone stressors and their relationships to posttraumatic stress disorder.

Figure Authors' model after cross-validation of results²⁰⁴

199 Page 122.
 200 Page 123.
 201 Page 121.
 202 Page 122.
 203 Page 122.

191. The authors acknowledged that some limitations of the study included the retrospective nature of the data; its susceptibility to reporting bias; and the fact that the model only accounted for 32% of the variance in PTSD, leaving open the question of other pre-military and post-military factors. They also queried the generalisability of the study across other war-zones, i.e. aside from Vietnam.

Council's comments

192. The Council considered this study touched on the contended factor regarding malevolent environment and the contended factor regarding perceived threat.

193. While the Council considered the data in this study was quite difficult to interpret, it was also of the view that the study articulated the concept of 'malevolent environment' better than most. It separated the concept of malevolent environment into two main categories then listed items within these categories.

194. The Council noted that in particular, the 'insufficiency of the environment' aspect as described in the study, was the aspect of malevolent environment found to be most associated with PTSD. However, the Council considered that breaking down the components for sub-analyses reduced the statistical power made available by a grouped analysis. For this reason, the Council considered the results of the overall 'malevolent environment' analysis to be more useful than the separate analyses of 'physical conditions' and 'insufficiency of the environment'.

195. Further, the Council considered that the many components of the malevolent environment referred to in the study, while being the most differentiated of all the studies, made this concept difficult to operationalise. While some components, such as inadequacy of food, are able readily to be identified objectively, other components such as loss of control are fundamentally a matter of individual perception. The Council considered that the difficulty in separating the components of malevolent environment made it difficult to gauge the association if any, particularly given the numbers of persons in the study.

196. The Council considered that the study identified a clear association between 'recall' of the malevolent environment' and 'recall' of the reactions that characterise PTSD. However, it noted that events had occurred at least 10 years prior to the interviews, which raised a potential problem given the retrospective nature of the data. It is possible that those who suffer from PTSD recollect and report prior events in a negative light, given their psychiatric status.

²⁰⁴ See Figure 2 at page 116.

197. The Council further considered that it was a limitation of the study that the effect of the 'malevolent environment' could not be disentangled from that of objective trauma and traumatic events that many of the study participants had experienced, even though the study had tried to adjust for the effects of combat trauma. The Council's concern was that the malevolent environment may have compounded the traumatic event - it is not known what the situation would have been without the traumatic event. It may be, therefore, that the malevolent environment was (only) exacerbating the effects of trauma in a military context.
198. The Council considered there were some limitations with the scale used for assessing trauma and its effects. The study used the Mississippi Scale for Combat-related Trauma, which focusses on combat events. They may not necessarily be the event/s which precipitated PTSD. Further, the Council considered the study ignored any pre-disposing earlier traumatic events or other risk factors. The Council noted that there can be multiple contributing factors to symptom development.
199. It was not entirely clear to the Council whether the data was in fact anchored to an objective trauma rather than to a non-traumatic 'malevolent environment'.
200. The Council also noted that the study characterised a conceptualisation of 'perceived threat'. However, using the multivariate and structural equation model developed by the authors, the contribution of 'perceived threat' to PTSD was found to be indirect only.
201. Acknowledging the abovementioned limitations, and conscious of the low threshold for the reasonable hypothesis test, the Council considered that for malevolent environment this study:
- pointed to the relevant association; but
 - did not satisfy the balance of probabilities test
- for clinical onset and clinical worsening.
202. For perception of threat the Council considered that this study:
- did not point to, but merely left open the possibility of the relevant association
- for clinical onset and clinical worsening (and so necessarily did not satisfy the balance of probabilities test for clinical onset and clinical worsening).

Kaysen D, Resick PA, Wise D 2003 'Living in danger. The impact of chronic traumatization and the traumatic context on posttraumatic stress disorder' Trauma, Violence & Abuse, 4(3) pp 247-264 RMA ID 43785

203. In this literature review the authors reviewed research regarding a putative association between chronicity of traumatising and PTSD symptomatology. They focused on three populations: combat veterans, child sexual abuse survivors, and survivors of domestic violence. The Council focussed only on the combat veterans population.

204. Having regard to the definition of PTSD in DSM IV, and in particular the need for a Criterion A traumatic event, the authors noted the significance of what they called 'traumatic context', which they defined as the surrounding environment, consisting of non-Criterion A events that increase perception of danger. It was a term used by the authors:

to describe the other types of stressors found in chronic traumatogenic environments that increase perceptions of danger... This term includes objective incidents... and subjective perceptions... The traumatic context is not meant to include other types of stressors that can be associated with chronic traumatising, but that do not lead to a heightened perception of danger. Examples of these excluded stressors are events such as the boredom of being on guard duty in a combat setting...

205. The authors noted that the traumatic context can be damaging because of the effects of living in a state of constant danger.²⁰⁵ They considered that the traumatic context of the combat environment 'appears to reflect aspects of ... the harsh or malevolent environment' referred to by King et al.²⁰⁶

206. The authors reviewed studies concerning the duration of exposure to combat (combat being recognised as a risk factor for the development of PTSD). They noted that participation in multiple wars, reportedly, increased the likelihood of PTSD. In general terms, the greater the time spent in a combat zone, the greater likelihood both of PTSD symptomatology, and of more persistent PTSD symptoms.²⁰⁷

207. The authors reviewed the NVVRS in some detail, which study they described as 'exemplary in terms of its sample and its overall methodology.'²⁰⁸ They noted that the study had found a significant relationship between level of PTSD and

²⁰⁵ Page 249.

²⁰⁶ Page 252.

²⁰⁷ Page 250.

²⁰⁸ Page 250.

the number of months spent in Vietnam, with the 'turning point' being 13 months.²⁰⁹

208. The authors noted that previous research had concluded that more time spent in potential danger could lead to higher levels of PTSD symptomatology, without separating the effects of the Criterion A stressors and the surrounding traumatic context. They noted that:

although combat exposure can include a wide range of Criterion-A traumatic events, it is rarely a constant barrage of gunfire and mortar blasts. There are other potentially stressful aspects of combat, such as waiting for the next round of gunfire, fearing contracting diseases, or patrolling dangerous areas ... These experiences serve to create an atmosphere of chronic danger...²¹⁰

209. The authors noted that application of the War Zone Stress Exposure Scale showed that those veterans in a high exposure war zone stress group had greater PTSD symptoms than those in lower exposure groups. The authors expressed some caution in interpreting these results, however, noting that:

although these results are suggestive of a relationship between the traumatic context and increased symptomatology, these results could also have been due to the impact of the Criterion-A events that were included in the War Zone Stress Exposure Scale.²¹¹

210. In analysing traumatic context, the authors noted the study by Sutker et al 1995,²¹² which applied the Operation Desert Storm Stress Exposure Scale. This is a scale specific to the Persian Gulf War, which quantifies perceptions regarding the threat of attack, harshness of the physical environment, separation from family and other war zone elements. The results of this study suggested that the perceived traumatic context may be worse for veterans with greater PTSD symptoms. However, Kaysen et al noted that this scale removed items reflecting Criterion-A1 events, but included Criterion-A2 perceptions of threat.²¹³

211. The authors considered that the path analysis used by Fontana et al in their 1999²¹⁴ study of the NVRRS data allowed a more in-depth understanding of 'traumatic context'. That analysis showed that harsh physical conditions contributed to insufficient resources, which in turn contributed to the

²⁰⁹ Page 251.

²¹⁰ Page 251.

²¹¹ Page 251.

²¹² Citing: Sutker P. et al. 'War zone Stress, Personal Resources and PTSD in Persian Gulf returnees' (1994) *Journal of Abnormal Psychology* 104 pp 444-452.

This information was not available to the RMA at the relevant times and so could only be considered by the Council as new information

²¹³ Page 252.

²¹⁴ Fontana et al 1999, discussed in these Reasons.

perception of threat to self and others, and directly to PTSD symptoms.
Thus, concluded Kaysen et al:

the traumatic context appears to increase perceptions of danger, thereby leading to increased symptoms.²¹⁵

212. They considered that the traumatic context included such factors as being stationed in an unsafe area, coping with bad climate, coping with insects and filth, and the threat of disease and injury. On the other hand, they considered that factors such as coping with bad food, separation from family and friends, and dealing with the lack of privacy might not reflect the traumatic context.²¹⁶

213. With respect to studies concerning combat, Kaysen et al concluded that:

the aggregate of research on combat and PTSD indicates that a longer period of time and combat is associated with increased PTSD symptomatology... More time spent in potential danger - exposure to violence, and perceived danger related to disease and uncomfortable conditions while in combat -has also been associated with higher levels of PTSD in male and female veterans... This supports the premise that duration of combat and the traumatic context are associated with PTSD symptomatology. These results also highlight the challenges of disentangling the effects of duration from the effects of the traumatic context.²¹⁷

214. The authors concluded from their review that:

the *DSM IV* field trials found that non-Criterion A stressors did not, in and of themselves, cause PTSD (March, 1993). The ongoing sense of danger occurs primarily because something traumatic has occurred in the past and may again occur.²¹⁸

215. Nevertheless, the authors said that their:

review found an association between the traumatic context and increased PTSD symptomatology. Current theories of PTSD generally concentrate on the role of Criterion-A events in the development of the disorder and have not generally addressed the role of the surrounding environment. The traumatic context may be important to examine because it increases the perception of danger between traumatic incidents. This conceptualisation is consistent with the results of the one study that examined the mechanisms between the malevolent environment, perceptions of safety, and PTSD symptomatology (Fontana and Rosenheck 1999). This would be consistent with theories of PTSD that emphasise the role of cognitions about danger and feelings of fear in the aetiology of the disorder... current theories of PTSD may need to be modified or expanded.²¹⁹

²¹⁵ Page 252.

²¹⁶ See at page 252.

²¹⁷ Page 253.

²¹⁸ Page 259.

²¹⁹ Pages 259-260.

Council's comments

216. The Council noted that this study touched on the contended factor regarding malevolent environment and the contended factor regarding perception of threat.

217. The Council considered this study was useful because it clarified issues in this field of research. It provided further information about known associations and also presented a possible link between traumatic events and traumatic context. However, it was a review presenting the authors' view and not primary evidence.

218. The Council considered that the War-zone Exposure Scale discussed in the study did not disentangle traumatic events from non-traumatic events.

219. For malevolent environment, the Council considered that this study:

- did not point to, but merely left open the possibility of the relevant association

for clinical onset and clinical worsening (and so necessarily did not satisfy the balance of probabilities test for clinical onset and clinical worsening).

220. For perception of threat, the Council considered that this study:

- did not point to, but merely left open the possibility of the relevant association

for clinical onset and clinical worsening (and so necessarily did not satisfy the balance of probabilities test for clinical onset and clinical worsening).

Ozer EJ, Best SR, Lipsey TL, Weiss DS, 2003 'Predictors of posttraumatic stress disorder and symptoms in adults: a meta-analysis', *Psychological Bulletins*, Vol 129 pp 52-73. RMA ID 31761

221. This was a meta-analysis of predictors of PTSD or its symptoms, from a systematic review of relevant articles published between 1980 and 2000.

222. Seven predictors were analysed, based on factors which had been sufficiently studied in the literature:²²⁰

- (a) prior trauma,
- (b) prior psychological adjustment,
- (c) family history of psychopathology,
- (d) perceived life threat during the traumatic event,
- (e) post-trauma social support,
- (f) peritraumatic emotional responses, and

²²⁰ Page 55.

(g) peritraumatic dissociation.

223. From 2647 initially identified, 68 studies met all inclusion criteria.²²¹ Studies were excluded based on methodology; if they did not assess DSM-IV PTSD or all of its symptom clusters; or if they did not address the correlates under consideration.

224. The authors quantitatively analysed, one effect size per outcome per construct per study, and chose continuously measured variables where available. They investigated variations within each predictor according to type of sample, length of time elapsed between exposure and assessment, and type of trauma studies and method of PTSD assessment.²²²

225. All variables yielded significant effect sizes.

226. Twelve studies addressed perceived life threat during the traumatic event and PTSD symptoms, totalling 3,524 participants. This variable had a statistically significant pooled effect in the 'small-to-medium range' of .26 (range .13 to .49).²²³ The strength of the association for this variable was consistent among studies of varying size and methods, although it was:

higher among studies with more time elapsed between the traumatic event and the assessment of PTSD.

... perceived life threat during the traumatic event was more strongly associated with PTSD when the traumatic experience was non-combat interpersonal violence.²²⁴

227. However, the authors stated:

the meta-analysis did not include as a predictor the exposure to the index traumatic event about which PTSD symptoms were measured because exposure to such an event is a necessary criterion for diagnosis of PTSD.²²⁵

228. The authors noted considerable methodological shortcomings in the literature on this subject and the retrospective nature of the data. They pointed out the implications of the 'waxing and waning of PTSD symptoms' for study assessments.²²⁶

221 Tables of studies – showing instruments and results are provided in the article.

222 Page 56.

223 Page 61, and Tables 4 and 8.

224 See at page 63.

225 Page 55.

226 Page 68.

Council's comments

229. The Council considered this large and useful meta-analysis did not touch on the contended factor regarding malevolent environment, but touched on the contended factor regarding perception of threat.

230. The Council considered the review brought together evidence that PTSD is a multifactorial condition, and that perceived threat is one of the important measures when aggregating a model seeking to account for contribution. However, the Council considered there was a logical problem in that perceived threat could be confounded by actual trauma exposure, which possibility the Council considered was supported by the paper.

231. Although the paper did not separate the perception of threat from actual threat, the Council considered that it pointed to the possibility that perception of threat could be associated with PTSD.

232. In relation to perception of threat, the Council considered that this meta-analysis:

- pointed to the relevant association; but
- did not satisfy the balance of probabilities test

for clinical onset and clinical worsening.

Ikin JF, Sim MR, Creamer MC, Forber AB, et al 2004 'War-related psychological stressors and risk of psychological disorders in Australian veterans of the 1991 Gulf War' *British Journal of Psychiatry*, Vol 185 pp 116-26 RMA ID 32984.

233. This cross-sectional study aimed to assess any increased risk of developing psychological disorders for male Gulf War (1991) veterans compared to Australian Defence Force (ADF) personnel not deployed to the 1991 Gulf War.²²⁷ Further, it aimed to explore whether any such increased risk could be explained by a 'war deployment effect' and any association with psychological stressors experienced during the deployment; and finally to investigate potential effects of participation bias.

234. The authors examined pre- and post-war diagnoses in all available Australian 1991 Gulf War veterans in comparison to a matched random sample of Australian ADF personnel who had not been deployed to the 1991 Gulf War. Of the selected participants who completed a questionnaire, 1381 men in the Gulf group (a participation rate of 78.2%) and 1377 men in the non-Gulf comparison group (50.5% of the original sample) also underwent

²²⁷ Women were deployed in the 1991 Gulf War, and were in the comparison group, but due to the small numbers, the analyses were limited to males, see at page 117.

psychological health assessment.²²⁸ Respondents were predominantly from the Navy (72.5%).²²⁹

235. The instruments used to measure PTSD were Composite International Diagnostic Interview (CIDI-auto 2.1) and DSM-IV.²³⁰

236. The Military Service Experience Questionnaire (MESQ) used to gather information on combat exposures was a 44 item questionnaire developed for this study from various combat scales. The authors explained that the MSEQ incorporated assessment of a wide range of potentially stressful Gulf War experiences.

237. Common themes in the survey covered:

fear of entrapment below the waterline on ships, fear of death, threat of biological or chemical attack, exposure to the death or suffering of others, feelings of helplessness and lack of control, poor preparation, malevolent environment, lack of support and lack of unit cohesion.²³¹

238. Rates of pre-Gulf War estimated PTSD were similar between the two cohorts (1.3% for the Gulf War veterans vs 1.2% for the comparison group); whereas post-Gulf War onset PTSD incidence was highly elevated in the Gulf War cohort versus the comparison group (5.4% vs 1.4%) adjusted OR =3.9 (95%CI 2.3-6.5).²³²

239. A sub-analysis investigated a potential 'war deployment effect' (as distinct from a potential Gulf War effect), restricting the comparison of Gulf War participants with those personnel from the comparison group who had been actively deployed elsewhere at least once (n= 450).²³³ Compared to the group deployed elsewhere, the odds ratio for 12-month PTSD prevalence was reduced but remained statistically significant (OR 2.2, 95% CI 1.1-4.6).²³⁴ This statistic took into account pre-Gulf War PTSD in addition to service type, rank, age, education, and marital status. However, the authors noted that many members of the comparison group reporting active deployment had been involved in peacekeeping missions (rather than combat).²³⁵

²²⁸ Page 118.

²²⁹ See Table 1 at page 119.

²³⁰ World Health Organisation 1997, *Composite International Diagnostic Interview CIDI-Auto 2.1, Administrator's guide and reference*, WHO, Geneva.

²³¹ See at page 117.

²³² See Table 2 at page 120 and page 118 for definition of statistics used.

²³³ See at Table 4, page 121. Text on page 118 says 114 comparison subjects were deployed.

²³⁴ See at page 118 and Table 4 at page 121.

²³⁵ See Table 4 at page 121.

240. Based on responses to the MSEQ, Gulf War-related stressor summary scores were derived.²³⁶

241. These scores showed a significant dose-response in relation to PTSD ($p < 0.0001$), with a predicted increase of 23% in the odds for PTSD per unit increase in the MESQ score.²³⁷

- The category with a relatively low score (5-8) showed no statistically significant increase in PTSD risk, OR=0.6 (95%CI 0.1-3.9), whilst
- a score of 9 to 12 in the MSEQ was significantly related to PTSD with an adjusted OR = 4.2 (95% CI 1.3-18.3)
- for an MSEQ score of greater than 12, the odds ratio reached 14.4 (95% CI 4.9-57.9).

242. The authors found that Gulf War veterans were more likely to show evidence of psychological disorders within the previous 12 months, including PTSD, where the elevation in risk was approximately fourfold (OR =3.78, 95% CI 2.25-5.92).²³⁸

243. The authors noted that:

...the Australian Gulf War deployment involved few direct military attacks and resulted in no deaths and few casualties. Consequently, instead of reporting stressors of a direct combat nature, Australian veterans commonly reported stressors in relation to the threat of combat, fear associated with its uncertainty (particularly the risk of chemical or biological agent attack) and the isolation and discomfort of deployment.²³⁹

244. While participation bias and confounding were potential issues, statistical modelling by the authors suggested that participation bias was unlikely to have accounted for the excess risk of PTSD in the Gulf War veterans.²⁴⁰ Despite a lower participation rate in the comparison group (which resulted in differential demographic profiles), the authors considered their results were likely to be robust.²⁴¹

245. Limitations of the study as identified by the authors included the retrospective administration of the MESQ, allowing for possible recall bias; and for the fact that the MESQ for the comparison group had been newly developed.

²³⁶ See Table 6 at page 122.

²³⁷ See Table 6 at page 119.

²³⁸ See page 123 and Table 7: observed OR 3.88. Result imputed for full participation =3.78.

²³⁹ See at page 123.

²⁴⁰ See at page 124 and Table 7 page 123.

²⁴¹ See at page 124.

Council's comments

246. The Council considered this study touched on the contended factor regarding malevolent environment and the contended factor regarding perception of threat.
247. The Council considered this article highlighted the interconnectedness between the two concepts of malevolent environment and perceived threat; the difficulty in separating them; and the risk of conflation. With respect to perceived threat, the Council noted that the personnel who had been deployed to the 1991 Gulf War had had a fear of exposure to biological and chemical weapons. The study dealt with actual or perceived threat in a combat zone.
248. The Council considered that the study provided quite reliable evidence of the relevant association with perceived threat. The Council noted that results included a dose-response effect between the MSEQ score (which incorporated perception and malevolent environment as well as actual combat) and PTSD (see Table 6).
249. Further, the Council noted that part of the variance may have been accounted for by previous deployment elsewhere, these Gulf veterans were still twice as likely to get PTSD as veterans deployed elsewhere (see Table 4). Only a small number of the Gulf veterans in the study having been exposed to a Category 1A stressor, the Council considered this suggested that PTSD can develop without exposure to a Criterion 1A stressor, ie, without an actual traumatic event, but in a situation or environment of deployment where a reasonable perception of threat might occur.
250. The Council noted that there are often methodological shortcomings in retrospective studies. However, the Council considered that this study had the advantage of being a 'natural experiment.' A cohort of service personnel were in a situation where the exposures were objectively verified, and the results indicated the likelihood of PTSD developing without actual combat experience.
251. The Council noted that the study dealt with the experiences of Australian veterans, the majority being Australian Navy personnel who had been deployed on a ship during the Gulf War. With respect to malevolent environment, the Council noted that the nature of the environment under consideration in this study was quite different from that of Vietnam veterans as had been described by Mr M in his oral submission complementing the Applicant's written submission. While the Council had some initial concerns about the generalisability of the findings, it concluded that the findings should not be restricted to Naval service, and indeed that it would be unreasonable to do so.

252. For the contended factor of malevolent environment, the Council considered that this study:

- pointed to the relevant association; and
- satisfied the balance of probabilities test

for both clinical onset and clinical worsening.

253. For the contended factor of perception of threat, the Council considered that this study:

- pointed to the relevant association; and
- satisfied the balance of probabilities test

for both clinical onset and clinical worsening.

THE COUNCIL'S CONCLUSIONS ON WHETHER THERE SHOULD BE A PERCEIVED THREAT AND/OR MALEVOLENT ENVIRONMENT FACTOR

254. The Council considered that the relevant association must be analysed on the basis of the whole body of information in the pool. The Council closely analysed all the information in the pool which touched on the contended factors. However, it placed particular weight on the articles discussed in detail above.

255. The critical question for the Council was whether the sound medical-scientific evidence *'points to, as opposed to merely leaves open, the possibility of the relevant association.'*²⁴² It is only if the Council answered that question in the affirmative that it needed to consider whether the relevant association was established on the balance of probabilities.

256. The Council considered its task a very difficult question of judgement, and acknowledged that its decisions on whether the relevant tests had been met were necessarily a question of expert and professional judgement, and matters in respect of which reasonable minds may differ.

257. For the Council, consideration of the statistical data was a necessary, but not sufficient consideration of whether the different tests were met. The Council considered all the studies, both individually and collectively, in considering whether the sound medical-scientific evidence available to the RMA at the relevant times 'pointed to' as opposed to merely leaving open the relevant association, and if so, whether it satisfied the balance of probabilities test.²⁴³

²⁴² See full Federal Court decision at [49] per Branson J and [76(a)] above.

²⁴³ See [76(b)].

258. The Council noted as a matter of clinical diagnosis and management that patients may have all the symptoms of PTSD while not meeting either or both of DSM-IV-TR diagnostic criteria A1 and/or A2. Consistent with this experience, the Council noted that diagnostic Criteria A1 and A2 in the DSM-IV-TR had become increasingly contentious over time.²⁴⁴ In May 2013, DSM-IV-TR was replaced by DSM-5 (discussed below under New Information).
259. Further, the Council had some concern that the definitions of the category 1A and 1B stressor factors as set out in paragraph 9 of the existing Statements of Principles,²⁴⁵ were inconsistent with the diagnostic criterion for the kind of injury, disease or death set out in paragraph 3(b)A(i) of the Statements of Principles (which is in turn derived from diagnostic criterion A1 of DSM-IV-TR). Also the Council considered the stressor definitions to be unduly restrictive in not fully including threats to self or others.
260. Notwithstanding clinical and research experience, the Council's task was to decide whether there was sound medical-scientific evidence available to the RMA which would justify amendment to the Statements of Principles. The Council considered that the question of whether the sound medical-scientific evidence available to the RMA 'pointed to' the relevant association for malevolent environment and perceived threat was finely nuanced.
261. While the contended factors of malevolent environment and perceived threat were presented as separate exposures, the Council considered there was a strong interconnection between the two concepts, and that they were bidirectional.
262. As detailed above, the Council considered there were deficiencies in the available information referable primarily to the various measurement scales used, and the fact that most studies were cross-sectional, relying on the subjective and retrospective report of the participants. This creates the potential for recall bias, especially in persons who have PTSD symptoms.
263. There was also some uncertainty as to whether the sound medical-scientific evidence indicated that there was an independent relevant association with malevolent environment, or whether it served only to exacerbate existing symptoms in circumstances where there had been an exposure to an actual trauma. Similarly, the sound medical-scientific evidence was not able clearly to distinguish between perception of threat and actual threat, nor fully to disentangle the effect of combat stressors.

²⁴⁴ See footnote 9.

²⁴⁵ See footnote 11. These stressor definitions apply to factors (a) (b) (c) (e) (f) and (g) of Statements of Principles Nos. 5 and 6 of 2008.

264. Ultimately, though, the Council, being always cognisant that the reasonable hypothesis standard is a 'test of possibility' and 'an unusually light burden', considered that:

264.1. for **malevolent environment** the combined effect of the studies by:

- Fontana A and Rosenheck RA 1999
- Ikin et al 2004
- King DW et al 1995
- King DW et al 1999
- Keane, TM et al 1998
- Litz BT et al 1997
- O'Toole et al 1998

'pointed to' (as opposed to merely leaving open) the relevant association for both clinical onset and clinical worsening, but save for Ikin et al 2004, did not satisfy the balance of probabilities test.

264.2. for **perceived threat** the combined effect of the studies by:

- Ikin et al 2004
- King DW et al 1995
- King DW et al 1999
- Keane TM et al 1998
- Litz BT et al 1997
- Ozer, EJ et al 2003
- O'Toole et al 1998

'pointed to' (as opposed to merely leaving open) the relevant association for both clinical onset and clinical worsening, but save for Ikin et al 2004, did not satisfy the balance of probabilities test.

265. The paper by Kaysen et al 2003 did not point to, but merely left open, the relevant association for both malevolent environment and perceived threat (both clinical onset and clinical worsening), and so necessarily did not satisfy the balance of probabilities.

266. Whilst the Council considered that Ikin et al 2004 did satisfy the balance of probabilities test when analysed in isolation (for both clinical onset and clinical worsening, and both malevolent environment and perceived threat) when the combined effect overall of the positive sound medical-scientific evidence available to the RMA was taken into account, the Council considered the balance of probabilities test was not met for any of clinical onset or clinical worsening for either contended factor. Overall, the Council

considered that the sound medical-scientific evidence was affected by methodological limitations, particularly the lack of specificity in the ascertainment and analysis of exposures and the retrospective nature of the data.

FACTOR/S

The Council's approach

267. Having found that the sound medical-scientific evidence available to the RMA at the relevant times 'pointed to' the relevant association, the Council took the view that the preferable way to direct an amendment to Statement of Principles No. 5 of 2008 was to direct the RMA to include a new factor in paragraph 6, rather than to direct any amendment to the existing definitions of category 1A and 1B stressors in paragraph 9.

268. The Council noted that the Commissions in their complementary oral submissions agreed, subject to the Council's analysis of the medical-science, with the Council's proposed course of the inclusion of a new factor, rather than changing existing paragraph 9 definitions.²⁴⁶ A real difficulty for the Council, though, was how to articulate an operational factor for inclusion in Statement of Principles No. 5 of 2008, with a sufficient degree of objectivity.

269. The Council noted the Commissions' submission as to the potential characterisation of a new factor. The Commissions' submission focused on:

factors that might contribute to the vulnerability or the propensity of someone to develop PTSD if they experienced a category A1 stressor ... such as prior

²⁴⁶ Transcript of complementary oral submissions at page 16.

As we see it, the 1A and 1B stressor factors and definitions match up to the criterion (A)(i) stressor requirement in the DSM IV diagnosis and we think, for practical purposes more than anything else, it should stay that way.

And the stressors being proposed by the [A]pplicant relating to perceived threat and malevolent environment, our view would be that they don't fulfil that criterion - that A1 requirement for the level of stressor, and that we are looking instead at factors that might contribute to the vulnerability or the propensity of someone to develop PTSD if they experienced a category A1 stressor. So we favour the Council's approach of looking to having additional factors, not amending the existing 1A and 1B stressor factors or definitions.

The Council noted the potential relevance from Ozer et al 2003 who:

suggested that the cluster of predictors identified may all point to a lack of psychological resilience (see at page 256).

psychiatric history or prior trauma exposure to factors that increase someone's vulnerability to get PTSD if they then experience a criterion A1 stressor.²⁴⁷

...factors that both increase your vulnerability and might be related to service. You could consider defining experiencing a life-threatening event in a way that would either allow the idiosyncrasies of the individual or not...

but noted that:

perceived threat to an event ... is a separate consideration and I think what the applicant is interested in ...²⁴⁸ which is perceived threat within an environment.²⁴⁹

270. The Council was conscious of the sorts of matters the Commissions identified in their complementary oral submission as pertinent to the formulation of a new factor. The Council agreed there were significant issues to consider in formulating a factor, including whether malevolent environment and/or perceived threat were acting independently or in combination with each other and/or actual trauma; duration of exposure; and latency period before onset.

271. Further, whilst some of the sound medical-scientific evidence referred to a 'field placement' or 'war deployment effect' or to specific theatres, the Council considered it important that any factor had to be of general application, ie for all types of service, war zones and combat circumstances. Similarly, the Council considered that the formulation of any 'perceived threat' factor must

²⁴⁷ Transcript of complementary oral submissions at pages 16-17.

The Commissions identified the following studies.

- Brewin, CR et al. 2000 [Brewin, CR et al. 2000, 'Meta-analysis of risk factors for posttraumatic stress disorder in trauma-exposed adults', *Journal of Consulting & Clinical Psychology*, vol. 68, pp.748-766.]
- O'Toole, BI et al. 1998 [O'Toole, BI et al. 1998, 'Risk factors for posttraumatic stress disorder in Australian Vietnam veterans', *Australian & New Zealand Journal of Psychiatry*, vol. 32, pp. 21-31.]
- Green et al. 1990 [Green, BL et al. 1990, 'Risk factors for PTSD and other diagnoses in a general sample of Vietnam veterans', *American Journal of Psychiatry*, vol. 147, no. 6, pp. 729-733.]
- Koenen 2003 [Koenen, KC et al. 2003, 'Risk factors for course of posttraumatic stress disorder among Vietnam veterans: a 14-year follow-up of American legionnaires', *J Consult Clin Psychol*, vol. 71, no. 6, pp. 980-986.]
- Schnurr 2004 [Schnurr, PP et al. 2004, 'Risk factors for the development versus maintenance of posttraumatic stress disorder', *Journal of Traumatic Stress*, vol 17, pp. 85-95.]
- Solomon 1998 [Solomon, Z & Flum, H 1988, 'Life events, combat stress reaction and post-traumatic stress disorder', *Soc Sci Med*, vol. 26, no. 3, pp. 319-325.]

which the Commission submitted had some information about pre-service factors and factors that might contribute to vulnerability in experiencing a category [1A] stressor. The Commissions submitted that 'vulnerability factors' seemed more relevant when considering a lower level of stressor.

²⁴⁸ Transcript of complementary oral submissions at page 18.

²⁴⁹ Transcript of complementary oral submissions at page 18.

require that the perception be reasonable, and that there was objectively a real and imminent threat of physical harm to self or others. #For example, information from commanders about hazards and the need for the use of protective measures could found a reasonably based perception of harm as such information is only likely to be given following an assessment of a realistic risk.#

272. Despite the acknowledged difficulties, the Council remained firmly of the view that the sound medical-scientific evidence available to the RMA at the relevant times pointed to the relevant association. Accordingly, the Council considered it should do its best to formulate a factor which reflected its assessment of the sound medical-scientific evidence, and that it should direct the RMA to amend Statement of Principles No. 5 of 2008 to include a perceived threat/malevolent environment factor for each of clinical onset and clinical worsening.

273. However, as discussed, the Council was not persuaded that the sound medical-scientific evidence, taken overall, pointed to 'malevolent environment' as having an independent relevant association with service. Rather, the Council considered that the sound medical-scientific evidence pointed to an inter-relationship between the environment and a perception of threat. While the Council did not wish to be unduly prescriptive, it considered it necessary that the draft factor should reflect the need for this inter-relationship. Further, the Council considered that the sound medical -scientific evidence pointed to an environment broadly described as threatening, hostile, hazardous and/or menacing.²⁵⁰

Procedural fairness

274. By letters dated 12 September 2013, the Council provided the Applicant and the Commissions with an opportunity to comment by close of business on 25 October 2013, on the wording of proposed new factors to be inserted into paragraph 6 of Statement of Principles No. 5 of 2008.

275. The proposed new factors were:

Having a perception that harm may be caused to the integrity of the self or others arising from exposure to what a reasonable person in the circumstances would consider to be a threatening, hostile, hazardous and/or menacing environment before the clinical onset of post-traumatic stress disorder.

Having a perception that harm may be caused to the integrity of the self or others arising from exposure to what a reasonable person in the circumstances would consider to be a threatening, hostile, hazardous and/or menacing environment before the clinical worsening of post-traumatic stress disorder.

²⁵⁰ The Council considered its view was consistent with Dr O'Toole's submission made on behalf of the Applicant, i.e. that it was exposure to a 'malevolent environment' where there was a threat of harm which was important, see [43(d)], [45] and [55].

Council's reasoning behind the initially proposed factors

276. In formulating its proposed factors, the Council:

- (a) considered that the existing factors which incorporated the definitions of category 1A and category 1B stressors were problematic, as they could inadvertently omit or exclude some exposures. Hence the Council considered it preferable to direct the insertion of a proposed factor of general application, rather than one seeking to specify individual circumstances. It nevertheless considered a proposed factor incorporating perceived threat was consistent with the diagnostic criterion in clause 3(b)A(i) of the Statements of Principles.²⁵¹
- (b) relied particularly upon the studies listed in [264] and as summarised above. Specifically, the Council considered it important that the proposed factors accommodate the following features:
 - that notwithstanding some differences of emphasis in the studies which pointed to the relevant association, taken overall, the sound medical-scientific evidence available to the RMA at the relevant times was broadly consistent in concluding that exposure to a traumatic event is not a necessary precondition for PTSD.
 - While there is some uncertainty as to the precise mechanism, the Council considered that there was an inter-relationship between what the Council considered should be described as a threatening, hostile, hazardous and/or menacing environment and perception of threat, and that both have the relevant association with service (see King et al 1995 and 1999; Keane et al 1998; Ikin et al 2004; Fontana & Rosenheck 1999, O'Toole 1999).
 - the Council was not persuaded that malevolent environment alone and in the terms described by King et al (see for example the 1995 paper) had the relevant association with service in the absence of a perception of threat. Rather, the Council was more persuaded by Fontana and Rosenheck 1999 in this regard, and also the findings in Litz et al 1997 and Ikin et al 2004.

²⁵¹ In so doing, the Council noted the Commissions' submission as set out in the final paragraph of paragraph [61].

277. The Council did find persuasive the findings of:

- (a) King et al 1995 that:
 - perceived threat had a direct effect and was a component of, and/or contributory to, traditional combat experience and thus exposure to actual threat and/or trauma;
 - 'malevolent environment'²⁵² had both direct effects and indirect effects through perceived threat;
- (b) The further analysis of the NVVRS data by King et al (1999) which brought in –pre- and post war effects and found that perceived threat contributed to PTSD directly in women and men and malevolent environment directly in men though the relationship was 'modest.' (The Council did not consider that different findings for women were of biological aetiology – but rather an artefact of the different situations in which the women were placed). These results supported the view however, that there was a multifactorial aetiology to PTSD, and indicated to the Council that perceived threat and 'malevolent' environment were inter-related, which developed the Council's view of a factor which should integrate both the low level traumatic situation and the perception of threat.
- (c) Keane et al (1998):
 - that all four factors examined (including perceived threat and malevolent environment) contributed to current PTSD;
 - the definitions used which distinguished between malevolent environment and perception of threat aspects of the exposures noting a residual doubt as to whether malevolent environment had only a potential exacerbating effect to the impact of a given traumatic event (see too the Council's analysis of Fontana and Rosenheck et al 1999);

²⁵² The articles to which the Council refers in this paragraph generally use 'malevolent environment' in the sense described by King et al. However, the Council, while accepting the relevant association pointed to by those studies, preferred the description of the environment as 'threatening, hostile, hazardous and/or menacing.'

- (d) O'Toole et al 1998 that the particularly high risk of developing PTSD which was found among the corps of engineers was not accounted for by combat exposure alone - (realistic) fear was associated with a much higher risk than actual combat, leading to the conclusion that threat and perception of threat/harm were key elements and interconnected with the situation leading to the PTSD. It was not the occurrence of a specific traumatic event, and:
- individual reactions to malevolent environment and perception of harm are inherently subjective.
 - in order to be operational, there must be an objective element (a 'reasonableness') to the perception of harm being engendered by the actual circumstances.
- (e) Fontana & Rosenheck (1999) who further characterised the malevolent environment in terms of physical conditions and insufficiency of the environment, and further characterised the concepts of perceptions of threat; finding that harsh physical conditions (as in the 'shortages and constraints that are a function of those conditions and the fighting in which soldiers engage') had the strongest direct effect on PTSD outcome, and that perceived threat had an indirect effect through the pathway of 'insufficiencies'.
- (f) Ikin et al (2004):
- data from questions indicating:
 - fear of entrapment below the waterline on ships, fear of death, threat of biological or chemical attack, exposure to the death or suffering of others, feelings of helplessness and lack of control, poor preparation, malevolent environment, lack of support and lack of unit cohesion.
 - the dose-response found for a high score in the survey instrument, and the fact that:
 - Australian Gulf War deployment involved few direct military attacks and resulted in no deaths and few casualties [indicated that] commonly reported stressors related to the threat of combat, fear associated with its uncertainty (particularly the risk of chemical or biological agent attack) and the isolation and discomfort of deployment.
- (g) Litz et al (1997) who found that:
- the negative aspects of peacekeeping was one of the best predictors of PTSD symptom severity; and
 - low magnitude stressors (related to the malevolence of the environment in Somalia) were significantly related to PTSD symptom severity.

278. These principal findings from the sound medical-scientific evidence which the Council considered pointed to the relevant association informed the Council's strong view that fear and the perception of threat and/harm were inter-related with the elements of the situation and/or the environment.

279. A situation and/or environment that is threatening, hostile, hazardous and/or menacing, as described in the salient studies above, would result in varying individual perceptions of threat, each equally real. For this reason the Council wished to encompass in the proposed factor both the environment or situation and the perception, provided that the perception was one which a reasonable person would have had in those circumstances.

Applicant's comments

280. By letter dated 15 October 2013 the Applicant wrote to the Council and said it had:

no objections to the proposed amendments.

Commissions' comments

281. By letter dated 21 October 2013 the Commissions wrote to the Council advising that they did not take issue with the aspect of the proposed factors that:

cover a situation where an individual was in a war-like environment and reasonably perceived that there was a threat to their own integrity, but where no specific acute traumatic events had taken place.

282. However, the Commissions commented that the proposed factors did not require:

the individual with the PTSD to have been in the threatening, hostile, hazardous and/or menacing environment; or

the individual with the PTSD to have had any particular relationship with "others" that were in such an environment.

283. The Commissions submitted that:

This could be interpreted to mean that a person could be deployed to an operational area but in a non-threatening, non-hostile, non-hazardous and/or non-menacing environment.

They could learn through a variety of means of other people who were in a threatening, hostile, hazardous and/or menacing environment. They could perceive that harm could be caused to the integrity of those people. Those people could be unknown to the relevant individual. For example, the person could learn from watching television, of events unfolding in another country, to strangers, and yet they could satisfy the requirements of the factors as proposed.²⁵³

284. The Commission queried whether this was the intention of the Council.

285. The Commissions suggested that the Council consider:

... having onset and worsening factors concerning an individual in the prescribed environment and definitions within the factors to outline the required level of the perceived threat. Further, the Commissions suggest that the Council should give consideration to having separate factors for "others" in such an environment, or also in the same environment, if warranted.

Council's consideration of the Commissions' comments

286. The Council took into account the Commissions' comments.

287. The Council did not intend that the person having a perception of harm to the integrity of the self had to be in a situation which was required to be (somehow) objectively established as threatening, hostile, hazardous and/or menacing. However, the Council had intended that the person having a perception of harm to the integrity of the self had to be in a situation that they considered, and a reasonable person in their situation would also have considered, was a threatening, hostile, hazardous and/or menacing environment. Accordingly, the Council amended its proposed factor to require (in effect) that the individual must be in an environment that they reasonably considered to be threatening, hostile, hazardous and/or menacing.

288. The Council agreed with the Commissions that it was preferable to have separate factors for perception of harm to the integrity of the self and to others. The Council considered the sound medical-scientific evidence in support of a perception of threat and/or harm to others was not as readily able to be captured in an operational factor as that in support of a perception of threat and/or harm to the integrity of the self. However, the Council did not

²⁵³ The Commissions had submitted in the hearing of complementary oral submissions (see page 20 of the transcript) that:

...you [the person] need to physically, personally directly experience the environment.
... "threatening or hazardous or menacing" could be any military non-combat environment...it could be the Defence Force Academy... It could be driving to work, it could be riding your bike...you need to express it in a way that clearly reflects what you mean it to say.
...other considerations there are whether you can introduce some sort of dose, whether it's duration, exposure or some sort of severity description.
...also consider whether there is a temporal link requirement...

intend that a person could learn from watching television of events unfolding in another country to strangers, and yet satisfy the requisite association with service.

289. After taking the Commissions' comments into account, the Council considered there were two elements of perception of threat and/or harm to others. The first was a perception of threat and/or harm to the integrity of a significant other as that term is defined in paragraph 9 of each of Statements of Principles Nos. 5 and 6 of 2008 (as a person who has a close family bond or a close personal relationship and is important or influential in one's life). The second was a perception of threat and/or harm to others in the same situation as the person concerned whom the person concerned knew, or with whom the person concerned came into direct or indirect contact as a result of that person's service duties and responsibilities. This cohort of 'others' could comprise colleagues, for example, fellow combatants, civilians, support staff, medical staff etc, but also a civilian population as was the situation (inter-clan violence) considered in the article by Litz et al (1997).
290. The Council did not agree with the Commissions' suggestion that there should be an attempt to define the required level of the perceived threat. The Council considered that the sound medical-scientific evidence did not provide a basis for setting such a level. Given the Council's characterisation of the environment as threatening, hostile, hazardous and/or menacing, the Council considered it possible that a single exposure could be sufficient to give rise to a reasonable perception of threat and/or harm, and therefore declined to attempt to define further the level and duration of exposure. For the same reason (including as it did the Council's rejection of 'malevolent environment' as defined by King et al), the Council did not accept the Applicant's contention that chronic exposure was necessary, although the Council accepted that the sound medical-scientific evidence indicated that for some individuals chronic or multiple exposures could increase the risk of a reasonable perception of threat and/or harm.²⁵⁴
291. Further, the Council considered having a qualifier such as 'a *strong* perception of threat and /or harm,' but considered it ill-advised. It seemed to the Council that raised difficulties of a similar nature to those which had arisen in the application in clinical practice of diagnostic criterion A2 in DSM - IV-TR (paragraph 3(b)(A)(ii) of the Statements of Principles). The Council considered this particularly likely to be the case in military service, where service personnel are trained to suppress fear.
292. The Council's strong view was that a perception of threat and/or harm arising from exposure to an environment reasonably considered (ie actually considered by the person concerned and would be so considered by a reasonable person in the circumstances) to be threatening, hostile, hazardous and/or menacing was sufficient.

²⁵⁴ And see the Applicant's submission in paragraph [45].

Council's final formulation of factors

293. After careful consideration of the Commissions' comments, and bearing in mind that the Applicant, as the Council understood it, had been content with the proposed factors as initially drafted, the Council decided that its proposed factors should be amended. The Council thus directed the RMA to include the following factors in Statement of Principles No. 5 or 2008 for each of clinical onset and clinical worsening:

(a) Having a perception of threat and/or harm to the integrity of the self as a consequence of being in what:

- (i) the individual concerned; and
- (ii) a reasonable person in the circumstances of that individual would have;

considered to be any or all of a threatening, hostile, hazardous and/or menacing situation and/or environment.

(b) Having a perception of threat and/or harm to the integrity of:

- (i) a significant other; and/or
- (ii) other persons known to the individual or with whom the individual concerned has had contact in the discharge of that individual's duties and/or responsibilities;

as a consequence of the individual concerned and the persons in (i) and/or (ii) being in the same or similar circumstances as the individual concerned which:

- (iii) the individual concerned; and
- (iv) a reasonable person in the circumstances of that individual would have;

considered to be any or all of a threatening, hostile, hazardous and/or menacing situation and/or environment but excluding a perception engendered from viewing or listening to mass media (unless such viewing or listening is part of that individual's duties and/or responsibilities).

NEW INFORMATION

294. From the outset of this review the Council was aware that the 5th edition of the American Psychological Association's Diagnostic and Statistical Manual (known as DSM-5) was in course of preparation. As mentioned above, DSM-5 was published in May 2013.

295. In the Council's view, DSM-5 reflects a quantum shift in the diagnostic criteria of PTSD. The DSM-5 includes under 'Diagnostic Features' '**exposure to war as a combatant or civilian...**' in the list of directly experienced traumatic events in Criterion A.

296. The Council noted too that the Applicant referred to a sizeable body of new information in this review. Neither DSM-5 nor any other new information could be (nor was) taken into account for the purposes of this review. However, the Council considered it very important that as soon as is reasonably possible the RMA review Statements of Principles Nos. 5 and 6 of 2008 in their entirety.
297. Accordingly, in addition to its direction to the RMA to amend Statement of Principles No. 5 of 2008, by inserting in paragraph 6 thereof new factors in the terms set out above, the Council remitted both Statements of Principles Nos. 5 and 6 of 2008 to the RMA and directed the RMA to conduct a new investigation as soon as reasonably practicable, taking into account whatever new information has become available since both Statements of Principles were determined in 2008, including but not limited to DSM-5, in addition to the information that was available when Statements of Principles Nos. 5 and 6 were determined.
298. The Council noted that on 21 August 2013, the RMA gazetted a full investigation of Statements of Principles Nos. 5 and 6 of 2008 in respect of Posttraumatic Stress Disorder and death from Posttraumatic Stress Disorder. The Council assumed that the RMA will amalgamate or otherwise incorporate that gazetted investigation and the new investigation as directed by the Council.

DECISION

299. The Council made the declarations summarised in **paragraphs 1, 2 and 3** above.

ENDNOTES FROM THE APPLICANT'S WRITTEN SUBMISSION [SEE FOOTNOTES 27 AND 28]

Dr O'Toole noted:

This disorder has been recognised as occurring since time immemorial, albeit with different names and descriptions, from Homer's *Odyssey*, to Samuel Pepys' description of his own symptoms during the Great Fire of London, to Shakespeare's *Hamlet*. Scientific writing from the American Civil War, the Boer War, and World War I...described disordered action of the heart and shellshock. In the modern era, the disorder has been described in veterans of World War II ... of Korea... of Vietnam... of the Persian Gulf War... and the recent conflicts in Iraq and Afghanistan... (at page 1).

Dr O'Toole referred to the following documents in his submission, in respect of posttraumatic stress disorder being recognised 'since time immemorial':

The following information was not available to the RMA at the relevant times, and so could only be considered by the Council as 'new information'.

Miller, E ed. 1940, *The Neuroses in War*, MacMillan & Co., London.

Trimble, MR 1985, 'Post Traumatic Stress Disorder: History of a concept', in Figley, CR ed. *Trauma and Its Wake. The Study and Treatment of Post Traumatic Stress Disorder*, New York, Brunner / Mazel.

Hyams, KC et al. 1996, 'War syndromes and their evaluation from the US Civil War to the Persian Gulf War', *Annals of Internal Medicine*, vol. 125, pp. 398-405.

Jones, E & Wessely, S 2001, 'Psychiatric battle casualties: an intra- and interwar comparison', *British Journal of Psychiatry*, vol. 178, pp. 242-247

In the modern era, the disorder has been described in veterans of:

World War II:

Lee, KA et al. 1995, 'A 50-year prospective study of the psychological sequelae of World War II combat', *American Journal of Psychiatry*, vol. 152, pp. 516-522. RMA ID 9677

Elder, GH et al. 1997, 'Linking combat and physical health: the legacy of World War II in men's lives', *American Journal of Psychiatry*, vol. 154, pp. 330-336. RMA ID 9626

Hunt, N & Robbins, I 2001, 'The long term consequences of war: The experience of World War II', *Aging Mental Health*, vol. 5, pp. 183-190.

Schnurr, PP & Spiro, A 1999, 'Combat exposure, posttraumatic stress disorder symptoms, and health behaviours as predictors of self-reported physical health in older veterans', *Journal of Nervous and Mental Disease*, vol. 187, pp. 353-359.

The above information was not available to the RMA at the relevant times, and so could only be considered by the Council as new information.

Korea:

Ikin, JF et al. 2007, 'Anxiety, post-traumatic stress disorder and depression in Korean War veterans 50 years after the war', *British Journal of Psychiatry*, vol. 198, pp. 475-483.

This information was not available to the RMA at the relevant times, and so could only be considered by the Council as new information.

Vietnam:

Kulka, RA et al. 1990, *Trauma and the Vietnam Generation. Report of Findings from the National Vietnam Veterans Readjustment Study*, vol. I, New York, Brunner / Mazel.

Kulka, RA, et al. 1990, *The National Vietnam Veterans Readjustment Study, vol. II, Tables of Findings and Technical Appendices*, New York, Brunner / Mazel.

O'Toole, BI et al. 1999, 'Combat, dissociation, and posttraumatic stress disorder in Australian Vietnam veterans', *Journal of Traumatic Stress*, vol. 12, pp. 625-640.

The above information was not available to the RMA at the relevant times, and so could only be considered by the Council as new information.

O'Toole, BI et al. 1996, 'The Australian Vietnam Veterans Health Study III, Psychological health of Australian Vietnam veterans and its relationship to combat', *International Journal of Epidemiology*, vol. 25, pp. 331-340. RMA ID 3039

O'Toole, BI et al. 1998, 'Risk factors for posttraumatic stress disorder in Australian Vietnam veterans', *Australian & New Zealand Journal of Psychiatry*, vol. 32, pp. 21-31. RMA ID 13902

O'Toole, BI et al. 1998, 'Posttraumatic stress disorder and comorbidity in Australian Vietnam veterans: risk factors, chronicity and combat', *Australian & New Zealand Journal of Psychiatry*, vol. 32, pp. 32-42. RMA ID 13901

Persian Gulf:

Baker, DG et al. 1997, 'Relationship between posttraumatic stress disorder and self-reported physical symptoms in Persian Gulf War veterans', *Archives of Internal Medicine* vol. 157, pp. 2076-2078.

Toomey, R et al. 2007, 'Mental health of US Gulf War veterans 10 years after the war', *British Journal of Psychiatry*, vol. 190, pp. 385-393.

The above information was not available to the RMA at the relevant times, and so could only be considered by the Council as new information.

Ikin, JF et al. 2004, 'War-related psychological stressors and risk of psychological disorders in Australian veterans of the 1991 Gulf War', *British Journal of Psychiatry*, vol. 185, pp. 116 – 126.

One of the authors of the Ikin, JF et al. 2004 article, McFarlane, AC is a member of the Council for this review.

Ismail, K et al. 2002, 'The mental health of UK Gulf war veterans: Phase 2 of a two-phase cohort study', *British Medical Journal*, vol. 325, pp. 525-576.

Orcutt, HK et al. 2004, 'The course of PTSD symptoms among Gulf War veterans: A growth mixture modeling approach', *Journal of Traumatic Stress*, vol. 17, pp. 195-202. RMA ID 32466

Iraq and Afghanistan:

Hoge, CW et al. 2004, 'Combat duty in Iraq and Afghanistan, mental health problems and barriers to care', *New England Journal of Medicine*, vol. 351, pp. 13-22. RMA ID 31561

References cited by Dr O'Toole in support of the disorder persisting into old age.

For World war II veterans:

Hamilton, JD & Workman, RH 1998, 'Persistence of combat-related posttraumatic stress symptoms for 75 years', *Journal of Traumatic Stress*, vol. 11, pp. 763-768.

This information was not available to the RMA at the relevant times, and so could only be considered by the Council as new information.

For Korean veterans:

Ikin, JF et al. 2007, 'Anxiety, post-traumatic stress disorder and depression in Korean War veterans 50 years after the war', *British Journal of Psychiatry*, vol. 198, pp. 475-483.

This information was not available to the RMA at the relevant times, and so could only be considered by the Council as new information.

Vietnam veterans:

O'Toole, BI. [In PRESS, accepted 5 May] 2009, 'The physical and mental health of Australian Vietnam veterans three decades after the war and its relation to military service, combat and PTSD', *American Journal of Epidemiology*.

This information was not available to the RMA at the relevant times, and so could only be considered by the Council as new information.

EVIDENCE BEFORE THE COUNCIL

Appendix A	<p>Preliminary list of the proposed pool of information, as advised to the Applicant and Commissions by letters dated 2 September 2011 (see paragraph 34 of the Reasons), and the final pool of information (see paragraph 82 of the Reasons).</p> <p>This list also identifies the information upon which the Council understands the Applicant and the Commissions respectively relied (being information which the RMA advised was available to (before) the RMA at the relevant times and which the RMA sent to the Council in accordance with section 196K of the VEA).</p>
Appendix B	Information available to (before) the RMA and sent to the Council by the RMA under section 196K of the VEA by Fileforce (see [22]).
Appendix C	The information to which the Applicant referred (being information which was not available to (not before) the RMA, and so was not considered by the Council in reaching its decision)