

WOULD THE FORMATION OF A COMBAT MANEUVER CORPS SUPPORT THE
TRANSFORMATION OF THE AUSTRALIAN ARMY AS ENVISAGED IN THE
HARDENED AND NETWORKED ARMY CONCEPT?

A thesis presented to the Faculty of the U.S. Army
Command and General Staff College in partial
fulfillment of the requirements for the
degree

MASTER OF MILITARY ART AND SCIENCE
General Studies

by

JAMIE MCDONALD, MAJOR, AUSTRALIAN REGULAR ARMY,
ROYAL AUSTRALIAN ARMOURED CORPS
B.A., University of New South Wales, Canberra,
Australian Capital Territory, Australia, 1992

Fort Leavenworth, Kansas
2006

Approved for public release; distribution is unlimited.

Report Documentation Page

Form Approved
OMB No. 0704-0188

Public reporting burden for the collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to a penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.

1. REPORT DATE 16 JUN 2006	2. REPORT TYPE	3. DATES COVERED	
4. TITLE AND SUBTITLE Would the formation of a Combat Maneuver Corps support the transformation of the Australian Army as envisaged in the hardened and networked army concept?		5a. CONTRACT NUMBER	
		5b. GRANT NUMBER	
		5c. PROGRAM ELEMENT NUMBER	
6. AUTHOR(S) Jamie McDonald		5d. PROJECT NUMBER	
		5e. TASK NUMBER	
		5f. WORK UNIT NUMBER	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) US Army Command and General Staff College, 1 Reynolds Ave., Fort Leavenworth, KS, 66027-1352		8. PERFORMING ORGANIZATION REPORT NUMBER ATZL-SWD-GD	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)		10. SPONSOR/MONITOR'S ACRONYM(S)	
		11. SPONSOR/MONITOR'S REPORT NUMBER(S)	
12. DISTRIBUTION/AVAILABILITY STATEMENT Approved for public release; distribution unlimited.			
13. SUPPLEMENTARY NOTES The original document contains color images.			
14. ABSTRACT One of the greatest impediments to the hardening and networking of the Australian Army has been entrenched Corps-based tribalism. The focus on Corps superiority has led to a mind-set that does not readily accept the necessity for a combined arms and joint approach to future warfare. Two traditional rivals, the Royal Australian Armored Corps (RAAC) and the Royal Australian Infantry Corps (RAINF) have complementary maneuver capabilities, but, at an intellectual level, they have always been separated by institutional mistrust. Under the precepts of Hardening and Networking the Army (Leahy 2004, 27), the Australian Army aims to produce a more lethal, better protected and fully integrated Army. The complementary capabilities of the RAAC and RAINF could be further enhanced by their integration into a single Combat Maneuver Corps to support the Hardening and Networking of the Army concept. A Combat Maneuver Corps would facilitate the development of truly combined arms units that are organized and trained in garrison as they would be employed on operations.			
15. SUBJECT TERMS			
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT
a. REPORT unclassified	b. ABSTRACT unclassified	c. THIS PAGE unclassified	1
			18. NUMBER OF PAGES 87
			19a. NAME OF RESPONSIBLE PERSON

MASTER OF MILITARY ART AND SCIENCE

THESIS APPROVAL PAGE

Name of Candidate: Major Jamie McDonald, Royal Australian Armoured Corps

Thesis Title: Would the Formation of a Combat Maneuver Corps Support the Transformation of the Australian Army as Envisaged in the Hardened and Networked Army Concept?

Approved by:

_____, Thesis Committee Chair
Tony R. Mullis, Ph.D.

_____, Member
LTC Peter A. Gibson, M.B.A.

_____, Member
Mr. Charles D. Vance, M.A.

Accepted this 16th day of June 2006 by:

_____, Director, Graduate Degree Programs
Robert F. Baumann, Ph.D.

The opinions and conclusions expressed herein are those of the student author and do not necessarily represent the views of the U.S. Army Command and General Staff College or any other governmental agency. (References to this study should include the foregoing statement.)

ABSTRACT

WOULD THE FORMATION OF A COMBAT MANEUVER CORPS SUPPORT THE TRANSFORMATION OF THE AUSTRALIAN ARMY AS ENVISAGED IN THE HARDENED AND NETWORKED ARMY CONCEPT? by Major Jamie McDonald, 78 pages.

One of the greatest impediments to the hardening and networking of the Australian Army has been entrenched Corps-based tribalism. The focus on Corps superiority has led to a mind-set that does not readily accept the necessity for a combined arms and joint approach to future warfare. Two traditional rivals, the Royal Australian Armored Corps (RAAC) and the Royal Australian Infantry Corps (RAINF) have complementary maneuver capabilities, but, at an intellectual level, they have always been separated by institutional mistrust. Under the precepts of *Hardening and Networking the Army* (Leahy 2004, 27), the Australian Army aims to produce a more lethal, better protected and fully integrated Army. The complementary capabilities of the RAAC and RAINF could be further enhanced by their integration into a single Combat Maneuver Corps to support the Hardening and Networking of the Army concept. A Combat Maneuver Corps would facilitate the development of truly combined arms units that are organized and trained in garrison as they would be employed on operations.

ACKNOWLEDGMENTS

While all faculty and staff members at the Command and General Staff College and from the Combined Arms Research Library have provided invaluable assistance in the research, preparation and formatting of this thesis, several members have been of particular assistance.

First and foremost my thesis committee has provided detailed professional guidance throughout the completion of this study. I am indebted to Dr. Tony Mullis who as my Chairman was instrumental in ensuring that I met the required deadlines, and whose observations on style and US vernacular ensured a polished work. LTC Pete Gibson as first reader and my Staff Group Advisor provided mentorship, advice, and a practical perspective while completing this study. Finally Dave Vance was instrumental in editing my Australian writing style to best suit a US audience.

Lastly I must thank my wife Cynthia, who at various times has been employed as a research assistant, editor, and at the end of the study, new mother, which allowed me the time and space to complete this thesis. Without her I would not be able to complete any such undertaking.

TABLE OF CONTENTS

	Page
MASTER OF MILITARY ART AND SCIENCE THESIS APPROVAL PAGE	ii
ABSTRACT.....	iii
ACKNOWLEDGMENTS	iv
ACRONYMS.....	vii
ILLUSTRATIONS	ix
CHAPTER 1. INTRODUCTION	1
Thesis Research Question.....	7
Secondary Research Questions	7
Assumptions.....	8
Definition of Terms.....	8
Limitations	9
Delimitations.....	9
Significance of the Study	10
CHAPTER 2. LITERATURE REVIEW	11
Historical Employment of RAAC and RAINF.....	11
Australian Doctrine and Emerging Doctrinal Concepts	14
US Army Transformation and Modularity Concepts.....	18
CHAPTER 3. RESEARCH METHODOLOGY	22
CHAPTER 4. ANALYSIS.....	26
Chapter Introduction	26
Purpose of Research.....	26
The Australian Way of War--An Historical Analysis.....	27
Boer War and First World War Experience.....	28
Development of Armor during the Interwar Period.....	33
Employment of Armor during the Second World War.....	35
The Korean War, 1950-1953	39
Australian Operations in South Vietnam	41
Peace Keeping and Peace Enforcement Operations	43
Current Operations – Afghanistan and Iraq	46
The Hardened and Networked Army – The Australian Army’s Transformation.....	49

Australian Strategic Guidance – A Paradigm Shift	50
The Hardened and Networked Army Concept.....	52
Armored and Infantry Integration for the Future Combined Arms Teams.....	54
The United States Army and Transformation.....	57
Elements of Defense Transformation	58
Modularity:US Army Transformation?	59
Conclusion	63
 CHAPTER 5. CONCLUSIONS AND RECOMMENDATIONS	 65
Conclusion	65
Combat Maneuver Corps: Individual Training.....	65
Combat Maneuver Corps Units	67
Mounted and Dismounted Trade Structure.....	69
Recommendations.....	71
 REFERENCE LIST	 73
 INITIAL DISTRIBUTION LIST	 75
 CERTIFICATION FOR MMAS DISTRIBUTION STATEMENT	 77

ACRONYMS

ADF	Australian Defence Force
AMTG	Al Muthanna Task Group - Iraq
APC	Armored Personnel Carrier
AS	Australia
ASLAV	Australian Light Armored Vehicle
BCT	Brigade Combat Team (US)
BDE	Brigade (AS)
CASAC	Chief of Army Senior Advisory Committee
COTS	Commercial off of the Shelf
DGDP	Directorate of Graduate Degree Programs
EBO	Effects Based Operations
GDP	Graduate Degree Programs
CA	Chief of the Army (AS)
CDF	Chief of the Defence Force (AS)
DOD	Department of Defense (US)
GWOT	Global War on Terror
FCS	Future Combat System
FM	Field Manual (US)
HBCT	Heavy Brigade Combat Team
HNA	The Hardened and Networked Army Concept
IBCT	Infantry Brigade Combat Team
INTERFET	International Force–East Timor
LWD	Land Warfare Doctrine (AS)

MCO	Major Combat Operations
MGS	Mobile Gun System
MLW	Methods of Land Warfare
MOLE	Maneuver Operations in the Littoral Environment
MOS	Military Occupational Specialty
NATO	North Atlantic Treaty Organization
RAAC	Royal Australian Armored Corps
RAINF	Royal Australian Infantry Corps
RAR	Royal Australian Regiment
RMA	Revolution in Military Affairs
SBCT	Stryker Brigade Combat Team
SNCO	Senior Noncommissioned Officer
UNTAET	United Nations Transitional Administration–East Timor
US	United States

ILLUSTRATIONS

	Page
Figure 1. Dismounted Trade Structure.....	68
Figure 2. Mounted Trade Structure	70
Figure 3. Dismounted Trade Structure	71

CHAPTER 1

INTRODUCTION

One of the greatest impediments to the hardening and networking of the Australian Army has been entrenched Corps-based tribalism. The focus on Corps superiority has led to a mind-set that does not readily accept the necessity for a combined arms and joint approach to future warfare. Two traditional rivals, the Royal Australian Armored Corps (RAAC) and the Royal Australian Infantry Corps (RAINF) have complementary maneuver capabilities, but, at an intellectual level, they have always been separated by institutional mistrust. Under the precepts of *Hardening and Networking the Army* (Leahy 2004, 27), the Australian Army aims to produce a more lethal, better protected, and fully integrated Army. The complementary capabilities of the RAAC and RAINF could be further enhanced by their integration into a single Combat Maneuver Corps. A Combat Maneuver Corps would facilitate the development of truly combined arms units that are organized and trained in garrison, as they would be employed on operations.

At present, those capabilities that can actually conduct close combat are contained within the various units that are manned by soldiers and officers from both the RAAC and RAINF. However, the present Corps specialist trade structure is neither cost effective nor efficient, as many trade specializations within the two Corps are too small to be maintained effectively. Clear examples of this inefficiency are the high turnover of M113 Armored Personnel Crewmen within the Mechanized Battalion, the 5th/7th Royal Australian Regiment and the inability of the cavalry regiments to effectively train or man

the Cavalry Scouts. Junior officer and senior noncommissioned officer (SNCO) education and training does not encourage either an understanding of the differences or similarities between the mounted and dismounted capabilities within the two Corps. In addition, the Directorate of Officer Career Management and the Soldier Career Management Agency do not allow cross-pollination between armored and infantry units at the command or any other level.

The Chief of Army's direction for the Hardened and Networked Army emphasizes several interrelated principles. The first is the move from a light infantry to a light armored force. This is a radical change to the Australian Army that has always been optimized for infantry battalion operations. The second principle is to create more units that are alike in both structure and equipment. This will facilitate the rotation of units deployed for operations. The third principle is to create a force that is optimized for close combat based upon combined arms teams with greater protection, mobility, and firepower. The last principle is to provide a network-enabled force that can reach back to joint assets for situational awareness and firepower to overwhelm an enemy on the battlefield (Leahy 2004, 27).

In developing maneuver units to meet the Chief of Army's direction, the Army could remove much of the present tribal mentality of the RAAC and RAINF by joining the two historical Corps as a single Combat Maneuver Corps containing both mounted and dismounted trade specialties. This combined Corps would be responsible for ground-based combat maneuver, while facilitating the development of a generation of commanders and soldiers who would truly embrace the combined arms approach in theory and practice. This reorganization would also develop efficiencies that meet the

Chief of Army's directions on Hardening and Networking the Army, while meeting many of the personnel issues arising from the manning of legacy equipment within the Hardened and Networked Army structure.

The idea of combining RAAC and RAINF is not a revolutionary concept when considering the Australian military experience. Throughout the Australian Army's relatively short but rich military history, the Army has blended mounted and dismounted soldiers in common units to achieve the required effect based on an assessment of the enemy force's capabilities and the constraints of the operating environment. By better understanding Australian military history, or the Australian way of fighting wars, the idea of creating a Combat Maneuver Corps is not a revolutionary proposal.

The development of the modern RAAC and RAINF is grounded in the common military experiences of the light horse regiments and mounted infantry at the beginning of the twentieth century. The proud history of the Light Horse Regiments in the Middle East during the First World War is based upon the deeds of the various mounted infantry units that represented the embryonic Australian nation in the Boer War before becoming an independent nation at Federation. The British High Command highly regarded the Australian soldier's ability to live off of the land in the pursuit of an unconventional enemy in southern Africa (Grey 1990, 58). However, these soldiers still fought predominantly in a dismounted role once they had established contact with the enemy.

This *modus operandi* continued to be used in the First World War by the Australian Light Horse in the Sinai and Palestine, where they utilized horses to achieve mobility on the battlefield, but actually did the majority of their fighting as dismounted soldiers. Australian soldiers were equipped with the rifle and bayonet and rarely with the

saber. The fact that the soldiers were equipped with rifles and bayonets differentiated them from the British Cavalry units who still carried sabers to allow the cavalymen to fight from the mounted position on their horses. In summary, from the Australian Army's humble beginnings, the Australian soldier has trained and fought using a combination of mounted and dismounted skills.

The introduction of industrial era weapons and the wholesale slaughter at the Western front during the First World War ended the utility of the light horse and mounted infantry units. Toward the end of the First World War and in the intervening years before the Second World War, the light horse units slowly began converting to armored vehicles to provide protection and mobility to maneuver units. The development of armor in Australia differed from that of the European nations, as it was designed to support the infantry soldier either with mobile fire support or armored mobility. The development of armored forces as separate maneuver units to operate independently in a shock role occurred initially in Europe and later in the United States of America (USA). This was first demonstrated by the German blitzkrieg operations of 1939 and 1940. While many armies began to embrace combined arms operations by the end of the war, the unique situation facing Australian forces while fighting the Japanese in the jungles of Southeast Asia forced infantry and tank integration to the section and individual tank level, or the first micro teams.

This Australian style of armored and infantry support found its roots with the 7th Division Australian Imperial Forces during the North African Campaign, but matured in the jungles of New Guinea, Bougainville, and Borneo. During these campaigns, Matilda

tanks and Bren Machine Gun Carriers provided outstanding support to the infantry soldiers to defeat Japanese forces in extremely complex terrain (Hopkins 1978, 138).

Mutual support between armored and infantry forces was again successfully demonstrated by the 1st Australian Task Force in the Phuc Tuy province of South Vietnam, where both the Centurion tank and ubiquitous M113 Armored Personnel Carriers provided outstanding and integral support to the Royal Australian Regiment Infantry Battalions. During these campaigns, Australian casualties were minimized by deploying mixed units down to the smallest micro teams to defeat the enemy (McKay and Nicholas 2001, 184-186).

Since Vietnam, the grouping of non-doctrinal Armored and Infantry units has been conducted for mission-specific purposes, from the Intervention Force--East Timor (INTERFET) to the current Security Detachment (SECDET) and Al Muthana Task Force operations as part of Operation Catalyst (Operation Iraqi Freedom) in Iraq. These operations have required an increasingly high degree of dismounted skills for the RAAC soldiers to integrate within the RAINF-commanded organizations. This phenomenon has also been demonstrated by the US Army, when the 1st (US) Armored Division dismounted armored units to provide additional infantry manpower for security operations in Iraq. This phenomenon is likely to continue. This will require not only a greater degree of interoperability between the infantry and armored soldiers at the lowest levels, but an increase in the dismounted training and skills of the armored vehicle crewman.

The Australian Army is just one of many modern Armies that have recognized the requirement to transform legacy structures, equipment and doctrine to better face the

continually evolving contemporary operating environment. The “Transformation” of the United States military and, in particular, the United States Army provides a useful study to compare with the Australian Army’s HNA goals.

While the physical size of the United States Army is exponentially larger than that of the Australian Army, the doctrine and philosophical mind-set as to how to conduct warfare are extremely similar. The development of the Heavy Brigade Combat Team (HBCT), the Stryker Brigade Combat Team (SBCT), and Infantry Brigade Combat Team (IBCT) provides a comparative model for Australia to consider while planning for the future Hardened and Networked Army.

The US Army’s embrace of the concept of modularity demonstrates a shared vision between US and Australian force planners, who have recognized the requirement to combine armored and infantry capabilities at the lowest possible levels. The successful deployment of the Stryker Brigade Combat Team on combat operations against an asymmetric threat in northern Iraq shows the utility of this concept. The rapid fielding and deployment of this medium-weight armored capability, fully integrated within a dismounted infantry structure, demonstrates the utility of closely aligning the mounted and dismounted maneuver capability for full-spectrum operations. While the actual numbers of soldiers and officers in the respective Armor and Infantry branches of the United States may preclude the development of a Combat Maneuver Branch as suggested for Australia, the success of modularity and the formation of combined arms units down to battalion level demonstrates that the importance of the micro team concept between armor and infantry has been accepted by the US Army.

This chapter has introduced why there is a requirement for a Combat Maneuver Corps in the Australian Army to create a culture that embraces the Hardened and Networked Army. The development of this Combat Maneuver Corps could mitigate some of the perceived risk encountered in the Hardening and Networking the Army model. This integration of the fundamental capabilities for close combat, mounted, and dismounted specialists requires a command climate that embraces institutional change.

The understanding that future land warfare will continue to require close combat, utilizing combined arms teams at the lowest level supported by joint assets, fundamentally underpins the Hardening and Networking the Army concept. The integration of the RAAC and RAINF into a single Combat Maneuver Corps will provide the basis for a cultural and educational approach required for the successful formation of combined arms teams to fight and win on the future battlefield.

Thesis Research Question

Would the formation of a Combat Maneuver Corps support the transformation of the Australian Army as envisaged in the hardened and networked army concept?

Secondary Research Questions

1. Does the historical employment of the Australian Army and the style of warfare demonstrated by the Australian Army on past operations support the formation of a Combat Maneuver Corps?
2. What is the Hardened and Networked Army Concept, and how does it effect the future direction of the Australian Army?

3. Does the United States Army's process of transformation, and in particular the concept of modularity, provide lessons that can be adapted by the Australian Army, and do these lessons support the formation of a Combat Maneuver Corps?

4. What would be a suggested model and trade structure to support the formation of a Combat Maneuver Corps, and is it viable for the Australian Army?

Assumptions

1. That the Australian Government, through strategic guidance to the Australian Defense Force, will continue to pursue expeditionary warfare as a tenet of strategy to defeat threats abroad and not return to the previous continental defensive policy described by the *Defense of Australia Doctrine*.

2. That the Australian government and people continue to demand that Australian doctrine enshrines force protection and minimizes casualties from combat.

3. That the United States will continue to be Australia's primary defense partner.

Definition of Terms

The key terminology that will be utilized in this thesis will be based on the North Atlantic Treaty Organization (NATO) standard abbreviations as utilized by both the Australian and the United States militaries. Where terms or abbreviations are not NATO standard, they will be described in the first instance in the text of the thesis, but will also be summarized in the glossary. To avoid confusion, the United States spelling of the word "armor" will be utilized throughout this thesis, instead of the British-Australian spelling of "armour". Similarly, the spelling of the word "defense" will use the United States version and not the British-Australian version of "defence".

The key concept that underpins this thesis is that of the Hardened and Networked Army (HNA). This theory has been enunciated by the Chief of Army, Lieutenant General Peter Leahy, as his vision for the future of the Australian Army. It is supported by the Minister of Defense, who has “stated that he would accept recommendations from Army that would contribute to making the Army more sustainable and lethal in close combat” (Leahy 2004, 31).

Limitations

1. That this thesis will be written in an unclassified format and will only use open source documentation when discussing Australian and United States strategic aims, operational lessons, and force structures.

2. That access to the latest Australian force development doctrine is limited due to the research being conducted in the United States and not having access to Australian Army information technology systems.

3. That the researcher may display bias due to previous experience with the subject, but will provide credible evidence where available to support any assertions. Any perceived bias will be mitigated through the input of the Thesis Committee.

Delimitations

1. That this thesis not investigate economic cost comparisons between the present Corps system and the development of a Combat Maneuver Corps.

2. That this thesis not discuss the Australian Strategic guidance to the Defense Force and accepts that Expeditionary Coalition operations will be the norm during the foreseeable future.

3. That this thesis not discuss in detail the complex issue of network centric warfare and its impact upon the Hardened and Networked Army concept. The key concepts of network enabled warfare may be mentioned anecdotally when describing its impact upon the utility of the formation of a Combat Maneuver Corps.

Significance of the Study

The Australian Army has seen a resurgence of domestic political support, as it has provided the bulk of the combat forces for operational deployments since Australia's intervention on behalf of the United Nations in East Timor to the current operational support for the Global War on Terrorism in both Afghanistan and Iraq. To ensure the increased survivability and lethality of these forces, the Army has attempted to embrace the vision for a Hardened and Networked Army. By successfully demonstrating the utility for and validity of combining the Royal Australian Armored Corps and the Royal Australian Infantry Corps into a Combat Maneuver Corps, the ground force combatants would be better physically and mentally prepared for combined arms conflict on the present and future battlefields.

CHAPTER 2

LITERATURE REVIEW

There is a plethora of resources available to discuss the utility of developing a Combat Maneuver Corps within the Australian context. This chapter will outline the three main research areas that will be investigated to develop this thesis--literature discussing the lineage and employment of RAAC and RAINF on operations from the Boer War to Vietnam; Australian doctrine and emerging concept papers that describe the vision for the Hardened and Networked Army; and finally, doctrine, papers, and monographs that discuss the United States Army innovations supporting Transformation.

Historical Employment of RAAC and RAINF

Australian Army Post Operation Report, *3rd Brigade OPERATION WARDEN*, 2000. The aim of the Post Operation Report by 3rd Brigade of the Australian Regular Army was to record the deployment of the Brigade and attachments to East Timor as part of Operation Warden and to record observations for consideration. Of particular interest to this study was recognition of the challenges faced when integrating the ad hoc formation provided by C Squadron 2nd Cavalry Regiment from the 1st Brigade into the 3rd Brigade.

Bob Breen, *Mission Accomplished: East Timor*, 2000. Breen provides a detailed account of the people, plans, and events and events that surrounded the deployment of Australian troops to East Timor. Breen's account is conducted as an illustrated history to capture the essence of the operations conducted to support the East Timorese people through the violent period following their decision to seek independence from Indonesia.

Jeffrey Grey, *A Military History of Australia*, 1990. Grey provides a comprehensive assessment of Australia's military history in wartime and in peacetime. While the book examines Australian military involvement since the beginning of white settlement in 1788, it particularly concentrates on the Second World War and the Pacific campaign. Grey demonstrates the financial restraints of various governments responsible for military policy and how that has influenced the development of the military today.

Alfred N. Festberg, *Australian Army Lineage Book*, 1966. Festberg provides a concise historical outline and organization of Australian military forces from before Federation, through the First and Second World Wars, through to the early 1960s. Of particular interest is his historical outline of the establishment and organization of Australian Military Forces prior to and upon Federation.

Richard J. G. Hall, *The Australian Light Horse*, 1968. Hall investigates the history and lineage of the light horse units in Australia from Federation through to the transformation of the Australian light horse units to armored reconnaissance units during the interwar and Second World War years. The study describes the Royal Australian Armored Corps lineage from its historical Light Horse Regiment to 1968. The study does not, however, investigate why Australia maintained a limited number of horse mounted cavalry units until 1944, an area worthy of separate investigation. This book provides a story of Australia's mounted soldiers from 1840 to 1960.

Ian Jones, *The Australian Light Horse*, 1987. While Jones's investigation of the Mounted Infantry Units of the Light Horse commences with a discussion of the Australian Mounted Troops during the Boer War, his book concentrates on the Light Horse campaign in North Africa and the Middle East during the First World War. This

book provides a detailed description of the last successful cavalry charge, the attack at Beersheba on 31 October 1917. This mounted infantry attack succeeded, where early armor and dismounted infantry had failed.

Paul Handel, *Dust, Sand and Jungle: A History of Australian Armour during Training and Operations, 1927-1948*, 2003. Handel designed his book to recognize the experiences and heritage of armored veterans from the Second World War period and the continuing relevance of their experiences in a variety of theaters and operating environments for today's Armored Corps. The book details the variety of conditions encountered by Australian armor, from the dust of training areas in the Australian outback, to the sands of the Middle East, through to the jungles of Southeast Asia. The key lesson of the Australian experience was that when correctly employing armor "Operations were conducted more quickly and infantry casualties lessened" (Handel 2003, X).

Paul Handel, *Fifty Years of the Australian Armored Corps, 1948 to 1998*, 1998. Handel provides a concise study of the Royal Australian Armored Corps from the end of the Second World War to its current organizations and structures in 1998. The key issues that are described are the struggle for recognition of the importance of armor between the Second World War and the Vietnam War, the lessons learned from the use of armor in Vietnam, and the effects of these lessons learned upon today's force structure and doctrine.

Major General Ronald N. L. Hopkins, *Australian Armour: A History of the Royal Australian Armoured Corps, 1927-1972*, 1978. Major General Hopkins provides a firsthand explanation of the development of the Australian Armored Corps after the First

World War and its rapid expansion during the Second World War. It discusses how many former cavalry soldiers enlisted enthusiastically to serve in the Southwest Pacific area, where they gained high honor for their courage and skill. The study also investigates the utility of the tank forces deployed to support operations in South Vietnam, and the how they provided support for the infantry commanders.

Gary McKay and Graeme Nicholas, *Jungle Tracks: Australian Armour in Viet Nam*, 2001. The McKay and Nicholas study of how Australian cavalry and tanks operated in Vietnam stressed the importance of infantry and armored cooperation for the success of the Australian task force in the Phuoc Tuy province of Vietnam. Recognizing the importance of this cooperation was one of the aims of this book, and the authors state: “It is hoped the operational and tactical lessons learnt from the deployment of RAAC units to Viet Nam are understood by the current generation of defence planners, as they shape the Army beyond 2000” (McKay and Nicholas 2001, XX).

Nigel Clayton, *Australian Infantry*, 2005. Clayton provides an insight into the training and culture of the Australian Infantry, colloquially known as “grunts”. Through Clayton’s use of an anecdotal narration style, a picture of the mentality and motivation of Australian infantry soldiers can be observed. The chapter describing combined arms training with Leopard tanks from the 1st Armored Regiment provides a demonstration of the effectiveness of micro teams of infantry and tanks at the lowest level.

Australian Doctrine and Emerging Doctrinal Concepts

Lieutenant General Peter Leahy, “Towards the Hardened and Networked Army”, 2004. This Australian Army journal article articulates the central concepts of the Hardened and Networked Army and provides the Chief of Army’s vision for the future of

the Australian Army. The article is based on an address by the Chief of Army to the Defense Watch Seminar on 10 February 2004. This article places into context the challenges of the contemporary operating environment for Australia, Strategic Guidance for the Australian Defense Force provided in the 2003 Defense Capability Review, and finally, the background and tenets of the Hardened and Networked Army concept. The article concludes with Lieutenant General Leahy stating: “The leadership of the Army has a responsibility to its soldiers to ensure that they have the right equipment, force structure and doctrine to succeed in combat. The Hardening and Networking of the Army initiative is designed to facilitate that vital success” (Leahy 2004, 36).

Lieutenant General Peter Leahy, “A Land Force for the Future: The Australian Army in the 21st Century”, 2004. Lieutenant General Leahy addresses his view of the strategic role for the Australian Army within the contemporary operating environment in this article. He argues that despite uncertainty, the Australian Army must change or transform its force structure and doctrine, to cope with this uncertainty. Lieutenant General Leahy introduces several issues with this transformation that are equally applicable to the United States experience, namely the challenge of managing modernization while adapting to a changing strategic environment and simultaneously conducting combat operations.

Lieutenant Colonel Michael Krause, “Lest We Forget: Combined Arms Assault in Complex Terrain”, 2004. Krause argues the continuing importance of the synergy of combined arms in the assault, especially in complex terrain. This article argues that complex terrain, whether in the jungle or urban environment, requires the teaming of armor and infantry at the micro level. Krause’s concluding comments argue that the days

of great tank armies are past, but that the future for the tank as an integral component of the combined arms team will remain an enduring symbol of modern combat.

Colonel Michael Krause, “The Case for Minimum-Mass Tactics in the Australian Army”, 2004. Colonel Krause argues the benefits of minimum mass tactics. The crux of his argument is the requirement to review the Australian Army organizational structure to develop combined arms teams at the platoon and section levels that are able to leverage advantage from the potential combat enhancements of network-enabled warfare. Colonel Krause is faithful to the history of warfare, by arguing that there will always be the requirement for close combat that involves the employment of the combined arms team of armor and infantry. He concludes by arguing that the Australian Army needs to restructure from the bottom up based upon integrated all arms micro teams.

LWD-1, *The Fundamentals of Land Warfare*, 2002. This publication provides the Australian Army with its capstone doctrine to provide strategic direction for the development and utilization of land power. This document also provides direction for the Australian Army’s conduct of land operations in cooperation with the Navy and Air Force, as well as with friends and allies. LWD-1 describes the importance of the future employment of Australian forces in the littoral environment, reinforcing a joint and multinational focus.

LWD-3, *Manoeuvre Operations in the Littoral Environment*, 2003. This publication demonstrates that maneuver operations in the littoral environment are one of the Australian Army’s lead war-fighting concepts. It discusses how Australia’s immediate geographic region is characterized by its littoral nature. To operate in this environment requires a joint and often multinational approach. Recognition that future

operations conducted by the Australian Defense Force are likely to be within the littoral environment has focused the strategic vision for the Army's intellectual journey to Force 2020 or future combat force.

LWD 3-0, *Operations*, 2003. This publication explains how the Australian Army, using the maneuverist approach, applies military capability and describes the characteristics and issues required for successful military operations throughout the spectrum of conflict. This doctrine provides an outstanding link between Australia's strategic guidance and the concepts for the tactical deployment of the Australian Army.

LWD-3-0-2, *Battlegroup Tactics*, 2004 (emerging doctrine). This publication provides an overarching doctrine for the manner in which a battlegroup will plan and execute operations. It is designed for use by combat arms commanders and staffs in the employment of combined arms groupings on the battlefield. This doctrine is still emerging and has not yet been approved by the Chief of Army. Unfortunately, this manual will only codify in doctrine a concept that has been utilized by various armies, including the Australian Army, since the First World War. A fault of this publication is that it does not develop a truly combined arms mentality or approach, as the groupings for operations will always be on an ad hoc basis.

MLW 2-1-1 *Employment of Armour*, 1993. This document is out of date and does not discuss the true diversity of operations conducted by today's armored force. It does not discuss in any detail the concept of battlegrouping or the employment of combined infantry and armor micro teams. The document is in the process of being revised, with no confirmed date for the planned publication.

MLW 2-1-1 *The Infantry Battalion*, 1984. This doctrine is completely out of date, and does not recognize the diversity of roles, capabilities and employment of the infantry battalion within the contemporary operating environment. This document is more relevant for light infantry battalion operations from the Vietnam era than for the myriad of taskings for the infantry battalion today. This publication is also in the process of revision.

US Army Transformation and Modularity Concepts

Department of Defense, *Elements of Defense Transformation*, 2004. This Department of Defense (DOD) document provides strategic guidance for Transformation from the Secretary of Defense to the US Armed Forces. It states that there is a compelling need to transform not only the US Armed Forces, but the organizations and processes that control, support and sustain them. The need for this transformation is not only in response to the events of 11 September 2001, but also due to the effects of globalization on the international security order. The document defines transformation, provides a vision for the Defense establishment for transformation, and concludes by discussing how transformation will be implemented within the DOD. This document is the capstone strategic guidance for the implementation of Transformation policy.

Headquarters, Department of the Army, FM 1, *The Army*, 2005. FM 1 is one of the US Army's capstone doctrinal manuals and states what the Army is, what the Army does, how the Army does it, and where the Army is going. FM 1 describes the Army's role in Transformation to face the future operating environment challenges. It describes the Army's campaign objectives, including the ability to "Adapt and improve total Army

capabilities. Organize Army forces into modular, capabilities-based unit designs to enable rapid force packaging and deployment, and sustained land combat” (FM 1 2005, 4-5).

Headquarters, Department of the Army, FM 3-0, *Operations*, 2001. FM 3-0 establishes the Army’s keystone doctrine for full-spectrum operations. While the document discusses the Army’s requirement to provide global strategic responsiveness for sustained land force operations as a member of a joint or multinational force, due to its publication date it does not introduce the key concepts of Transformation. Because this document is being revised, it will not be discussed in any further detail in this thesis.

Headquarters, Department of the Army, *Army Comprehensive Guide to Modularity Version One*, 2004. This publication describes why and how the US Army is changing its fighting concepts, organizations, training, and operations. It provides the philosophical and physical framework for Transformation and the concept of modularity for the US Army. It summarizes the reasons required for a change to the legacy formations and describes the general nature of the changes that the Army will undergo in the next two decades. While this document is less than two years old, significant changes have occurred that effect the underlying concepts of Transformation. The concept of the UEx and UEy replacing division and corps level headquarters was recently removed from doctrine by the Army Chief of Staff. However, the Modular Brigade Combat Teams, which form the Brigade Combat Team (BCT) and their conceptual, organizational, training and operational requirements are still central to the US Army’s plan for Transformation.

Headquarters, Department of the Army, FMI 3-91, *Division Operations*, 2005. The interim division operations manual was released in June 2005. This was before the

lessons learned from current divisional deployments, utilizing modular BCT combat components, could be integrated into a final version of the field manual. This manual discusses modular division operations, which are designed to exercise command and control of up to six maneuver brigades and supporting brigades and battalions. “Modular division units will be rapidly deployable, responsive, agile, and tailored for land force combat power” (FMI 3-91 2004, IV). The field manual discusses modular division fundamentals--command and control systems, the plan, prepare, execute and assess process, and a hypothetical example of how a division will conduct full spectrum operations in a major combat operation.

Headquarters, Department of the Army, FM 3-90.3, *The Mounted Brigade Combat Team*, 2001. This field manual addresses the tactical employment and operation of the divisional Mounted Brigade Combat Team (BCT). It describes the operational and tactical employment for the Mounted BCT supporting the Army’s Transformation and Modularity concepts. The manual is insightful. It states: “Tactical fundamentals do not change with the fielding of new equipment; however, the integration of new equipment and organizations may require changes in related techniques and procedures” (FM 3-90.3 2001, V). The heavy brigade remains the Army’s principal formation for conducting sustained combined arms and close combat operations in the land environment.

Headquarters, Department of the Army, FM 3-21.31, *The Stryker Brigade Combat Team*, 2003. “The Stryker brigade combat team (SBCT) is designed to be a full spectrum, early entry combat force. It has utility in all operational environments against all projected future threats. It possesses significant utility for divisions and corps engaged in a major-theater war; however, the SBCT is optimized to meet the challenges of

smaller-scale contingencies” (FM 3-21.31 2003, XI). This field manual describes how the SBCT is designed to balance lethality, mobility, and survivability against the requirements for rapid strategic deployability. The manual further discusses how the SBCT is designed with certain inherent mounted and dismounted capabilities that provide it with a robust combat capability.

Douglas A. Macgregor, *Breaking the Phalanx: A New Design for Landpower in the 21st Century*, 1997. Macgregor proposes a reorganization of US land forces to best suit the changed operational environment since the end of the Cold War. He argues that the US Army must take control of its future by embracing certain elements of the so-called Revolution of Military Affairs (RMA), to best posture itself for future contingencies. This approach is based upon smaller, more agile forces that are networked to joint and coalition capabilities. Macgregor envisages that these elements will be smaller than currently fielded divisions. Macgregor suggests that without this reorganization, the US Army will become as irrelevant as the Greek Phalanx when faced by the smaller more nimble Roman Legions.

Douglas A. Macgregor, *Transformation Under Fire: Revolutionizing How America Fights*, 2003. In this second installment of Macgregor’s view of transformation, he critiques the current US Army transformational objectives. He is particularly critical of the reliance upon unproven technology such as the Future Combat System (FCS). He also suggests that the current US Army branch system is no longer relevant for an information-age Army, and that it should be modified to reflect the functional groupings envisaged in the transformed modular Army.

CHAPTER 3

RESEARCH METHODOLOGY

The methodology employed to research the utility of creating a Combat Maneuver Corps will be conducted in four key stages. The first stage consists of a study of how the Australian Army has been employed in an operational capacity since the Boer War to current operations in Iraq and Afghanistan and whether this history demonstrates a clear pattern of employment for the RAAC and RAINF. The second stage defines the current and emerging Australian doctrine that supports the Hardened and Networked Army concepts and how an increasingly synergistic RAAC and RAINF would support these concepts. The third stage contrasts the Australian theories with emerging concepts for Transformation of the United States Army, with an emphasis on the issue of modularity. The final stage examines a potential model for the integration of RAAC and RAINF as a single combat maneuver Corps. This would increase the combined arms capability of the Australian Army to support the HNA concept.

The historical examination of the Australian Army demonstrates that the development of RAAC and RAINF prior to and during the First World War led to a blurring of mounted and dismounted combat experiences. Possibly as a result of similar training, equipping and employment of these forces, it was often difficult to ascertain whether these early forces were mounted infantry or cavalry forces. As with much of the Western world, the development of armored forces in the interwar period in Australia was problematic, as the nation struggled with whether to maintain a citizen army or develop a fully professional force.

The Australian Armored Corps achieved rapid expansion during the Second World War. However, the armored forces were always integrated in support of the Infantry at the lowest levels to create a combined arms effect, whether fighting Rommel in the deserts of North Africa or fighting Ho Chi Minh in the jungles of Southeast Asia. This tradition of using armor to save infantry lives, especially in the assault, was continued in Vietnam. While other forces argued that tanks were an impediment when fighting in the jungle, Australian infantry commanders often stated that the prosecution of successful attacks against a defending enemy was best achieved by the integration of armor and infantry at the lowest level. Today in Iraq and Afghanistan Australian Infantry and Special Forces have integrated armored mobility and firepower into their task forces to achieve force protection and increased lethality on the battlefield.

This examination of Australian military history demonstrates that RAAC and RAINF share a common heritage in both lineage and employment. It also demonstrates that the use of combined armored and infantry forces at the micro-level is not a new phenomena, and that many lives have been saved by this method of warfare. In fact, this fusion of armor and infantry capabilities could be described as the basis of the Australian way of conducting war. This concept provides the linkage to the next part of the thesis by discussing the current direction of Australian doctrine.

The second part of the thesis describes current Australian doctrine and how the Army is structured to fight. It then discusses the Hardened and Networked Army concepts as championed by the Chief of Army, Lieutenant General Leahy. The Hardened and Networked Army concept provides the Australian Army with an opportunity to fully investigate its organization, training, and structure as Australia enters the twenty-first

century. This section will also investigate other leading edge Australian war-fighting concepts, such as the use of minimum mass tactics and joint combined arms micro-teams in the assault. Finally it describes the implications of these concepts on future force structure, and on how an integrated armored and infantry Corps could benefit their development and acceptance by the Australian Army.

The third stage of the thesis contrasts the Hardened and Networked Army concept with the United States concepts for transformation. It investigates the philosophy behind modularity and the development of the Brigade Combat Team capability. It argues that the philosophy of integrating mechanized infantry and tanks within the HBCT Battalions and the development of Stryker Battalions are examples of integration of armor and infantry at the lowest level. In fact, the development of the Stryker Battalions may indicate the nature of future organizations, where mounted and dismounted capabilities become increasingly entwined.

The final stage of the paper examines a potential model for the integration of RAAC and RAINF. It looks at the effects of these changes on the present Military Occupational Specialties (MOS) within the two Corps and how they effect the Training Command organizations that prepares these forces for employment. This chapter conducts a limited assessment of the effects across the spectrum of Doctrine, Organization Structure, Training, Material, Leadership and Education, Personnel and Facilities (DOTMLPF).

The thesis concludes with a summary of the first four chapters and answers the question of whether the formation of a Combat Maneuver Corps supports the concepts underpinning the Chief of Army's Hardened and Networked Army policy. It also

provides recommendations on how a Combat Maneuver Corps could be integrated into the current Australian Army organizational structure. It also summarizes the second and third order effects of incorporating a Combat Maneuver Corps, including the historical naming conventions of the Australian Army's Infantry and Armored units.

CHAPTER 4

ANALYSIS

Chapter Introduction

This thesis investigates the utility of creating a Combat Maneuver Corps by first assessing how the Australian army has conducted combat throughout its history. It then investigates the current Australian doctrine on the employment of the armored and infantry combined arms team and the affect of emerging concepts such as the Hardening and Networking of the Australian Army upon these teams. Finally, it compares the emerging Australian doctrine to the development of doctrine and organizations to support the US Army's ongoing process of Transformation. In particular, it investigates modularity, and identifies US concepts and ideas that may support the formation of an Australian Combat Maneuver Corps. By analyzing these three areas, the thesis will have investigated historical, doctrinal, and emerging Australian and United States future force concepts to determine whether the formation of a Combat Maneuver Corps will best serve the requirements of the future Australian Army as articulated in the HNA concept.

Purpose of Research

The Australian Army has seen a resurgence of political support following the successful deployment of forces on behalf of the United Nations in East Timor, as well as the current operational deployments supporting the Global War on Terrorism in both Afghanistan and Iraq. To ensure the increased survivability and lethality of these forces, the Army has attempted to embrace the vision for a Hardened and Networked Army. By successfully demonstrating the utility for and validity of combining the Royal Australian

Armored Corps and the Royal Australian Infantry Corps into a Combat Maneuver Corps, the ground force combatants would be better structured and mentally prepared for combined arms conflict on the present and future battlefields.

The Australian Way of War--An Historical Analysis

The employment of Australian land forces since the Boer War has demonstrated a uniquely Australian approach to the conduct of land warfare. The Australian approach to warfare has historically been based upon an integration of originally horse-mounted and later armored forces and dismounted infantry soldiers. These combined mounted and dismounted groups have often operated as micro-teams to generate an ad hoc combined arms effect. What has traditionally been lacking is the cultural acceptance of these groupings as the basis of the Australian Army's combat capability. The Australian Army's organizational structure and doctrine demonstrates this shortfall. This reluctance to permanently group mounted and dismounted capabilities is in part due to the inherent competition between the RAAC and RAINF.

To demonstrate that the Australian way of war has predominantly used combined mounted and dismounted capabilities, this section analyzes the Australian Army's operational history. It begins with the employment of mounted and dismounted infantry during the Boer War and the First World War. It then discusses the development of the RAAC during the inter-war period and its employment in North Africa and the South Pacific during the Second World War. The Australian experiences in the Korean and Vietnam Wars where the successful employment of micro-teams of infantry and tanks minimized Australian casualties during operations in complex terrain follows. The last section provides a short summary of subsequent Australian Army operations, including

ongoing operations supporting the Global War on Terror in Afghanistan and Iraq. Finally, a summary of some of the characteristics of the Australian way of war are linked to current and emerging Australian doctrinal guidance for the employment of maneuver assets.

Boer War and First World War Experience

The outbreak of hostilities in South Africa in 1899 between the British and the South African Afrikaners had a profound effect upon the emerging military forces of Australia. Prior to the Boer War, which preceded Australian Federation by a year, Australia's defense relied upon a state--or colony--based defense system. The state governments recruited volunteers, making minimum payments for uniforms and equipment. Unfortunately, there was little uniformity amongst the militias, with state governments relying on the forces of the British Empire for the external defense of Australia.

Australia spontaneously offered to provide colonial troops to support the British War in South Africa if Britain footed the costs of maintaining those forces. The British Colonial Office made a formal request for forces from Australia, which "For reasons which mystify still, the stipulation was for infantry units, not mounted ones, although after the war it was stated that the term 'infantry' had been held to include 'mounted infantry' and in any case, within months of arrival the colonial foot were turned into mounted rifles" (Grey 1990, 56). Before the deployment of Australia's first expeditionary military operation, the debate as to whether the force should be mounted or dismounted commenced.

The British Army employed Australian forces extensively throughout the Boer War campaigns, with Australia deploying 16,175 combatants and 16,314 horses during the three years of the declared war (Hall 1968, 24). Australia set exacting standards for these first truly Australian soldiers, with the published standards described in *State Gazettes* as “Men to be good shots and proficient swordsmen, of superior physique not under 5 foot 6 inches or 34 inches chest; good riders and bushmen, accustomed to finding their way about in a strange country” (Hall 1968, 26).

It was during this conflict that the Australians earned their initial reputation as willing and enthusiastic soldiers. Many senior British leaders recognized the capability provided by these ‘bushmen’ mounted infantry, and looked to these capabilities in the deserts of the Middle East during the First World War. “A young major of the Inniskillians named Allenby commanded a group of NSW [New South Wales] Lancers and spoke highly of their operations. He was to speak out again, fifteen years later, in Syria” (Hall 1968, 24). The Australian enthusiasm for engaging in Imperial wars would continue as the slowly maturing independent Australia sought to continue to share the costs, as well as the benefits, of remaining within the British Empire.

Australia was physically isolated from the events that led to the commencement of the Great War. Australians did, however, follow the gathering crisis in Europe in their daily newspapers. Australian politicians and the public fully supported the British homeland, with the leader of the Opposition Labor Party, Andrew Fisher, stating that Australia would back Britain to the “last man and last shilling” (Grey 1990, 87). The Australian community displayed near unanimity in supporting Britain. The first contingent of the Australian Imperial Force (AIF) was recruited and deployed in less than

six weeks. The medical standards for service at this stage of the war were very demanding, with men being rejected merely for having fillings in their teeth. Even with these exacting standards, the Australian Government recruited a division of three infantry brigades and a light horse brigade as the first AIF contingent in less than a month.

It was initially intended that Australian and New Zealand forces would proceed to England for training before employment on the Western Front. Due to congestion on the Salisbury Plains in England and a perceived threat against the Suez Canal by Turkey, the two forces instead disembarked in Egypt. These forces were then formed into a single corps, the Australian and New Zealand Army Corps, or ANZACs as they have become euphemistically known. This period in Egypt was useful. It allowed the Australian units and formations to conduct standard British pre-war training. Unfortunately, many of the costly lessons being learned by the allies on the Western Front in Europe had not yet reached the forces in Egypt.

Meanwhile, Winston Churchill vigorously pursued a new campaign in Gallipoli, otherwise known as the Dardanelles campaign. Its strategic intent was to knock Turkey out of the war and bring the Balkan states into the war on the side of the allies in order to open a new front against Austria-Hungary. After two attempts by the Royal Navy to force the Dardanelles narrows failed, the British abandoned the naval course of action in favor of a land operation to secure the Gallipoli peninsula. The British military leadership committed the ANZAC Corps, less the Light Horse Brigade, to the amphibious operation on 25 April 1915. By 1 May 1915, less than a week after the landing, disaster after disaster had confronted the force and immediate reinforcements were required. The only available reinforcements in significant numbers in the theater were the Light Horse

regiments still in Egypt. “Despite the value of the Light Horse in the defence of Egypt, the enthusiasm for the brigades to fight, even if without their beloved horses, finally influenced Sir Ian Hamilton to employ the Light Horse in a dismounted role” (Hall 1968,41).

Again, the Australian Light Horse would fight in the dismounted role for which it was not primarily trained. “We went to South Africa as infantry, and they mounted us. Now we come to North Africa as Light Horsemen, and they bundle us off as infantry” (Jones 1987, 17). This comment by a Light Horseman about to leave Egypt for Gallipoli in May 1915 accurately depicted the dual nature of employment for the Light Horse during the First World War.

The planning and execution of the evacuation by sea during the nights of 19-20 December 1915, in which the force evacuated without the loss of a single life, was the best-planned operation of the entire Gallipoli campaign. This ended the first campaign of the war for Australia and New Zealand, who had through the blood and determination of their soldiers, confirmed their nationhood. The Australians and New Zealanders returned to Egypt to rest, retrain, and re-equip while awaiting further reinforcements from Australia. The 1st and newly raised 2nd ANZAC Corps left for France and the Western Front on 13 March 1916. The ANZAC Mounted Division, later to become the basis of the Desert Mounted Corps, remained in the Middle East under the command of Major General Harry Chauvel, a former Brigade Commander from the Light Horse during the Gallipoli campaign. In the Middle East, in what others called a desert sideshow, the Light Horse revived the mounted traditions and respect that had been earned during the Boer War.

The AIF in the Middle East assisted in the security of the Sinai and Canal Zone until the end of 1916, before commencing offensive operations against the Turks in Palestine. “Chauvel was appointed to command the Desert Mounted Corps in June 1917, becoming the first Australian corps commander, although not of an Australian Corps, since the Desert Mounted Corps contained New Zealand, Indian and British Yeomanry regiments as well as Australian light horse” (Grey 1990, 116). Chauvel proved himself a daring commander, and with the support of outstanding mounted infantry drove the Turks from Palestine and pursued them into Syria and Lebanon, before Turkey sued for peace on 30 October 1918.

It could be argued that the capture of Beersheba by the Australian Light Horse on 31 October 1917 was the decisive point of the Palestine campaign.

The initial manoeuvres for the assault of the town having been made by Chauvel, it became apparent that the methodical progress shown hitherto would not result in the completion of the operation within the limits imposed by Allenby. A bold stroke was called for, so a direct mounted attack on the town was ordered and 4 ALH [Australian Light Horse] Brigade was called to perform this task...The first wave of horsemen rode over the trenches and galloped on to Beersheba itself. The subsequent waves dismounted and took the trenches at the point of the bayonet. Despite the hand to hand fighting in which the brigade was engaged at the trenches, only 64 casualties were sustained. (Hall 1968, 43)

In the last successful mounted charge of the modern war era, the Australian light horse soldiers relied as much on their dismounted fighting abilities as the mounted skills that achieved the breakthrough.

This cursory examination of the Australian experience of warfare during the Boer and First World War demonstrated that the Australian soldier was often required to perform combat missions as either mounted or dismounted soldiers. Many of the skills needed for the conduct of these missions required similar training and experience. These

lessons learnt in battle were forgotten by the Australian Army during the inter-war period, when instead debate commenced as to whether Australia would follow the example of Europe and convert horse mounted units to armored fighting vehicles for future conflicts.

Development of Armor during the Interwar Period

The debate within the Australian government and military about the development of an Armored Corps mirrored the concerns of other militaries around the world. While Australia had some limited experience of operating with British tanks in the First World War on the Western Front, their utility for Australia's future military force was debatable. The major issues surrounding the development of an armored capability in Australia were the budgetary restraints applied to a smaller post-war Australian volunteer army and the future role for Australia's mounted troops, the Light Horse.

The discussion about forming a tank corps commenced as early as 22 January 1920, when the Government called a conference to recommend the size, composition and organization of the future Australian Military Forces. A pragmatic decision as to the purchase of armor was made.

The question of the employment of tanks, and the formation of a Tank Corps, is one which sooner or later must come up for practical consideration. Tanks have proved to be a highly effective reply to the tactical employment, in combination, of automatic small arms and wire entanglements. Tank design has, by no means, reached its full development; present types are likely in the course of time to be greatly improved, both in mechanism and armour, and armament. For these reasons, immediate action on this matter is not considered prudent. At the same time, the question of the organization of a Tank unit such as a Brigade should continue to be regarded as one requiring attention in the near future. (Hopkins 1978, 13)

In 1926, the Australian General Staff submitted a proposal to train an Australian tank instructor in the United Kingdom and to purchase British medium tanks. The next step would be to form the Australian Tank Corps to train instructors and provide training for Permanent and Citizen Force troops for the collective employment of armor. To equip the Australian Tank Corps, “Four Vickers Medium Mark II Special tanks were purchased together with an amount of running spares at a cost of £72,000” (Handel 2003, 2). Experimentation also commenced on the utility of locally-produced armored cars, with the establishment of an Armored Car Regiment planned by the Army Staff in 1931 (Handel, 11).

The development of Australian armor continued to suffer during the mid-1930s due to the financial effect of the global economic depression. The state of Australian armor at the outbreak of the Second World War was dismal, as the armored force only consisted of two light tank companies, each with a complement of five tanks, and two armored car regiments, one with only three vehicles and the other with four (Handel 2003, 14). The lack of personnel trained on armored vehicles, with the majority being volunteer part-time soldiers and a handful of Permanent Force instructors, exacerbated this situation. Along with the rest of the world, Australia was cognizant of the lessons of “blitzkrieg” on the European continent, and that the Second World War would be a mechanized conflict. The rapid expansion and employment of Australian combined arms mechanized teams for employment in combat was a tribute to the handful of armored specialists who supported Australian armor during the interwar period.

Employment of Armor during the Second World War

The employment of Australian armor during the Second World War involved two separate branches. The first was the use of the Divisional Reconnaissance Regiments, later designated as Divisional Cavalry Regiments, which were organic to an Infantry Division. The Australian Army designed these rapidly raised armored units to conduct reconnaissance, surveillance and early warning for an Infantry Division, and drew heavily from experienced horse mounted cavalry. The second was the development of the Australian Armored Corps, coupled with the raising of the 1st Australian Armored Division, and the later conversion of all remaining horse mounted cavalry formations to motor regiments. The experiences and employment of these two branches demonstrated the difference in mindset regarding the integration of combined arms to achieve an effect upon the enemy.

At the outset of the war, each of the 6th, 7th, 8th and 9th Divisions of the Second Australian Imperial Force contained a Divisional Reconnaissance Regiment. Following the formation of these regiments, training commenced in Australia using the British Vickers Mark VIA Light Tanks and the Australian Machine Gun Carrier. The Australian government deployed the 8th Australian Division to the jungles of Malaya to assist with the defense of Singapore from possible Japanese aggression. The Commander of this Division chose not to deploy his Cavalry Regiment to the jungle environment. The lack of integral armor to the 8th Australian Division placed it at a disadvantage to the Japanese forces, which, supported by light armor, decisively routed the division. The government next deployed the 6th, 7th and 9th Division Cavalry Regiments to the Middle East, where they utilized both captured Italian and British equipment. “These regiments

fought in the Middle East with a variety of equipment ranging from British and Australian-built Machine Gun Carriers, Vickers Light Tanks Mk VIB to British Crusaders and Stuart Light Tanks” (Handel 2003, 15).

The Australian Divisional Cavalry Regiments served with distinction throughout the North African/Middle Eastern Campaign. Australian units served in Egypt and Libya, Palestine and Syria and for a period in Cyprus. Throughout the period they functioned as a traditional cavalry formation, screening the infantry units. As such, there were few examples of close support between the various arms. Poor equipment contributed to the cavalry’s inability to better support the infantry. “The principal lesson of the campaign is one that constantly returns. The cavalry light tanks encountered solid opposition from French medium tanks. The 7th Australian Division had nothing to counter these and no real way of giving support and helping its forward elements to get on with the job” (Hopkins 1978, 86). During the first Australian campaign of the war, Australian armor was unable to provide the requisite support necessary for the infantry-based divisions.

The conversion of the Divisional Cavalry Regiments to dismounted Cavalry Commando units, in order to further apply their skills at reconnaissance and independent operations in the Southwest Pacific area, occurred by the end of 1943. Many of the experienced officers and non-commissioned officers from the former Division Cavalry Regiments transferred to the Australian Armored Corps (Hopkins 1978, 108). The operational experience of these men proved invaluable upon employment of the Australian Armored in an infantry support role in the Southwest Pacific Theater.

While the divisional cavalry regiments formed for the conduct of reconnaissance and screening operations for the 2nd Australian Imperial Force, the existing Australian

Tank Corps, Armored Car Regiments and former light horse regiments that were converting to machine-gun or motor regiments had not yet been consolidated under any unified command. The Australian Armored Corps formed officially on 9 July 1941 under the tutelage of one of the few armor-trained senior officers of the Australian Army, Lieutenant Colonel Hopkins. The Australian Armored Corps would raise the 1st Australian Armored Division from the various former armored and mounted units and develop the infrastructure and training system to support it. As a testament to Hopkins' organizational skills, by November 1942 the Australian Armored Corps had expanded to three armored divisions (Hopkins 1978, 104).

The combined armored and infantry operations broke the deadlock that had developed in the jungles of New Guinea and demonstrated the first example of the micro-team concept of combining tanks and infantry at the lowest possible tactical level. The initial attacks using these tactics were unsuccessful due to unsuitable equipment. The first employment of open-topped machine-gun carriers failed dismally. Japanese snipers engaging from treetop level created heavy casualties among the armored crewman. Soon after the failure of the machine-gun carriers, the commitment of M3 light tanks from the Australian Armored Corps also proved ineffective in the infantry support role. These tanks had extreme difficulties with maintaining visibility in close terrain, and, successful results were achieved only due to the bravery of the crews, who were often dismounted leading the tanks through the jungle. However, the infantry lives saved by the armored forces when committed to the assault justified the difficulties encountered. These actions resulted in the replacement of the M3 light tank with the more heavily armored Matilda Tank (Hopkins 1978, Ch 12).

The lessons of early jungle operations resulted in closer coordination between the tanks and infantry when the Matilda tanks were employed. “No hard and fast rules were laid down but new techniques and tactics were developed by Major Hordern, the squadron leader, to suit the conditions. One plan adopted was the organization of a tactical group to be used whenever an infantry advance in heavy jungle was being supported by tanks. This consisted of a troop of tanks, a company of infantry and a platoon of engineers; they practiced working together in various formations and reached a high standard of co-operation” (Hopkins 1978, 132). This tactical innovation demonstrated a wartime improvisation that acknowledged the requirement for the employment of armor and infantry as teams at the lowest level to succeed in the jungle environment.

The employment of these new combined tactics proved to be extremely effective during the battles for Finschhafen and Sattelberg on the northeast coast of New Guinea, where infantry casualties were reduced when operating with the tanks. This was highlighted by the commander of the 4th Australian Armored Brigade, when he recognized the importance of the tanks during these actions. He stated,

You have proved that the New Guinea terrain is no longer a tank proof locality... You have proved that there is a much wider scope for the use of tanks in jungle country than was ever anticipated and for that, your comrades in the Australian Armoured Corps are indeed grateful.

It is beyond doubt that you saved the infantry many casualties whilst without question you hastened the expulsion of the enemy from the Finshhafen-Sattelberg area thence north along the coast. (Handel 2003, 77)

Subsequent operations in New Guinea, Bougainville, Borneo and Brunei validated the wisdom of employing combined armored and infantry teams during the assault.

Australia continued to develop modifications and specialized tanks to better support the

infantry in the close terrain of the jungle environment encountered in the Southwest Pacific Theater.

The Australian Army's experience with the use of armor during the Second World War provided key lessons for the future. While the divisional cavalry regiments performed missions in North Africa and the Middle East, they were not integrated with the infantry units at the lowest levels to support the tactical fights. The experience of the 8th Australian Division in Malaya also demonstrated that armored units should be deployed regardless of the perceived difficulty of terrain and vegetation. However, the most important lesson of the Second World War for the Army was the value of combined armored and infantry units at the micro level for reducing casualties and increasing the tempo of operations. Unfortunately, this lesson was forgotten in subsequent conflicts fought by Australia.

The Korean War, 1950-1953

The Korean War demonstrated the requirement for Australia to maintain modern and serviceable armored vehicles during peacetime to support deployed combat forces. Similar to the situation that existed prior to the Second World War, the Australian Army failed to invest in armored vehicles. It possessed only Second World War vintage Churchill tanks at the commencement of hostilities in Korea. The 3rd Battalion Royal Australian Regiment deployed immediately to Korea from the British Commonwealth Occupation Force (Grey 1990, 203). It formed the nucleus of what would become an Australian Brigade-sized deployment as part of the British Commonwealth Division. This battalion, although many of its members were veterans of Second World War infantry battalions, had neither training nor experience with armored units.

Due to the poor state of armored preparedness, the Australian infantry forces often relied upon British and United States armored forces to support tactical actions. The Australian Armored Corps community fought vigorously, but unsuccessfully, to raise and deploy an Australian armored unit to provide the required armored support to the Australian infantry forces. These efforts were unsuccessful due to a lack of modern tank equipment available in Australia.

The Canadian Army provided an example of a better integrated combat force within the Commonwealth Division. “When the 2nd Battalion Princess Patricia’s Canadian Light Infantry joined the force it was accompanied by a tank squadron of the Canadian Armoured Corps from Lord Strathcona’s Horse. It seems unnecessary to comment further on the Australian Government’s equipment policy which had left the country entirely destitute of operational tanks to meet this sudden emergency” (Hopkins 1978, 192).

The requirement for Australian forces to request armored assistance from United States Sherman or British Centurion tanks for combat missions demonstrated the requirement for Australian combined arms armored and infantry teams to be continually equipped, grouped and trained together during peacetime. The importance of these teams for minimizing infantry casualties and increasing operational tempo and lethality that had been demonstrated in combat during the Southwest Pacific Campaign of the Second World War had been forgotten in a little less than five years.

Australian Operations in South Vietnam

The Australian Army commitment to the Republic of Vietnam began in 1962, when Australia dispatched a team of military advisors to form the nucleus of the Australian Army Training Team-Vietnam as part of the US advisory system. On 10 December 1964, the South Vietnamese Prime Minister Tran Van Huong requested an increase of Australia's military commitment. In June 1965, Australia announced the deployment of an Australian infantry battalion to be attached to a US brigade. This commitment was eventually increased to a Task Force of two battalions and supporting arms in mid-1966, and then to three battalions in January 1968. Its mission was to operate in an independent area of operations in the Phuoc Tuy province of Southern Vietnam. The Australian force withdrew from Vietnam in December 1971 (Grey 1990, 232-239).

The Australian Government's decision to increase its force commitment to Vietnam in 1965 with an Australian infantry battalion led to the requirement for mobility, firepower, protection and communications support, a role originally conducted by Australian Cavalry units utilizing the M113 Armored Personnel Carrier. These armored vehicles were an early model. The crew manning a machine gun on the deck of the carrier had no protection. While these Cavalry units were originally designed to provide protected mobility for the infantry soldier to maneuver to the point of contact, they were used in a variety of infantry support roles for which they were poorly suited. "Prior to the decision to send a squadron of tanks, there had been a number of significant battles where the APC was misused in an offensive tank role" (McKay and Nicholas 2001, 80). The first squadron of Australian tanks deployed to Vietnam in early 1968, almost three years after the deployment of the first infantry battalion.

After initial skepticism as to the capabilities and reliability of the British-made Centurion tank in the jungle environment, the infantry came to rely upon the tank's firepower and protection during decisive engagements. Much of this skepticism was due to the fact that many of the infantrymen had never personally seen tanks, let alone trained with them before fighting in Vietnam. The value of the tank and infantry cooperation was most obvious during bunker clearing operations. The infantry soon came to appreciate the decisive advantage of the combined arms team in the assault.

The rifle sections were crawling forward and clearing about 5 or 10 metres in front of the tanks, which would then drive slowly forward and come just past the men lying on the jungle floor. The Centurion would then engage any bunkers they could see and hit them with high explosive shell and machine gun fire. The golden rule was not to get forward of the second road wheel as the 84mm main armament blast would severely injure the infantrymen hugging the ground when they fired. If the tanks couldn't see anything to their front they let rip with a canister round to clear the vegetation. (McKay and Nicholas 2001, 188)

In 1971, Australia began to withdraw troops from Vietnam. While the decision was made to redeploy the Centurion tanks to Australia, the infantry battalions of the Task Force continued to be employed on offensive operations. The Australian infantry soldiers who continued to fight without armored support criticized this decision. In the words of one Australian soldier who lost five compatriots during a battle at Nui Le on 21 September 1971,

I think the Army itself should have got a kick in the arse over that one. They pulled out our armoured support while they left troops in the field and I think that was nonsense. I think had we had armoured support that day the result would have been one hell of a lot better. You know when you are in a fight without armoured support that puts the advantage very, very greatly in their [the enemy] favour. Trying to flush someone out of a bunker system in the jungle without armoured support is an extremely difficult thing. The army should never, ever withdrawn the armour before they pulled us out of the bush—we wouldn't have lost the same amount of blokes killed as we did and I think we would have got a lot more of them. (McKay and Nicholas 2001, 194)

While Australian military planners immediately identified the requirement for armored support for the infantry in Vietnam, they failed to appreciate the different armored vehicle capabilities required to conduct truly combined arms operations. While the Cavalry units equipped with the M113 Armored Personnel Carrier provided outstanding mobility and protection for the infantry, they were poorly suited to provide offensive support in close combat with the enemy. The deployment of the Centurion tank three years after the initial infantry battalion deployment provided the much-needed heavy armored support for future infantry battles, particularly those against bunker style defensive positions. Once deployed, the tank proved to be highly versatile in both jungle and urban environments, especially when integrated at the lowest levels to support individual platoons and sections. Those important lessons of micro-team support between the infantry and armored units that had been forged during the Second World War were relearned during combat in the jungles of South Vietnam.

Peace Keeping and Peace Enforcement Operations

While the Australian Army was not involved in any large scale conventional conflicts after its withdrawal from Vietnam in 1971 until its current operations supporting the United States Global War on Terror, many individuals and units were deployed on Peace Keeping and Peace Enforcement missions throughout the world. The two most significant of these was the deployment in December 1992 of a battalion group to Somalia, and the deployment of the Australian-led International Force–East Timor (INTERFET) in September 1999.

The deployment of a Battalion group of about 900 personnel, the majority from the First Battalion Royal Australian Regiment (1 RAR) to Baidoa, Somalia, provides an

example of the judicious use of the combined arms teams for peace support operations. Demonstrating an appreciation that the threat to Australian forces would be predominately from AK-47 weapons employed by so-called 'bandits'; the decision to deploy M113 Armored Personnel Carriers was appropriate. These vehicles from B Squadron 3 / 4 Cavalry Regiment had already seen service in Vietnam supporting infantry battalions, and were well-suited to provide armored protection, firepower, mobility and communications support for 1 RAR. Furthermore, these two units had a habitual training relationship and close leadership ties which facilitated a successful integration of their combined arms capability.

The success of the combined arms approach and pro-active patrolling by mounted and dismounted elements effectively ended the bandits' effectiveness in the Baidoa region. The Australian military presence provided the security conditions necessary for non-governmental organizations (NGO) to safely deliver food and humanitarian relief. While the 1 RAR Battalion Group achieved local security in the Baidoa region, the decision by the Australian government to not replace this force with another battalion group at the end of its six-month deployment led to a deterioration to these security conditions.

In the wake of the East Timor vote for independence, widespread violence and looting took place without intervention by the Indonesian security forces. The humanitarian crisis was particularly severe, with an estimated two thirds of the island's population of about 1 million people becoming internally displaced. To avoid further suffering for the people of East Timor, the United Nations Security Council authorized a Chapter VII operation to restore peace and security to East Timor. The first Australian

troops consisting of roughly 2,500 soldiers, with helicopter and armored support, arrived in the capital city of Dili on 20 September 1999 as the vanguard for INTERFET. Other countries contributing troops included the United Kingdom, Canada, France, New Zealand, the Phillipines, Thailand and the United States. These countries deployed follow-on forces to support INTERFET (Breen 2000, 184).

During INTERFET's initial phase of securing Dili, the armored element consisted of units equipped with the Australian Light Armored Vehicle (ASLAV) and the M113 Armored Personnel Carrier. Both were in high demand. Unfortunately, the ASLAV-25, armed with the 25-millimeter chain gun, providing excellent flexibility based upon its speed and firepower, was not available in significant numbers. It was decided during planning for the INTERFET operation that the ASLAV vehicle would be utilized for armored mobility for infantry, and the infantry carrier variant was deployed in large numbers instead of the 25mm chain gun variant of the vehicle.

The initial ASLAV forces had not conducted thorough training with the infantry they were supporting, resulting in initial tensions between both the infantry and armored commanders at the ground level. The employment of the ASLAV with dismounted infantry requires thorough training to gain tactical effectiveness between the mounted and dismounted elements. Ad hoc employment to suit the local conditions is not the most effective means of employing combined arms. The support provided by the M113 units was much smoother as they had developed habitual relationships with their supported infantry battalions. Subsequently, they were better prepared for combined arms operations. "The need to group forces according to task is acknowledged, but formations and units should in principle be employed with minimal change to their organization. The

‘plug and play’ concept may only be appropriate when there is either sufficient notice for mission specific training, or when the threat capability is low. It should be avoided at the outset of an operation, when timeframes are compressed and ‘friction’ is at its highest” (3rd Bde POR OP WARDEN 2000,4).

To resolve the difficulties faced by these initial elements, the Australian follow-on forces conducted combined arms training before deploying to support the United Nations Transitional Administration in East Timor (UNTAET), which assumed military control from INTERFET on 23 February 2000. While the Australian planners recognized the need for a balanced armored and infantry force in East Timor, the lack of understanding of the individual capabilities between the two combat arms initially created tension during operations in East Timor. Pre-deployment training was emphasized for follow-on forces to East Timor, but the lack of understanding of the capabilities provided by the armored forces to the infantry-led force continued to limit their full effectiveness.

Current Operations – Afghanistan and Iraq

Operation Slipper is the designation for Australia’s contribution to the international coalition against terrorism and is one element of the government’s commitment to working with the international community to help prevent acts of terrorism around the world. To support the US-led operations in Afghanistan, the Australian government committed joint capabilities. A Special Forces Task Group formed the nucleus of the Australian ground contribution.

This Special Forces Task Group operated in Afghanistan for over a year and supported several major operations, including Operation ANACONDA. On several occasions, due to the severe mine threat, the Task Group conducted combined arms

operations with the United States Marine Corps Light Armored Vehicle Regiment. This combined arms approach of the Special Forces and wheeled armored vehicles had also been used extensively during Australian Special Force operations in East Timor in 1999. Of note, no formal training was conducted in Australia between the ASLAV Regiments and the Special Air Service Regiment, and once again these combined arms groupings were conducted ad hoc to support the operational requirement.

On 13 July 2005, the Australian government announced the deployment of a Special Operations Task Group to Afghanistan as part of Australia's continuing contribution to defeating global terrorism. A Special Operations Task Group consisting of soldiers from the Special Air Service Regiment, Commandos, the Incident Response Regiment and logistic support personnel have deployed to Afghanistan to conduct special operations in support of security and reconstruction efforts in the country. The Minister of Defense is also examining the possibility of deploying a Provincial Reconstruction Team to Afghanistan. Whether this force will be combined with an armored mobility element remains to be decided.

Operation Catalyst is the Australian Defense Force's contribution to the rehabilitation and reconstruction of Iraq. Due to the threat level in Iraq, Australian Forces have integrated infantry and armored capability with the ASLAV to provide armored protection and enhanced firepower for all operations. The two largest commitments of troops for this operation form a security detachment of infantry and cavalry soldiers who provide protection and escort for Australian personnel working from the embassy in Baghdad, and the Al Muthanna Task Group (AMTG) based in southern Iraq. The AMTG has two tasks: (1) provide a secure environment for the Japanese Iraq Reconstruction and

Support Group and, (2) assist in the training of local Iraqi Army units so they are able to take over the security responsibilities for the province of Al Muthanna.

The planning for Australia's contribution of forces for Iraq clearly identified the requirement to integrate armored and infantry forces to provide the most effective capability. Both the AMTG and Security Detachment in Baghdad are formed from disparate units that do not train nor work together during a normal training cycle. Instead they are formed and trained ad hoc prior to deployment to the theater. Due to the professionalism of the commanders and soldiers of these organizations, they have performed superbly, but they would benefit immensely from a common training experience during the normal training cycle.

An historical examination of the employment of Australian land forces from the Boer War through to the current Army operational deployments in Afghanistan and Iraq demonstrates that there is an Australian approach to conducting land warfare. Most Australian operational deployments have combined the speed and mobility of mounted forces with the utility and endurance of the infantry forces. The close linkages between the Infantry and Armored Corps, however, continue to be ignored both during training and when planning for these deployments. When called upon to deploy as combined arms teams, the Australian Army forms ad hoc organizations, with minimal pre-deployment combined arms training to gain the experience and familiarity necessary for successful operations within the contemporary operating environment.

While the Australian military experience continues to demonstrate the utility of employing combined micro-teams on operations, the current Australian Army structure, training system, and doctrine does not emphasize the importance of these teams. This

reluctance to permanently group mounted and dismounted capabilities is in part due to the inherent competition between the command leadership from the RAAC and RAINF. To best prepare the Australian Army for contemporary challenges, this competition must end with the Army embracing the utility of a combined arms approach at the lowest levels. The necessity to embrace this approach has become more apparent as the Australian Army addresses its version of transformation within the Hardened and Networked Army concept.

The Hardened and Networked Army – The Australian Army’s Transformation

Due to the complexities of the current operational environment and the demands on the Australian Defense Force to provide land forces for operations throughout the world, the Australian Army is presently receiving a high degree of respect and support from the Australian government. In this environment, the Australian Army remains constrained as to the size of the land force by the Government’s strategic guidance and budgetary restraints. To provide the best possible land force to support the government’s strategic guidance and within the financial means provided, the Australian Army has embraced the Hardened and Networked Army concept as the means to conduct force ‘transformation’ to remain both ready and relevant for combat operations in the future.

To understand the implications of HNA to the future of the Australian Army and how it will train for and conduct operations, it is necessary to examine the paradigm shift in Australian Strategic Guidance that has occurred during the term of the present Australian Government. The strategic guidance has removed the constraints from an Army designed and equipped primarily for the defense of Australia to an Army that is a balanced component of the joint force that can conduct expeditionary operations in the

littoral environment of our immediate region or, if necessary, support coalition operations in other parts of the world. To support this paradigm shift, the Army has embraced a new doctrinal approach -- Maneuver Operations in the Littoral Environment (MOLE). MOLE emphasizes the importance of a joint approach to conducting operations and the interdependence of the services to successfully conduct operations in littoral regions. The Army has also recognized the greater lethality of potential threats utilizing Short Range Anti-Armor Weapons and Surface to Air Missiles. To provide better survivability and lethality in this new environment, the Army is embracing a move from a light infantry oriented force to a light armored force. It will rely upon agile combined arms teams as its foundation.

Australian Strategic Guidance – A Paradigm Shift

The Strategic Tasks which the government requires of the ADF are described in the 2000 Defense White Paper, *Defending Australia*. This document clearly enunciated that the defense of Australia and contributing to the security of our region and further abroad were essentially related elements of the same task. The White Paper authorized the development of an expeditionary or offshore capability for the Army by stating that “The development of our land forces needs to reflect a new balance between the demands of operations on Australian territory and the demands of deployments offshore, especially in our immediate neighborhood” (Leahy 2004, 22). An examination of the Australian deployment to East Timor in 1999 concluded that the Australian Army was structured and equipped primarily for the defense of continental Australia. This Army structure no longer provided strategic responsiveness for the Australian Government.

Prior to the 2000 Defense White Paper, the Australian Army's previous strategic direction stated that the Army would develop its force structure for the defense of Australia. This focus for force structure and doctrine conflicted with the realities that faced the Army during the 1990s -- offshore deployments to Somalia, Cambodia, Rwanda, Bougainville and finally to East Timor. The Australian Chief of the Army, Lieutenant General Leahy, clearly describes the effect of this former strategic guidance upon the Australian Army. "We gradually lost strategic agility; our units became hollow; our ability to operate away from Australian support bases declined to a dangerous degree. Moreover, our capacity to generate, sustain and rotate forces in the field diminished alarmingly" (Leahy 2004, 23).

Examination of Australian operations in East Timor identified many key deficiencies for the Australian Army and led to the new strategic guidance provided by the 2000 Defense White Paper. The government consolidated this paradigm shift in defense planning in the Defense Capability Plan by providing new equipment for the ADF to support this new guidance. While implementing these changes in the Australian Army, the 11 September 2001 attacks against the United States heralded a new strategic era for the world and for Australia. In February 2003, the Australian government issued an Annual Strategic Review which emphasized the increased lethality and reach of non-state actors, and their effect upon the security of Australia. The September 11 attacks demonstrated that no country is safe from terrorist aggression, and emphasized the importance of strategic reach and responsiveness in fighting this threat.

The Hardened and Networked Army Concept

As current operations in Iraq and Afghanistan have demonstrated, the future enemy will rarely challenge coalition military power directly. They would likely operate as smaller groups of insurgents, utilizing low technology hand-held anti-armored and anti-aircraft weapons or Improvised Explosive Devices to inflict casualties upon coalition forces. These attacks will not be designed to defeat our forces directly, but to attrit, in an attempt to undermine public support for the conflict. Within South Asia alone there has long been a massive increase in the development and purchase of Short Range Anti-Armored weapons that provide increased lethality for a small determined enemy. Lieutenant General Leahy clearly describes the effect of this new threat upon the Australian Army.

The proliferation of RPG 7, 16, 18 and 22 weapons, along with a range of other deadly anti-armour weapons, means that close combat without protection from armour is highly dangerous. It would be irresponsible, to the point of immorality, to risk the lives of Australian soldiers through exposure to lethal fires. Contemporary conflict environments require the provision of adequate armoured protection for deployed military personnel...Close combat remains the Army's core business. (Leahy 2004, 33)

One of the key aspects of the HNA plan recognizes that the Australian army needs to move its combat weight from a traditional light infantry focus to a light armored force. While the 2000 Defense White Paper clearly ruled out increasing the number of heavy armored regiments for high intensity conflict, it stated that Australian forces must be equipped with the necessary combat weight to safely conduct full spectrum operations. The key outcome from this guidance was that the Australian Army would further embrace the combined arms team as the central component of the way the Army will fight the tactical land battle. The legacy tank system employed by the Army, the Leopard

AS1, did not provide adequate crew protection or sufficient lethality against an enemy to form part of these combined arms teams. It was decided by the Australian Government based upon advice from the Australian Army to replace the Leopard AS1 with the M1A1 Abrams Armored Improved Model (AIM) to provide a modern tank as a central element of these combined arms teams. Additionally, the Army would be reorganized to provide armored mobility and protection of varying degrees for all soldiers on the battlefield. This would be achieved with the use of a variety of planned or in-service light armored vehicles. To enhance this capability the Army also plans to remove singular battalion capabilities within the force structure, and create more like battalions, to better meet deployment and rotation requirements and remove hollow organizations from the Army.

While many defense observers in Australia focused on the tank replacement and the move to a lightly armored force as the central concepts of HNA, they did not consider the impact of the 'Networked' aspect of HNA. The networked aspect recognizes the reliance of the Army upon the Navy and Air Force to conduct full spectrum operations, especially in the littoral environment. The aim of a 'networked' combined arms approach is to provide the soldier on the ground with increased situational awareness through networked technology and to provide to the lowest level the ability to cue fires from joint assets to defeat the enemy. This concept of a networked battlespace with direct sensor-to-shooter links is not new. Special Forces have embraced the concept for many years. The challenge for the Australian Army is to recruit and train servicemen and women with the mental agility and education to master this complex scheme of maneuver for future operations.

The HNA is Australia's response to the paradigm shift in the government's strategic guidance. It is designed to provide greater strategic agility for our future force, and to ensure that the Army has an increased level of survivability. How best to structure the Army to meet the requirements of HNA is still being debated by both the military and special interest groups in Australia, with considerable challenges still facing the Army. "It is important to note that Hardening and Networking the Army is not only about changes in technology and equipment, but also about force structure and doctrine. It is only through balanced and carefully considered changes to the three elements of technology, structure and doctrine that true military progress can be made. Currently the land force is changing its equipment, but the parallel tasks before it concern establishing the right force structure and military doctrine in order to make the optimum use of new equipment" (Leahy 2004, 36).

Armored and Infantry Integration for the Future Combined Arms Teams

The central component for the future HNA concept is the ability for the combined arms team both to maneuver in contact with the enemy and to direct precision weapons to destroy the enemy. Since the Australian Army is a small force, it has never been able to rely upon 'mass' to achieve a desired effect upon the enemy. Instead, through historical analysis, the Australian way of war has been to develop combined arms micro-teams with sufficient elements of the different combat and combat support Corps to defeat the threat. Historically, the problem has been that these teams are formed on an ad hoc basis with relatively little combined arms training prior to employment in combat.

Debate as to the best grouping of these combined arms teams has commenced in professional military circles in Australia. The *Australian Army Journal* often features

articles discussing the future employment of Australian combined arms teams. Colonel Michael Krause, the Director of the Future Warfighting department in the Military Strategy Branch of the Australian Defence Headquarters, has written several of these articles. He argues that the small-unit team is the foundation of the Australian Army, and that contemporary operations continue to demonstrate the need for an increased emphasis on combined arms utilizing both mounted and dismounted capabilities. “The achievement of close coordination between infantry and armour only occurs with careful preparation. Such preparation demands excellent communications, continuous training and refined tactical doctrine between mounted and dismounted troops” (Krause 2004, 45).

Colonel Krause further argues the utility of the micro-team concept by discussing the emerging theory of *minimum-mass* tactics. Krause defines minimum-mass tactics as the

use of multiple small teams in the battlespace, each capable of producing military effect both alone and in combination. Such tactical teams are characterised by a low electronic signature yet continue to possess an exponential combined-arms capability for battlespace effectiveness. Teams executing minimum-mass tactics require access to disengaged joint fires both from within and outside the battlespace. (2005, 73)

Colonel Krause further argues that the Australian Cavalry Regiments are the closest doctrinal organization in the Australian Army to operate utilizing minimum-mass tactics. The Cavalry Regiments are often under-resourced in the vital component of dismounted soldiers. This is largely due to a conservative desire to not permanently group a mounted and dismounted capability within the Cavalry unit.

Colonel Krause further argues that while it is necessary to retain the traditional Corps based skill-sets for the future Australian Army, these elements need not be grouped at the battalion level as they are today, but at a much lower tactical team level. The reality

of the Australian Army is that due to the strength of the historical Corps structure and hierarchy, there is institutional reluctance to permanently group combat arms capabilities at the micro-team level. Much of this reluctance is due to a belief that infantry and armor are in competition for resources, and therefore are an institutional threat to each other.

This institutional mistrust is arguably strongest between the officers and soldiers of the RAAC and RAINF Corps. However, it is these two Corps which provides the majority of the combat power for the combined arms team, particularly at the micro-team level. It is the men of these two Corps who physically maneuver on the battlefield under enemy fire, and who are intimately dependent upon their complementary capabilities to defeat an enemy force. At present, it is only through combined training and limited exposure on professional development courses and during officer training that the leadership of the two Corps learn to appreciate the capabilities of the other.

Within the HNA concept of combined arms at the microteam level, this limited approach to combined arms development between RAAC and RAINF will no longer suffice. A paradigm change at the tactical level must occur. This is necessary to link the strategic direction provided by the HNA with the realities of current and historical operations. By combining the RAAC and RAINF as a single Combat Maneuver Corps, all soldiers and officers within the new organization would be intimately linked in training and in future force structures. This linkage would ensure that the complementary capabilities of mounted and dismounted combat are properly integrated for future warfare. Through this approach the overall standard of dismounted skills could be improved for the mounted element, while the dismounted element would learn to leverage the advantages provided by the mounted capabilities. The second order effects

would be a future generation of officers and soldiers who truly embrace the combined arms approach and the conduct of combat at the micro-team level.

The Australian Army is currently conducting the most rigorous review of its capabilities and core competencies since the end of the Vietnam War. While simultaneously conducting operations in the Middle East, North and Southeast Asia, it is conducting a transformation of its capabilities under the HNA concept to meet the government's new strategic guidance. As part of this transformation, the Army increasingly embraces a combined and joint approach at the lowest levels, with micro-teams forming the basis of our future combat capability. To support this renewed interest in the combined arms approach, combining the RAAC and RAINF as a Combat Maneuver Corps would provide a means of truly integrating the complementary effects of the mounted and dismounted combat forces. It would also produce a generation of officers and soldiers who truly embrace the combined and joint approach.

The United States Army and Transformation

With the end of the Cold War and the rapid rise of new military technology, we have seen the beginning of what has been described as a revolution in military affairs. This era of rapidly evolving technology has led some to believe that future victories can be achieved from smart bombs and missiles alone, launched from sea or air platforms. Debate has raged within the United States as to the role of new military technology in future conflict and the relationship between this new technology and the soldiers, sailors and airmen who are called upon to employ it.

The US DOD outlined its transformation strategy with the publication of *Elements of Defense Transformation*. It defines transformation as “A process that shapes

the changing nature of military competition and cooperation through new combinations of concepts, capabilities, people, and organizations that exploit our nation's advantages and protect against our asymmetric vulnerabilities to sustain our strategic position, which helps underpin peace and stability in the world" (DOD 2004, 2) To understand how the Army is conducting transformation to be prepared to face both future threats and the current operational environment including the ongoing Global War On Terror (GWOT), this section discusses the imperatives supporting Transformation, the US Army Modular Force concepts. It then discusses issues raised by Douglas Macgregor's *Breaking the Phalanx* and *Transformation Under Fire* before, finally, discussing the future of US combined arms warfare in the Mounted Brigade Combat Team (MBCT) and the Stryker Brigade Combat Team (SBCT).

Elements of Defense Transformation

As clearly defined by Douglas Macgregor in *Breaking the Phalanx*, military forces that cling to existing advantages will eventually be beaten by opposing forces that adapt faster to the current operational environment. Therefore, the DOD has identified four imperatives for why the military must transform.

The *strategic imperative* recognizes the change from the Cold War strategic environment to the post 9/11 world where the US has no peer competitor, but faces an enemy who does not challenge US military power directly. The new defense strategy requires agile, network-centric forces that can defeat adversaries swiftly and decisively. The *threat imperative* expands upon the strategic imperative. It recognizes that the operating environment will continue to be less predictable, and that regional and non-state actors exploiting asymmetric capabilities are the most likely threat. The

technological imperative demonstrates how competitors can access highly capable, but relatively low-cost technologies to challenge the US technological advantage that it has enjoyed since the Second World War. Finally, the *risk mitigation imperative* recognizes that when developing and maintaining the force there will always be a force management, operational, future challenges and institutional risk in creating a force for the future (Elements of Defense Transformation 2004, 3).

The vision for this future force to meet these imperatives is a force that is joint, network-centric, and capable of executing effects-based operations (EBO).

In the process of transforming the way that we fight, we should emerge with a force that is more **expeditionary, agile and lethal** than the present force and more capable of employing **operational maneuver and precision effects** capabilities to achieve victory. The battlespace is expected to be a more dispersed one, within which our forces will conduct non-contiguous, mutually supporting operations. These operations will seamlessly tie in other government agencies, as well as multi-national partners, in order to permit a smooth transition from Major Combat Operations (MCO) to Stability Operations. (DOD 2004, 8)

It is these elements of the vision for transformation that the Army is striving to achieve with its future warfighting concepts that embrace “modularity”.

Modularity:US Army Transformation?

In 1997, Douglas Macgregor published his study on how best to transform the US Army, *Breaking the Phalanx: A New Design for Landpower in the 21st Century*. In his study, Macgregor argued that the US Army needs to transform its organizational structure, doctrine, and leadership by moving away from army, corps, and division structures that had served the US Army well during the Second World War and the Cold War. Macgregor argues that the future Army must be reorganized so that combat formations are smaller than the contemporary Army division. But this formation must

continue to be able to operate independently for extended periods in concert with joint assets. “Joint Task Forces (JTF) will need an Army component that is composed of highly mobile, self-contained, independent ‘all arms’ combat forces-in-being. These Army forces will have to be structured within an evolving joint military framework to exploit new technology and increased human potential for rapid and decisive action” (Macgregor 1997, 5).

Many of these design parameters have been included in the US Army’s response to transformation, and they are based on the modular force structure. The object of modularity is to provide enhanced tactical units that are responsive, fully mission capable with both combat and combat support assets, and equally capable whether deployed in a joint, combined, or multi-national environment. These forces are designed at the brigade level, and can be assigned directly to Regional Combatant Commanders to provide improved strategic responsiveness for full-spectrum operations.

Modularity will affect the Army’s war-fighting ability by increasing the number of combat brigades while simultaneously reducing their size. These maneuver brigades consist of three standard designs: Infantry, Stryker, or Heavy. The standard maneuver brigades will be supported by Maneuver Enhancement, Battlefield Surveillance, Aviation, Fires and Sustainment Brigades. Using the modular approach, different brigade groupings can be formed under a divisional headquarters to suit the operating environment and mission, providing more flexibility for planners.

This modular designed force meets many of the design criteria envisaged in Macgregor’s *Breaking the Phalanx*. In particular, it meets his first design parameter where the technology of war has increased the lethality of weapons and caused a greater

requirement to disperse forces. “As new technologies confer a greater warfighting potential on armies, this potential gradually finds its outlet within a fixed ‘all arms’ framework. Only the need to adjust the proportion of arms to different tactical situations seems to limit the degree to which the various arms are grouped together permanently” (Macgregor 1997, 50). Both the Australian and US Armies have identified the need to permanently group all arms capabilities at a lower level for the successful conduct of future combat. The difference is at what echelon this grouping is occurring. For the US Army this grouping occurs at the Brigade level. The Australian design is at the micro-team or Company level. This difference in echelon reflects the reality of the relative force size and structure that the US Army can deploy when compared to the Australian Army.

The Stryker Brigade Combat Team and the Heavy Brigade Combat Team provide case studies for the incorporation of combined arms effects at the lowest level. The Stryker Brigade combines three Stryker-equipped infantry battalions with a Reconnaissance, Surveillance and Target Acquisition Battalion, a Fires Battalion, a Support Battalion and anti-Tank and Engineer Company capabilities. All of these assets are organic to the Brigade, as opposed to being tailored for individual operations. “The SBCT achieves decisive action with combined arms at the infantry company level by applying the effects of direct fires from the mobile gun system (MGS), indirect fires from mortars and artillery, and joint effects of other services to support the infantry assault. The SBCT possesses a substantial capability, through its infantry and reconnaissance, surveillance, and target acquisition units, to place units and soldiers in positions of advantage throughout the area of operations” (The Stryker Brigade Combat Team 2003, 1-1).

Similarly, the Heavy Brigade Combat Team is designed to be the brigade of decision for the close fight, also incorporating a combined arms approach. “Heavy brigades are the Army’s principal formation for conducting sustained combined arms and close combat operations. America’s heavy forces serve as a deterrent to armed conflict and are capable of deploying worldwide and conducting full spectrum operations” (The Mounted Brigade Combat Team 2001, 1-1). The Heavy Brigades have two organic maneuver battalions. These are combined arms battalions consisting of two tank companies and two mechanized infantry companies. These battalions are the lowest combined arms formation that consists of two separate branches.

Douglas Macgregor critiques the Army’s transformational plan and provides suggestions on how to reinvigorate the process. Macgregor is particularly critical of the US Army’s reliance upon platforms, such as the future combat system (FCS) and mobile gun system (MGS) as a means of embracing transformation. He argues that transformation must continue to be in force structure, education, and training and in embracing commercial-off-the-shelf (COTS) technologies. He also believes that the traditional branch system is no longer relevant for an information age US Army. He suggests that the US Army:

Abolish the army branch system and create a new personnel system to support the reorganized, information-age army. Create the foundations for a structure in which unit identity takes precedence over branch identity. Compress the twenty-six army branches into twelve to sixteen branches in order to consolidate functions and activities commensurate with the integrative nature of all current and future combat operations. Maneuver; strike; intelligence, information, surveillance, and reconnaissance; and sustainment should be the four central pillars for army officer education and function must be balanced with functional areas. (2003, 30)

Both the United States and Australian Armies have been investigating how to best structure and prepare for future combat operations. The Australian Army has begun to restructure based upon the Hardened and Networked Army Concept. The US Army has embraced modularity. At the center of both initiatives is the understanding that future combat will continue to be conducted by combined arms teams. These forces can reach back through network enabled systems to joint assets to defeat future adversaries. The major difference between the two transformational plans is disparity in force size between the US and Australian Armies.

Conclusion

This chapter conducted a historical study of how the Australian Army has fought throughout its short, but important history. This investigation demonstrated that Australian land forces have predominately deployed and conducted operations as combined arms teams consisting of mounted and dismounted capabilities. While these combined arms teams have been traditionally deployed as the ground maneuver component of an operation, the Australian Army has resisted incorporating these two capabilities into permanent combined arms teams at the company and battalion level. Instead, it has created ad hoc formations for employment on these operations. This is not the most beneficial preparation for forces to conduct combat.

The emerging concepts that underpin the Hardened and Networked Army Concept provide an opportunity to question whether historical Corps are still relevant today, or whether the formation of a Combat Maneuver Corps would better provide the cultural and educational foundation for future combat leaders and soldiers. The US Army is beginning to struggle with similar issues to support the process of modularity. Douglas

Macgregor, a major proponent of transformation and modularity, also believes that restructuring the Army branch system would enhance the effectiveness of its combat forces. The direction of future combat force structure is becoming clear, but how best to provide an institutional culture that embraces a combined and joint approach is now the central question.

CHAPTER 5

CONCLUSIONS AND RECOMMENDATIONS

Conclusion

This thesis has demonstrated that the formation of a Combat Maneuver Corps would enhance the Australian Army's ability to conduct full spectrum operations by removing the cultural burden of the Corps based system and aligning ground maneuver capabilities functionally. By functionally grouping the ground maneuver components, the Australian Army would be better prepared to meet the objectives of the Hardened and Networked Army Concept and form truly combined arms teams at the lowest levels.

Major revision of the process of conducting initial employment training is required to achieve such a radical realignment of the combat capability. A suggested model for the development of the Combat Maneuver Corps would require amendment to the current process of both individual level training and the alignment of current maneuver units.

Combat Maneuver Corps: Individual Training

The adoption of a common standard for individual training would provide the basis for a combined Combat Maneuver Corps by ensuring that all members of the Corps have completed a shared training experience and standard. Utilizing the Army Individual Readiness Notice (AIRN) standards and the requirements of the First Division's Firepower Policy, a common standard would be applied for the basic competencies for employment within the Combat Maneuver Corps. This standard would be based upon the following criteria:

1. Medical and Dental Fitness. All existing requirements for medical and dental fitness would remain extant for the Combat Maneuver Corps.

2. Physical Fitness. While the Basic Fitness Assessment is the minimum requirement for Army Individual Readiness Notification (AIRN) reporting for across the Army, a higher level of basic fitness should be required for employment in the Combat Maneuver Corps. A Combat Maneuver Fitness test could include additional upper body strength requirements such as a heaves or ropes test, a 2.4 kilometer run in webbing and rifle, and completion of the current Army Combat Fitness Assessment. All physical fitness requirements should be tested at least biannually in line with current directives.

3. Weapons Proficiency. All combat maneuver personnel should be trained and tested annually in the use of the following weapon systems: (1) the 9 millimeter self loading pistol, (2) the Australian Steyr, (3) the Minimi, and (4) the Mag 58. These weapon systems are most commonly employed by both mounted and dismounted soldiers during tactical operations.

Initial employment training for all Corps members should be conducted in one location and based upon a modified Infantry Initial Employment Training course. This course would concentrate on individual field training skills and weapon proficiencies. This single standard of basic Corps training would increase the overall dismounted skills of the Mounted Specialists, without detriment to the Dismounted Specialists. On completion of the Initial Employment Training, personnel would be allocated to mounted or dismounted collective training courses. These courses would prepare individuals for employment in their primary trade in a unit environment. This shared initial training

experience will form the cultural basis for an increased acceptance of the combined arms approach at all levels.

Combat Maneuver Corps Units

The Combat Maneuver Corps will provide the close combat capability of the Australian Army, and would therefore be required to provide personnel for all conventional ground based combat units. These units will not only be permanently task organized with mounted and dismounted capabilities, but will be prepared to operate throughout the spectrum of conflict by maintaining the ability to form light, medium or heavy battlegroups, or a light armored brigade, if required. As the Combat Maneuver Corps would be a single organization, there would be no conflict of interests between mounted and dismounted specialists when raising task oriented battlegroups for future operations.

Figure 1 provides graphical representation of a potential Combat Maneuver Corps Organizational Structure. The fundamental improvement over the present model is that the Combat Maneuver Corps officers and soldiers can be employed in any of the current maneuver units. This would allow greater cross-pollination of personnel in both mounted and dismounted trades. More importantly, the officer and senior noncommissioned officer (SNCO) cadre would conduct a common education phase on combined arms mounted and dismounted combat operations prior to completing mounted or dismounted specialist training. This cultural shift for the education of SNCO and officers would support the Chief of Army's requirement to develop cultural change within the Army.

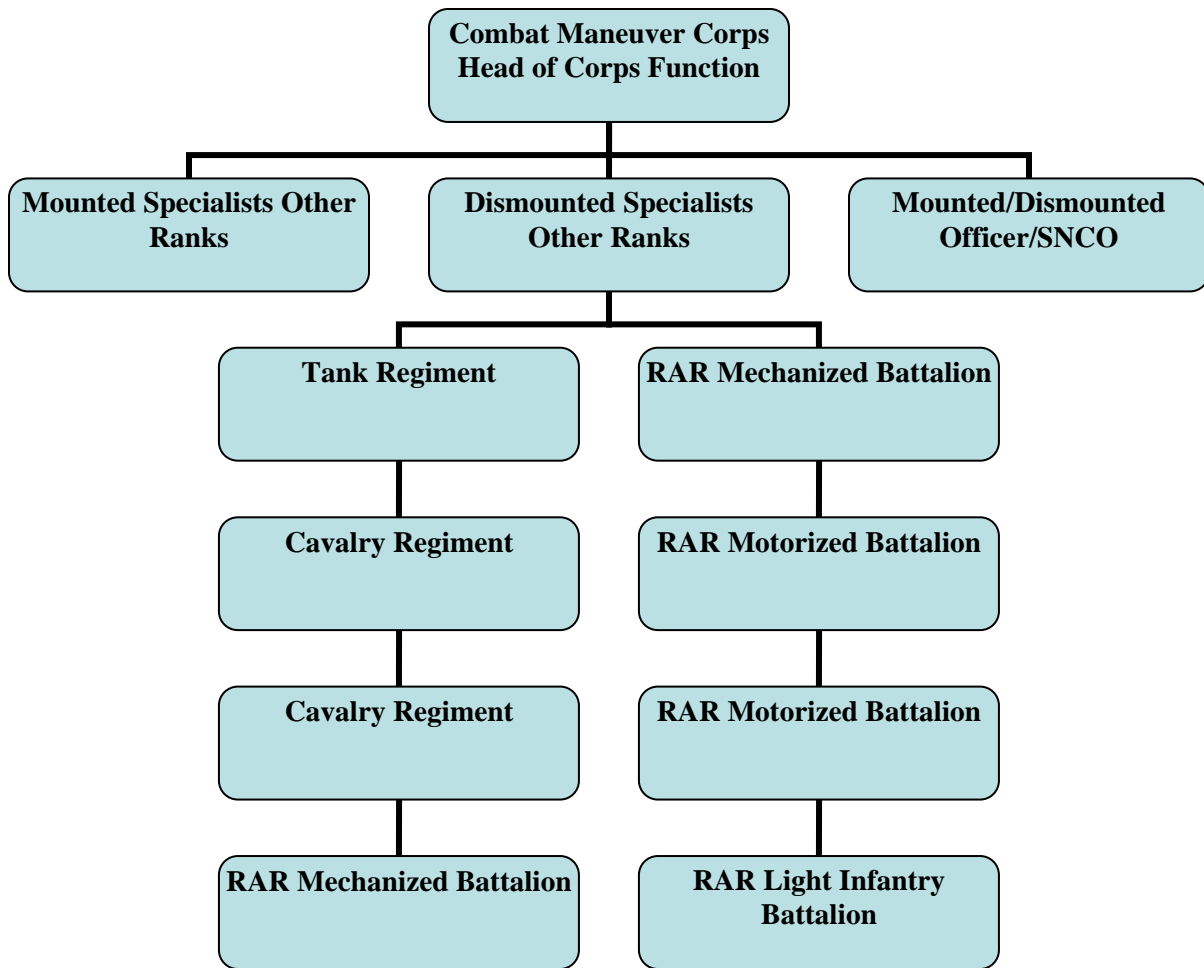


Figure 1. Organization of Combat Maneuver Corps

In forming the Combat Maneuver Corps, the retention of the traditions and history of service of both the Armored/Cavalry Regiments of the RAAC and the Royal Australian Regiment Battalions must not be ignored. The long and proud history of both RAAC and RAINF should be enshrined in the various units that the Combat Maneuver Corps will man. The current naming conventions for units need not be changed, to allow the retention of unit history and to encourage esprit de corps. Upon posting to an Armored or Cavalry Regiment or a Royal Australian Regiment Battalion, the Combat

Maneuver Corps soldiers and officers become the collective custodians of unit battle honors and history. In this way the Army will maintain both unit and previous Corps heritage within the regiments and battalions of the Army.

Mounted and Dismounted Trade Structure

Figures 2 and 3 demonstrate a potential trade structure for the mounted and dismounted wings of the Combat Maneuver Corps. Mounted training would continue to be conducted at the present School of Armor at Puckapunyal, Victoria, while dismounted training would continue to be conducted by the School of Infantry at Singleton, New South Wales. To truly gain a shared appreciation of the capabilities resident in the Combat Maneuver Corps, these two schools should be collocated in the future to allow continued combined training during the specialist training phase.

By combining the RAAC and RAINF into a single Combat Maneuver Corps, a potential risk of the Hardened Army structure, Trade/Corps sustainability, is mitigated. By allowing the Cavalry Scout positions to be filled by dismounted specialists, the Cavalry Scout trade becomes sustainable. By utilizing mounted specialists to fill M113 and Bushranger positions, these trades become sustainable. The training liability for the two M113-equipped Mechanized Infantry battalions is met by employing mounted specialists with the experience of the former School of Armor providing all mounted training to the Combat Maneuver Corps. As the Combat Maneuver Corps will become a larger organization with all personnel having completed a common period of Initial Employment Training, the Combat Maneuver Corps will also provide a larger pool of maneuver soldiers as a recruitment ground for the Special Forces capability.

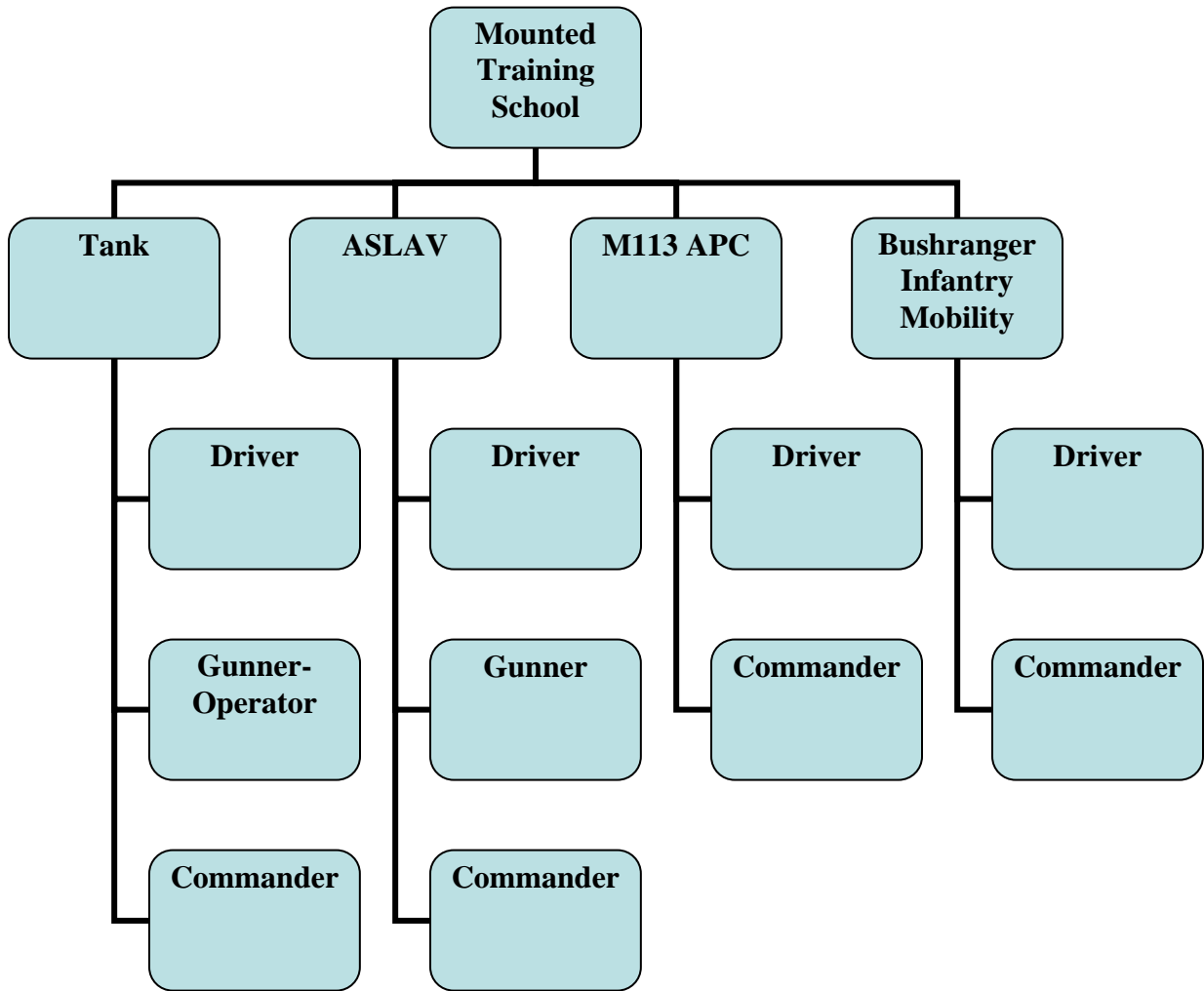


Figure 2. Mounted Trade Structure

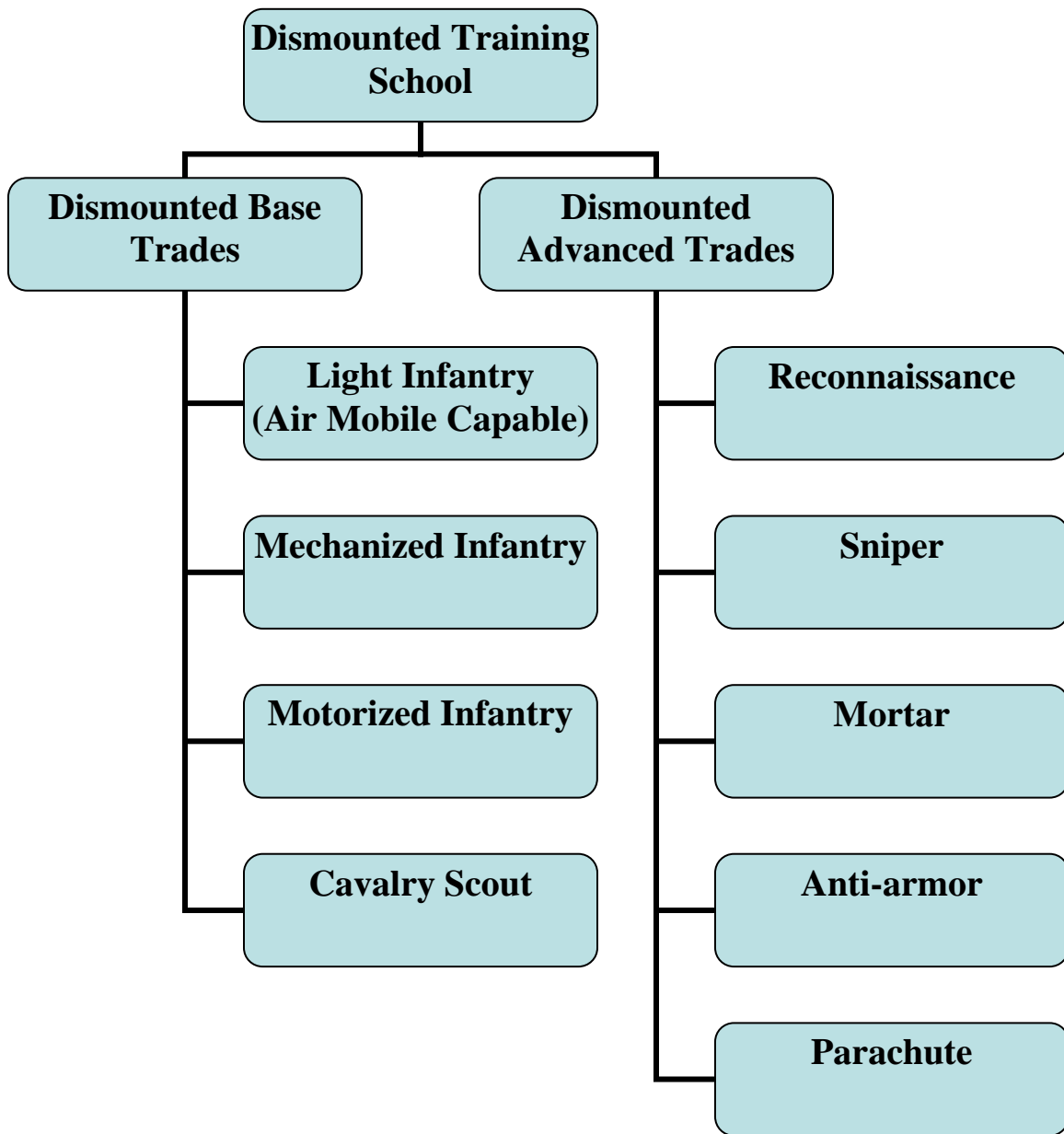


Figure 3. Dismounted Trade Structure

Recommendations

This thesis has concluded that the formation of a Combat Maneuver Corps by combining the RAAC and RAINF would support the Australian Army's transformation as envisaged in the Hardened and Networked Army concept. The development of a

functionally based Combat Maneuver Corps would herald a new generation of combat soldiers and officers who not only understand the importance of a combined and joint approach to future warfare, but truly embrace it. This cultural shift would prove to be the true benefit of the formation of the Combat Maneuver Corps. To support the development of the Combat Maneuver Corps concept, it is recommended that:

1. The Australian Army supports the formation of a Combat Maneuver Corps by combining the RAAC and RAINF as the basis of the ground based close combat capability.
2. The Australian Army Force Development Group investigates the financial and trade structure implications of forming a Combat Maneuver Corps.
3. The Australian Army conducts further analysis as to the benefit of functionally grouping other Corps to meet the future force requirement.

REFERENCE LIST

- Australian Army. 2002. LWD-1, *The Fundamentals of Land Warfare*. Army Doctrine Electronic Library 2005 Compact Disk.
- Australian Army. 2003. LWD-3, *Manoeuvre Operations in the Littoral Environment*. Army Doctrine Electronic Library 2005 Compact Disk.
- Australian Army. 2003. LWD-3-0, *Operations*. Army Doctrine Electronic Library 2005 Compact Disk.
- Australian Army. 2004. LWD-3-0-3, *Battlegroup Tactics*. (Emerging Doctrine) Army Doctrine Electronic Library 2005 Compact Disk.
- Australian Army. 1993. MLW 2-1-1, *Employment of Armour*. Army Doctrine Electronic Library 2005 Compact Disk.
- Australian Army. 1984. MLW 2-1-1, *The Infantry Battalion*. Army Doctrine Electronic Library 2005 Compact Disk.
- Australian Army. 2000. *3rd Brigade Operation Warden Post Operation Report*. Townsville, Queensland: Australian Army.
- Breen, Bob. 2000. *Mission Accomplished : East Timor*. Sydney, New South Wales: Allen and Unwin.
- Clayton, Nigel. 2005. *Australian Infantry*. Australia: Published by Clayton.
- DOD. 2004. *Elements of Defense Transformation*, Available from the internet at www.us.army.mil.
- Festberg, Alfred N. 1965. *Australian Army Lineage Book*. Melbourne, Victoria: The Military Historical Society of Australia, Victoria Branch.
- Grey, Jeffrey. 1990. *A Military History of Australia*. Melbourne, Victoria: Cambridge University Press.
- Hall, Richard JG. Major. 1968. *The Australian Light Horse*. Victoria: The Dominion Press.
- Handel, Paul. 1998. *Fifty Years of the Royal Australian Armoured Corps, 1948 to 1998*. Melbourne, Victoria: A Royal Australian Armoured Corps Memorial and Army Tank Museum Publication
- _____. 2003. *Dust, Sand and Jungle*. Melbourne, Victoria: RAAC Memorial and Tank Museum.

- Hopkins, Ronald N L, Major General. 1978. *Australian Armour*. Canberra, Australian Capital Territory: The Australian War Memorial and the Australian Government Publishing Service.
- Jones, Ian. 1987. *The Australian Light Horse*. Sydney, New South Wales: Time Life Books.
- Krause, Michael, Lieutenant Colonel. 2004. Lest We Forget : Combined Arms Assault in Complex Terrain. *Australian Army Journal*, vol. 1, no. 1: 41-46.
- _____. 2004. The Case for Minimum-Mass Tactics in the Australian Army. *Australian Army Journal*, vol. 2, no. 2: 69-79.
- Leahy, Peter, Lieutenant General. 2004. Towards the Hardened and Networked Army. *Australian Army Journal*, vol. 2, no. 1: 27-36.
- _____. 2004. A Land Force for the Future. *Australian Army Journal*, vol. 1, no.1: 19-28.
- Macgregor, Douglas A. 1997. *Breaking the Phalanx: A New Design for Landpower in the 21st Century*. Westport CT: Praeger Publishing.
- _____. 2003. *Transformation Under Fire: Revolutionizing How America Fights*, Westport CT: Praeger Publishing.
- U.S. Army. 2005. FM 1, *The Army*. Available from the internet at www.us.army.mil.
- U.S. Army. 2001. FM 3-0, *Operations*. Available from the internet at www.us.army.mil.
- U.S. Army. 2005. FMI 3-91, *Division Operations*, Available from the internet at www.us.army.mil.
- U.S. Army. 2001. FM 3-90.3, *The Mounted Brigade Combat Team*, Available from the internet at www.us.army.mil.
- U.S. Army. 2003. FM 3-21.31, *The Stryker Brigade Combat Team*, Available from the internet at www.us.army.mil.

INITIAL DISTRIBUTION LIST

Combined Arms Research Library
U.S. Army Command and General Staff College
250 Gibbon Ave.
Fort Leavenworth, KS 66027-2314

Defense Technical Information Center/OCA
825 John J. Kingman Rd., Suite 944
Fort Belvoir, VA 22060-6218

Director General Force Development Group (Land)
Land Warfare Development Centre
Tobruk Barracks,
PUCKAPUNYAL
VIC 3662
Australia

Embassy of Australia
Office of the Military Attache
1601 Massachusetts Ave NW
Washington D.C. 20036-2273

Dr Tony Mullis
Department of Joint and Multinational Operations
USACGSC
1 Reynolds Ave.
Fort Leavenworth, KS 66027-1352

LTC Pete Gibson
Department of Tactics
USACGSC
1 Reynolds Ave.
Fort Leavenworth, KS 66027-1352

Mr. Dave Vance
Department of Joint and Multinational Operations
USACGSC
1 Reynolds Ave.
Fort Leavenworth, KS 66027-1352

LTC Marcus Fielding
Department of Joint and Multinational Operations
USACGSC
1 Reynolds Avenue
Fort Leavenworth, KS, 66027-2314

CERTIFICATION FOR MMAS DISTRIBUTION STATEMENT

1. Certification Date: 16 June 2006

2. Thesis Author: Major Jamie McDonald

3. Thesis Title: Would the formation of a Combat Maneuver Corps support the transformation of the Australian Army as envisaged in the Hardened and Networked Army concept?

4. Thesis Committee Members: _____

Signatures: _____

5. Distribution Statement: See distribution statements A-X on reverse, then circle appropriate distribution statement letter code below:

A B C D E F X SEE EXPLANATION OF CODES ON REVERSE

If your thesis does not fit into any of the above categories or is classified, you must coordinate with the classified section at CARL.

6. Justification: Justification is required for any distribution other than described in Distribution Statement A. All or part of a thesis may justify distribution limitation. See limitation justification statements 1-10 on reverse, then list, below, the statement(s) that applies (apply) to your thesis and corresponding chapters/sections and pages. Follow sample format shown below:

EXAMPLE

<u>Limitation Justification Statement</u>	/	<u>Chapter/Section</u>	/	<u>Page(s)</u>
Direct Military Support (10)	/	Chapter 3	/	12
Critical Technology (3)	/	Section 4	/	31
Administrative Operational Use (7)	/	Chapter 2	/	13-32

Fill in limitation justification for your thesis below:

<u>Limitation Justification Statement</u>	/	<u>Chapter/Section</u>	/	<u>Page(s)</u>
_____	/	_____	/	_____
_____	/	_____	/	_____
_____	/	_____	/	_____
_____	/	_____	/	_____
_____	/	_____	/	_____

7. MMAS Thesis Author's Signature: _____

STATEMENT A: Approved for public release; distribution is unlimited. (Documents with this statement may be made available or sold to the general public and foreign nationals).

STATEMENT B: Distribution authorized to U.S. Government agencies only (insert reason and date ON REVERSE OF THIS FORM). Currently used reasons for imposing this statement include the following:

1. Foreign Government Information. Protection of foreign information.
2. Proprietary Information. Protection of proprietary information not owned by the U.S. Government.
3. Critical Technology. Protection and control of critical technology including technical data with potential military application.
4. Test and Evaluation. Protection of test and evaluation of commercial production or military hardware.
5. Contractor Performance Evaluation. Protection of information involving contractor performance evaluation.
6. Premature Dissemination. Protection of information involving systems or hardware from premature dissemination.
7. Administrative/Operational Use. Protection of information restricted to official use or for administrative or operational purposes.
8. Software Documentation. Protection of software documentation - release only in accordance with the provisions of DoD Instruction 7930.2.
9. Specific Authority. Protection of information required by a specific authority.
10. Direct Military Support. To protect export-controlled technical data of such military significance that release for purposes other than direct support of DoD-approved activities may jeopardize a U.S. military advantage.

STATEMENT C: Distribution authorized to U.S. Government agencies and their contractors: (REASON AND DATE). Currently most used reasons are 1, 3, 7, 8, and 9 above.

STATEMENT D: Distribution authorized to DoD and U.S. DoD contractors only; (REASON AND DATE). Currently most reasons are 1, 3, 7, 8, and 9 above.

STATEMENT E: Distribution authorized to DoD only; (REASON AND DATE). Currently most used reasons are 1, 2, 3, 4, 5, 6, 7, 8, 9, and 10.

STATEMENT F: Further dissemination only as directed by (controlling DoD office and date), or higher DoD authority. Used when the DoD originator determines that information is subject to special dissemination limitation specified by paragraph 4-505, DoD 5200.1-R.

STATEMENT X: Distribution authorized to U.S. Government agencies and private individuals of enterprises eligible to obtain export-controlled technical data in accordance with DoD Directive 5230.25; (date). Controlling DoD office is (insert).