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Land Warfare Studies Centre

The Australian Army established the LWSC in July 1997 through the amalgamation of several existing staffs and research elements.

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Foreword

In a world of complex war and unconventional threats ‘amongst the people’, of demographic and budgetary constraints and rapidly evolving technology, how does the Army situate itself to fulfil its obligation to the Australian Government? In recent times, the Army has simultaneously conducted high-intensity warfighting, peacekeeping deployments and counterinsurgency operations—and the foreseeable future suggests more of the same.

The 2006 Chief of Army’s Exercise, a biennial conclave of Army’s Senior Leadership Group, introduced and explored themes important to Army. It was a unique opportunity to reflect upon contemporary activity, of both the land Army and the policy environment, in closed surroundings, free from the pressures of staff duties and operational demands. Invited specialists provided international, joint, interagency and academic perspectives on the issues and challenges of today and tomorrow that confront the Army.

The 2006 Exercise was based around three focus themes:

- **Mission Command**: the challenges of decision-making in complex, ambiguous and volatile environments.
- **A ‘systems approach’ to problem solving**: ‘how to think’ versus ‘what to think’.
- **The Land–Air partnership**: leveraging responsive, precise and discriminative joint offensive support to enhance the power of the small combined-arms team.

Over two days, the invited audience discussed and debated these topics, aligning their thinking of the problem-space and seeking ways forward.

This volume contains the substance of those professional deliberations and, for the first time, makes public the intellectual activity that drives the continuing evolution of the Australian Army.

Thanks must go to the range of Army officers whose dedication enabled the 2006 Chief of Army's Exercise, both administrative and conceptual. First and foremost, the activity was driven and directed by Colonel Damian Cantwell and his staff at Army Headquarter's Future Land Warfare Branch. Special thanks go to Lieutenant Colonel David Wainwright, Lieutenant Colonel Patrick Kidd, Lieutenant Colonel Sam Pickering, Lieutenant Colonel Richard King, Lieutenant Colonel Chris Mills, Major Mel Hay, Major Leigh Buckingham, Major David Douse and Mr Simon Moffat for their time, effort and assistance.

Vital to the production of these proceedings has been the unwavering support and encouragement of Lieutenant Colonel Malcolm McGregor, Director Land Warfare Studies Centre. His guidance and leadership is the embodiment of mission command in action.

Lastly, I would like to thank all participants of the activity, from Chief of Army down, who accepted the civilian stranger eavesdropping on their conversations and recording everything.

Scott Hopkins
Land Warfare Studies Centre
January 2007

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INTRODUCTION

Lieutenant General Peter Leahy

I am delighted to introduce the theme of this year's Chief of Army's Exercise and to welcome our very impressive cast of foreign visitors. This is an important exercise; the Army is at war. Our soldiers are facing mortal danger in dispersed theatres, especially Iraq and Afghanistan, where they face highly motivated and adaptive enemies. Closer to home, in East Timor and Solomon Islands, Australian soldiers are attempting to secure peace and stability in volatile circumstances amid very ambiguous political circumstances.

Each of these missions is 'complex' in its own way. Collectively, they conform almost perfectly to the description of the 'Complex Environment' contained in our Future Land Operating Concept *Complex Warfighting*. That should not be a source of complacency. Accurately describing the nature of the environment is an essential prerequisite for success rather than an end state. The 2006 Chief of Army's Exercise examines aspects of professional mastery in the context of that complexity.

This is not an exercise in abstraction: we are at war. The Army is experiencing a greater operational tempo than at any time in my 35 years of service. Moreover, we are attempting to expand personnel numbers in key areas while simultaneously implementing the most significant doctrinal and structural change to the Army since the Second World War. This carries immediate and long-term implications for us as leaders. We owe our soldiers our best moral and intellectual efforts right here and now—their lives depend on us. In the longer term, we owe it the nation and the Army to nurture our ethos and posture this institution to meet the challenges of a future whose outline is only vaguely discernible. These are enormous challenges.

The Exercise poses several important questions to help shape our deliberations. Mission command must start at the top—I do not intend to be prescriptive or didactic. To begin, thoughts on 'Professional Mastery' and 'Complexity' will be presented. Then I will offer my thoughts on ways we that we are seeking to achieve the former as a means of coping with the latter.

It has become almost a cliché to speak of the immense changes wrought by globalisation. Yet nearly every professional challenge we face today has been created or shaped by the revolution in communications, information technology and travel that has occurred over the past two decades.

At the outset, let me emphasise that I am not swept away by technological change and views of each successive wave as a panacea. I firmly believe that, as professionals, we stand to learn more from Thucydides than from Bill Gates. The essential nature of war as a violent political struggle has not changed. Nor have the innate strengths and weaknesses of the human beings who deploy each new technological silver bullet. Warfare is characterised by enduring elements of violence, friction and uncertainty.

The folly and vanity of those who predicted either the End of History or the transformation of warfare into a bloodless game of virtual reality has been exposed by the almost medieval nature of post–Cold War conflict. It is vital to understand both the discontinuities as well as the enduring verities of warfare and statecraft. Most of the elements of what we define as 'complexity' have been caused by globalisation.

From the perspective of a soldier, I believe that the single most significant effect of globalisation has been the radical transformation of the relationship of the individual to the state. While it is as premature to declare the demise of the nation-state as it was to

declare the death of history, it is incontestable that many of the prerogatives of state sovereignty are eroding and under assault. Since the end of the Cold War, we have witnessed the emergence or re-emergence of previously suppressed ethnic, religious and tribal tensions. There has been a spate of bloody conflicts across Africa and among the Soviet successor states as identity politics flooded the vacuum left by totalitarianism. The series of convulsions in the Chechnya and former Yugoslavia typify this phenomenon. In our own neighbourhood we have seen ethnic strife in Fiji, Bougainville, Solomon Islands and East Timor. While different in scale and intensity, they belong to the same species of conflict. For our purposes, they each constitute complex environments where the physical terrain restricts the engagement ranges of our weapons. Likewise, the human terrain is complex, presenting language and cultural barriers to our situational awareness. This has changed the complexion of warfare.

The balance has shifted away from traditional conflict between similarly configured conventional forces of states to unconventional conflict involving ethnic militias, trans-national criminal gangs and pirates, as well as terrorists with global reach. Furthermore, globalisation has affected the means of conflict as well as its causes. Its effects are both strategic and tactical. For example, we are in the midst of the greatest period of urbanisation in the history of mankind. Revolutionary changes in agricultural practice, as well as the raised awareness of opportunities in the cities—itself a direct result of globalisation—has caused mass migration and urbanisation, especially those in the littoral zone, on every continent.

Peering into my crystal ball, I suspect that as climate change really starts to impact we are going to witness even more significant movements of population in pursuit of water, arable land, and even amenable temperatures. The security implications of this are likely to be profound, with conflict over resources, particularly water and

fishing rights, becoming major sources of organised violence. Adding a layer of complexity is the possibility that environmental fundamentalists may engage in violence against symbolic infrastructure that may be associated with carbon emissions or inefficient water use. Thus, warfare becomes increasingly an urban phenomenon. I am grateful to the retired British General, Sir Rupert Smith, for his insight that we have entered the age of 'war amongst the people.' The sudden, violent short-range engagements taking place today in Ramadi and Falluja are the way of the future. We will be operating among the people regardless of whether we are conducting warfighting or stabilisation operations. Urban war is innately complex in both the physical and human dimensions. When you add the ingredient of a foreign city—probably in the littoral region of a developing country—it is inevitable that linguistic, cultural and religious complexity will compound the problem.

Moreover, the same radical empowerment of individuals and non-state actors that has occurred in commerce, trade, and global finance has dramatically enhanced the effectiveness of irregular adversaries. Black markets in weapons, porous borders and access to the Internet have led to the proliferation of highly lethal individual weapons capable of defeating the most capable vehicles and aircraft in the arsenals of conventional forces. The almost unprecedented capacity of small groups to achieve strategic effects is the most significant change that has occurred in warfare over the course of my professional life. All of this has led to the latest fashion amongst strategic commentators and academics—an obsession with 'asymmetric' warfare. As the eminent British scholar Lawrie Freedman noted in a recent Adelphi Paper, the observation that an enemy will choose tactics and weapons that avoid an opponent's strengths is self-evident to the point of banality. A key element of professional mastery is clarity of thought and expression. One of the most damaging aspects of the obsession with technology and apparent revolutions in military affairs (RMAs) has been this

substitution of jargon for description and clichés for rigorous thought. So, what does the confluence of these trends on the battlefield mean for our soldiers?

At the tactical level, this has manifested in an exponential increase in lethality. Some RMA advocates argued that increased digitisation and precision would reduce violence and friction. They were wrong. Instead, we witness the evolution toward what Ralph Peters terms 'hyper-violence'—improved precision and massively enhanced killing power. As our esteemed guest presenter, Brigadier General Huba Wass de Czege, might express it—this has transformed the physics of the battlefield. We cannot ignore this and survive. Nor have we. I believe that we have been agile and adaptive in responding to these changes in warfare. The Hardened and Networked Army (HNA) represents a considered response both to that enhanced lethality and the emergence of small team irregular enemies. The HNA will hit harder and be harder to hurt. But the networking aspect will be the most profound shift. I am not sure that we have fully grasped the implications of this change.

In simple terms, the HNA will harness the technological advances in digitisation and communications. On the ground, this means that the individual soldier functions as a node in a complex network of sensors and shooters. This may sound like *Star Wars*, but it is already happening. It has variously been termed 'network-centric warfare' and 'network-enabled warfare'. I much prefer the recent iteration of 'human-centric warfare'. That puts the human being—the individual soldier—back where they belong, at the centre of our calculations. However, the HNA is just one component of our response to this complex and lethal environment. Indeed, it better equips us to survive and facilitates tailoring mission-specific force packages. To meet the doctrinal challenge of 'war amongst the people', we are developing a concept of *Adaptive Campaigning*. *Adaptive Campaigning* accepts that our operational focus is likely to

be on the allegiance of people living in urban areas—whether our mission is to re-assure, protect or isolate them from insurgents. The purpose of *Adaptive Campaigning* is to influence and shape the perceptions, allegiances and actions of a target population, controlling the overall environment to allow peaceful political discourse and a return to normality. All these concepts are easier to describe than to implement. Essentially, networking is anti-hierarchical. As David Schmidtchen of the Land Warfare Studies Centre concluded in a recent Working Paper on this subject, networking has the creative potential to destabilise the social order of our organisation. We need to keep that in mind. Warfare is an innately human activity and the Army, more so than the other Services, depends upon the judgement of our people to achieve success. Yet there are unpredictable consequences when a highly structured organisation such as ours starts to flatten its decision-making hierarchy.

To an extent, the Australian Army is well postured to deal with the issues of complexity. Since the Second World War, we have been a small army whose ethos is built on the skills of the individual soldier and small-unit tactics. We have traditionally been blessed with exceptional people. I do not think it is too jingoistic to suggest that our soldiers are unique. They continue to exhibit the same lively larrikin qualities of the ANZACS. They have always exhibited a very effective combination of sceptical common-sense. They tend to query authority. These are national traits and they give us a head start in mastering a way of war contingent upon small-team versatility and conferring wide discretion on junior leaders and soldiers. Accepting the inevitability of this decision-making devolution lies at the heart of our adoption of the 'I'm an Australian Soldier' creed. It emphasises mastery of close combat regardless of specialty. It demands that every soldier become a leader capable of seizing the initiative. This revolution has been imposed on us. There are no rigid, visible front-lines in complex urban terrain. The number

of female soldiers from logistics units killed in Iraq emphasises this point. I believe that adopting *Complex Warfighting* prepared us intellectually for this. Yet I suspect that we are better at describing Mission Command than executing it.

By now most of you will have familiarised yourself with these concepts. Some of you have been directly involved in their implementation. There are enormous institutional challenges arising from the devolution to small teams and individual soldiers of situational awareness and access to fires. Nor are these challenges confined to the operational setting. They represent an alternative organisational culture. They depend on a certain mindset and they reinforce it. Once we allow this genie out of the bottle, we are going to have to live with the adverse consequences as well as the benefits.

In your conference readings you will note that Lenny Wong has detected the effects of this syndrome among junior leaders returning from Iraq. Having operated with autonomy, flexibility and an enormous amount of responsibility, young company-grade officers return to the army in barracks with very valuable skills forged in a crucible. But these officers are much more difficult to manage in the traditional careerist manner. Having made on the spot life and death decisions and adapted doctrine and training to meet real-world situations, they are easily bored and frustrated by the highly constrained environment of peace-time military bureaucracy. We are not going to be immune to this trend. We are fortunate to have the valuable perspectives on Mission Command provided by our American and British allies. They each have distinct military cultures and have been operating at a degree of intensity, and on a scale that we can only envy. Roger Noble's insights, based on his recent operational command in Iraq, are of great interest to senior officers and the wider Army.

Mission command is more than just desirable in complex urban operations, it is absolutely unavoidable. But how do we maintain social cohesion in this brave new world of individual empowerment? How do we move from a traditional training paradigm (what to think) to an educational (how to think) one? How do we identify, recruit and retain the young men and women capable of doing this? These issues are on a seamless continuum rather than being separate problems. Army must get every one of them right. The stakes in this game are very high. We have been asked to expand in size and re-structure in time of war. Indeed, that distinction is becoming arbitrary and meaningless. The Chief of Staff of the US Army, General Peter Schoomaker, has concluded that it is likely that we are going to be at war continuously for a long time. This will require an expeditionary/campaign mindset. More importantly, the traditional methods of peace-time change and adaptation will simply not suffice. While our challenges are of a smaller scale than our American allies, they are of the same existential nature. They start with recruitment and retention and flow right through to the business-end—a young digger in Iraq or East Timor facing a decision whether or not to use lethal force against a group of youths throwing rocks and shouting slogans he cannot understand in front of a very unsympathetic media crew.

Those very trends of creative destruction unleashed by globalisation have undermined institutions. Young people are reluctant to commit to a lifelong career. They have a different attitude to authority. They live in a culture where material wealth rather than duty and sacrifice are lauded. They are used to mission command before we even sign them up. They are independent and footloose, with unprecedented access to information and are used to drawing their own conclusions from it. This is potentially a great strength to us. Yet, as I have already suggested, absorbing these people into a very traditional institution, which still operates top down—especially in barracks—is going to challenge our culture. We are not going to be the same

organisation at the end of this process. All the new kit and the new modular force packages are merely the tip of the iceberg. The unanticipated effects of devolving command to the lowest levels and empowering junior leaders and soldiers may be destabilising. Both shifting social norms and technological change have left us with no choice—this is how the coming generation of soldiers think and make decisions anyway. For the first time in history, the Army will no longer be the most decisive influence on the mindset and skills of its people. This will require us to be subtle and shrewd if we hope to direct their initiative in to the desired direction. Likewise, we have to attract, recruit, and retain these people in the face of every other societal impulse that is dragging them away from a service career before we can even contemplate giving them the skills and experience to face that stone-throwing crowd in Dili or Samarra. The long-term viability of the Army depends on it.

By now some of you are wondering how does Air/Land fit into all of this? Well, the intersection of complexity, mission command, and small-team warfare is increasingly occurring where the land and air domains meet. There is no more powerful symbol of the devolution of command to the individual than the application of air-delivered and space-enabled fires to targets on the ground. Increasingly, junior leaders and soldiers are accessing joint fires that were once the prerogative of their brigade and battalion commanders. This is really where the rubber meets the road in terms of the exponential empowerment of our soldiers though technology. At the Avalon Air show last year I posed the question 'Who owns the bomb?' If we think networking has the capacity to undermine *our* top down command and control structures, just watch the expression on a senior Royal Australian Air Force officer's face when you suggest that in a few years time cueing an air strike will be as technically simple as making a mobile phone call. Then explain that, in a fleeting engagement in a city, his pilot will have to react instantaneously to an order from a digger.

Army is already more reliant on space assets than the other services. The HNA will expand Army's presence in the air. Still, the greatest challenge will be improved joint cooperation to achieve an effect on the ground utilising air- and sea-based fires. I agree with Huba Wass de Czege's provocative assertion that we need to abandon our sentimental and parochial attachment to the term 'land power.' As we advance to the Seamless Force 2020, the cap badge or shirt colour of a shooter is going to be increasingly irrelevant. Nor does this contradict the view that war will be 'amongst the people.' Sure, people live on land and they are ultimately only open to long-term influence by land-based forces, but we have passed the age of land forces contributing land power exclusively to whole-of-government solutions to security challenges. While an effect will delivered on land, it will be joint in nature. There are limitless possibilities—a UAV finds the target, the Army small unit paints it for destruction by an aircraft or cruise missile. They are all linked by space-based assets. Of course, this omits the fundamental truth that, in terms of expeditionary warfare, there is no effect on land without the lift capability of the Royal Australian Navy and Royal Australian Air Force for lodgement and sustainment.

We have much to ponder over the next two days. As I said at the outset, this is a very important conference. I am looking forward to it with relish and I am confident that Army will benefit from our deliberations. In closing, I would like to warmly welcome our foreign presenters and observers. In particular, we are fortunate to have the opportunity to listen to Huba Wass de Czege—one of the foremost intellectual architects of the modern US Army. His seminal work will be familiar to many of you.

Further, it is always an honour to be joined by our British, American and Kiwi friends, with whom we are engaged in Iraq and Afghanistan today and with whom we share a history of sacrifice in good causes. We have a solid programme ahead, so let us get underway.

Chapter 1

Mission Command in the Contemporary Battlespace

Brigadier General Huba Wass de Czege

The environment for the contemporary military professional is an era in which technical challenges are great and novel, but utterly dwarfed by the conceptual ones. From the scope of adversaries, the impact of technology and the changing character of threats, commanding military forces in this complex battlespace pose significant challenges for officers junior and senior. The focus of this submission looks at 'how do we unlock and channel the initiative of our junior people in creative and useful ways'.

Unlocking the initiative

Tell them only what you want done, but not how

> The essential thing is action… The commander will tell them (his subordinates) what he considers necessary for the execution of his will, but no more, and he will leave them freedom in the manner thereof which alone ensures ready co-operation in the spirit of the whole. There will always be details in which a commander must just hope for the best. [1]

The fundamental requirement for the successful soldier, and thus the larger aspiration for a culture of 'mission command', is a bias toward disciplined action. This is a capability not bought off the shelf nor invented in a laboratory, but is instead grown organically from within.

[1] General Hans von Seeckt, *Thoughts of a Soldier*, Ernest Benn Limited, London, 1930 pp. 123–30.

Commanders at all levels promote or hinder this growth. Given the complexity of threats and operating environments, building a cultural bias toward disciplined action is the foundation stone for mission command.

During the 1980s, the US Army's doctrine reforms synthesised the tradition of decentralized command from the American mounted forces of World War II with the more developed theory of 'Mission Orders Command' borrowed from German doctrine [see Chapter 5, 'Systems Thinking']. The directive command culture of the Vietnam years was an invitation to disaster under the all-volunteer professional forces of post-Vietnam reforms. In confronting the realities of short-notice conflict with Soviet forces, US doctrine started from a premise of disrupted and rapidly changing battlefield conditions.

Chaotic conditions were expected. The frameworks of Field Manual 100-5, *Operations*, and the impact of the AirLand Battle, accepted a high degree of open flanks and non-linearity across the forward edge of the battle area. The messy consequences of chemical, biological and nuclear weapons were included in calculation of how to manoeuvre and defend—the premise was for counter-aggression operations to resist a competent, high-technology conventional enemy force. It was also recognised that command and control would be complicated by electronic warfare. Commanders at the higher level may not be able to communicate reliably and expeditiously with the forces under their control. Further, the higher-echelon commanders could not possibly be as informed as the commander at the point of decision. In combat against Soviet forces, success would require split-second decisions whether to counter attack, stay and fight on, or fall back to subsequent defenses.

Fuelled by the success of the 1991 Gulf War and its apparent vindication of high-technology means for swift and decisive warfighting, information-age hubris caused some backsliding to

directive command during the 1990s. Equipped with 'information age' command and control systems, some thought they could direct the actions of subordinates. In fact, they could direct only one subordinate at a time because the human mind is a 'sequential processor'. While you are paying attention to one particular subordinate, you are not paying attention to everyone else. If subordinates are conditioned to waiting for the commander to tell them what to do, then not much will happen. In a fluid battlespace, with a persistent, global and pervasive media and adaptive enemies, this would prove fatal.

The commanders undertaking such directive control are also neglecting their own duties; the price of tempo is forethought. Commanders, in this case, are not taking the time to think about what ought to happen next. Their subordinates are down a level, making things happen, and the commander needs to weave a larger tapestry of local effects into an operational fabric. Such micro-management adds some precision but loses 'tempo'. Helping subordinates make better decisions is time-consuming. When the commander lowers their gaze from their own level, stasis follows.

However, modern equipment provided useful bonuses—information technologies really do not need directive command. Instead, information-age command and control systems can actually improve the functioning of a system of 'mission command' because the lateral information sharing and 'cross talk' informs subordinates and speeds anticipation and adaptation. Their cross-picture is clearer, enabling local initiative and freedom of action. Further, this enables the subordinate commander to understand the picture that their boss is seeing, and the problems their boss is having. The junior commander is empowered by initiative to make far better and more important decisions about what they might do to help the situation along.

The idea of being 'at the decisive spot' without actually being there has been attractive for at least a century. During the Second World War, George Patton created a cavalry group whose sole task was to shadow his divisions and report on local circumstances. Wisely, Patton used this capability unobtrusively. The 6th Cavalry intermingled its elements with the Third Army's leading formations to inform him of progress and conditions. There are times when the commander needs to be in person at the point of decision, where they most need to be, and this cannot be replicated by technology, virtual or otherwise. These technical systems merely aid the commander in determining the point of 'where they ought to be'.

Since radio nets have been widely used, commanders have learned to 'eavesdrop' on units in contact. The secret of success is to be unobtrusive, because when people know that the boss is on the net, they will often be less frank, and more hesitant and inhibited. Commanders must resist the urge to make decisions for subordinates—this distorts the effect and junior staff come to expect commander input. Selective and unobtrusive surveillance of key actions can be a useful aid to command within a Mission Command system. Information-age commanders may have a better 'directed telescope', when they learn how to employ it.

The challenge of complexity and chaos, the preponderance of missions that pose 'wicked problems'[2], tempt modern commanders to centrally control, direct and limit actions of subordinates, given intense scrutiny and potential adverse and unpredictable outcomes. However, today's problems tend to be aggregations of unique local problems and thus less sensitive to macro-engineered top-down solutions.

[2] A 'tame problem' has a single correct answer, whereas a 'wicked problem' has no apparent solution and is based in complex interactive systems; see Clay & Austin in this volume.

The essential logic for mission command remains the imperative to exploit fleeting local vulnerabilities of committed and intelligent adversaries, and to seize and capitalise on sudden opportunities to win the trust and confidence of people one locality at a time. These local solutions then synergise into a larger victory. This demands swift, sure, informed and unhesitating decisions at the lowest practical level to act—or to not act—in the face of provocations.

Channelling the initiative

The 'philosophy' of mission command—and it is as much a philosophy as a technique—is particularly useful in a world of 'wicked problem' missions. Rather than combat this inherent lack of certainty by trying to force greater 'situational awareness' and a 'shared operating picture', the commander needs to embrace the fluidity of the environment and empower their subordinates to exploit this as an opportunity. To do so, the commander needs to provide clear, simple and memorable statements of intent rather than prescriptive 'end-states' and 'methods'.

So, what is 'intent' and how does it fit into mission command? Lieutenant Colonel Roger Noble states it elegantly: 'A network of intent that binds all to the mission is the logical and optimal approach to the challenge of complexity and chaos.'[3] Intent is the logic of how the mission you have been assigned fits into the bigger frame of the problem you are trying to solve. 'Method', 'end-state' and other similar terms are a mental box—a conceptual constraint—because they are prescriptive, directive command terms. Intent must be stated broadly, to act as a channelling device for junior commanders.

[3] Lieutenant Colonel Roger Noble, 'The Essential Thing: Mission Command and its Practical Application', *Australian Army Journal*, Vol. 3, No. 3, Summer 2006, pp. 109–28.

Intent always trumps the assigned mission: this reality means that subordinates need to be conditioned in a form of obedient disobedience, to know when to disobey. The right mission all the time is a state of perfection, not a reality of human warfare. Operational commanders may receive hazy orders; they must, however, craft clear missions for their subordinates. The best way to achieve this is to convey clearly the intent of the mission.

Tell them what you 'really' want done, and quickly, now that there is a new opportunity or danger.

The goal is to have trained professionals, acculturated to the local problem, within a cohesive 'team of teams', employing the best forms of mission command. It is very difficult to practice mission command with 'pick-up' or *ad hoc* teams, so it becomes essential to embed the skills, culture, and discipline of making a 'mission command' system effective. Mission command must be practiced at all levels, demonstrated by example, for an acculturated approach to develop, thus enabling it to work regardless of the force package assembled to confront the emergent threat.

When to formulate intent? Usually, the 'bad habit' way is for the staff activity to generate courses of action, from which the commander chooses; they then state their intent. You should not have to wait to do that. Once the commander understands their mission, the intent of their superior and the intent of the superior above that, they should be able to sit down, scratch their head and write it out. Whatever course of action they devise has to fall within the broad channel of the intent from commanders two levels up. Done properly, intent is formulated immediately after mission analysis and the review of commander's intent two levels up, and it applies to any course of action that might be selected to perform the mission. This clear intent then informs, shapes and channels the actions of subordinates two levels down.

Of course, this is easier said than done. The intent statement comes from the intuition of the commander. This requires self-discipline. Crafting a useful intent statement requires training and practice; it doesn't come naturally. Intuition is hard to put into words without extensive drafting. When it takes more than three short sentences to state intent, the commander himself has not clarified the matter in his own mind. Intent must stick in the minds of subordinates two echelons down, without reference to notes, when they are exhausted, and during the heat of battle.

Command intent channels subordinate actions and freedom of action. Without a culture of trust and confidence, subordinates will hesitate even when they know what to do. Mission command requires disciplined habits and practices to ensure knowledge of intent two levels down and clear and concise expressions of intent throughout the chain.

'Wicked Missions'

This philosophy of mission command is particularly useful in a world of 'wicked' problems and missions. In such a world, missions are inevitably assigned based on uncertain knowledge of the true nature of the problem, and actions are always launched with incomplete knowledge. This has been recognised since early medieval times by the saying: 'A commander speaks boldly of victory but has a plan for defeat.'

All great operational artists used both sides of their brain—the creative half that formulates intent and plans and the critical and logical half. On the one hand, you must frame this problem, and you must give planners something to work with, and you have got to act before you know everything you'd really like to know in order to execute, otherwise you will act too late. So you've got one effort that searches for the information that allows you to execute the plan, the

other side of you brain, however, is simultaneously saying 'have I identified the right problem? Is this the right plan?' Contemporary business literature has named this 'double-loop learning'.

One 'learning loop' pursues how best to execute the plan. The other 'learning loop' questions whether the plan is still appropriate. Mission command systems facilitate more rapid adaptation to either and both learning loops. Mission command is more compatible with 'double-loop learning', an essential practice when confronting missions involving 'interactive' rather than 'structural' complexity. A commander that is 'double-loop learner' derives their intuition and thus intent from mastery of this skill.

Conclusion

Without a unitary solution, success in a 'wicked mission' requires action from the bottom-up, by the soldiers and field commanders in the best position to understand and implement practical, appropriate solutions. Freedom of action and a bias toward disciplined action combine to create forces that understand the intent of their superiors and seek ways to both complete their mission and improve the decision-environment of their own superiors. Trust is a lynchpin, a necessary condition, one made more critical when joint and interagency force-packaging to create capability is the norm. The ability to think critically and creatively under battle stress and time pressure is the acme of the military art, from the tactical to the grand strategic.

Chapter 2

Mission Command: the United States Marine Corps Perspective

Lieutenant General Joseph F. Weber

I will address the topic of the US Marine Corps perspective on mission command. To be honest, my first question when I got the request was, ‘what is mission command?’ It took my staff a little time to report to me, or should I say remind me, that ‘mission command’—be it the Australian, British or US Army definition—is in fact the standard, accepted command philosophy of the US Marine Corps. We do not use the same vocabulary, and we actually do not have a ‘single’ specific term. In one publication we refer to ‘mission tactics’, and in another it is ‘mission command and control’ when applied to one end of the command and control spectrum. Whatever the name, what I took away from studying the various definitions was that they all contain the same basic theme: give subordinates clear purpose, intent and desired end-states, command and lead them, give them the freedom execute and, as situation dictates, command the environment for them to achieve success. It is quite clear to me from studying recent Australian and British doctrine where you are going with respect to transformation of your armies. Neither the US Army nor US Marine Corps can lay claim to sole ownership of ‘mission command’. I find that to be good, signifying that we are strong allies are together on the same sheet of music with the way we approach future warfighting.

I am based out of Okinawa, Japan, very far from the flagpole and the doctrine gurus and deep thinkers in Quantico, Virginia—yes, the

Marines really do have some 'deep' thinkers! So, I am going to give you my thoughts on mission command based on my personal experiences and the current situation in III Marine Expeditionary Force. We all agree that mission command is the way to go—I know our young, hard chargers do. It is what is necessary in order to achieve the flexibility required on today's battlefields and crisis areas. But it is difficult—difficult in itself—and perhaps even more difficult because it requires a 'change in mindset', a different way of conducting our warfighting business. If it were easy, your Army Chief would not have seen a need to bring leaders of your experience and stature here to talk about it. Mission command is especially difficult at the level that we in this room will most likely have to apply it: complex, joint and combined interagency and coalition operations, with intermingled and entwined conventional and traditional combat engagements, but also kidnappings, manhunts, criminal activity, corruption, ungoverned spaces, lack of political will and diplomacy, zero economic stimulation, all occurring within the same complex, confusing, uncertain and extremely lethal operating area.

Let me pose a question or two. What does it take to do mission command? The basics are so obvious that we sometimes overlook them. Let us take just a minute to dissect the term: it is mission and it is command. In order to create the proper focus, you need a 'clear' mission. In many cases, however, we find ourselves in the middle of a crisis with sparse guidance and only a foggy idea of what should be done, but no clear mission. As commanders, the first and most important thing we must do to ensure success is to develop that clear, understandable mission, even if or when we do not receive such ourselves, or the one we do receive is about as clear as mud. If your subordinates deserve anything, it is to know exactly what you are thinking, what you want them to do. A clear, understandable mission is essential. The second half of the term is 'command'. As we study, learn and teach mission command practices to our young

officers and non-commissioned officers, we must ensure that they recognise, understand and experience our 'command' of them. Unless you can effectively command your forces, you will not be able to convey your intent, the key to the unification of all actions to a single 'purpose'. Can you effectively exercise mission command when all those working with you do not recognize your intent, purpose, method—your command? You as a commander must be felt, touched, seen and experienced. All of us sitting in this room think we are pretty good, having only a few professional shortcomings, and for the most part, that is probably true. Yet one thing none of us are very good at is reading minds, and neither are our subordinates who we are privileged to command.

Fundamental to our understanding of mission command is the requirement for cohesion. I refer here to cohesion acquired through a shared experience and the mutual understanding derived from personal knowledge and experiences exchanged between superiors and subordinates. How do we achieve such cohesion in a 'Coalition of the Willing', when we do not know who from what country's military may show up, or who from what agency in our government or the United Nations will be the key player? How do you exercise 'mission command' with strangers? These challenges are common to all of our Service commands.

I want to address how I see these trials from my perspective as the Commander of III MEF in the US Pacific Command area of operations (AO). There are a diverse set of challenges in the Pacific. We have everything from high-intensity threats on the Korean peninsula and the China–Taiwan Straits, to the low-intensity activities that support fighting terrorists across the South-East Asian littoral—the 'long war', the war for influence. Throw in a myriad of guaranteed natural disasters requiring massive amounts of humanitarian assistance, along with a requirement to support Operation *Enduring Freedom* (OEF) and Operation *Iraqi Freedom*

(OIF) with up to 2000 Marines and sailors on a daily basis. For III MEF, this is all tied together and managed by an aggressive training and exercise program that includes the conduct of major field- and command-post training with most of our Pacific partners. III MEF has multiple missions and I have multiple bosses. It is imperative that I develop a clear, understandable III MEF mission, or sets of missions, with priorities so that my staff and my subordinate commanders can execute on a daily basis. I am sure that many of you face the same challenges—few military units in these times have the advantage of having a 'singular' focus. So, I would say that job Number One is sorting through what is crap and what is really important and then establishing and disseminating a clear, understandable mission (with purpose and intent) to your subordinates.

I do not know about the situation in Australia, but we in the United States have a knack for creating the most confusing command relationships possible. I am reminded of the story in Rick Atkinson's book *An Army at Dawn*, about the North Africa campaign in 1942–43. It seems that midway through the campaign General Eisenhower pulled his staff in and spent all day trying to draw out the organisation of the Allied Headquarters. He eventually gave up and admitted that it was in his words, 'probably too complex to put on paper.' A contemporary example could be drawn from Operation *Allied Force*, the protection of the people of Kosovo. My own belief is that if you cannot look at the command and control wire diagram and understand it within 30 seconds, it is too complicated.

Unfortunately, I do not control all the wire diagrams in which my commands and I appear. Neither will you, especially in a complex coalition operation. I am a fan of Marine General Zinni, who created that infamous, non-doctrinal control measure he called 'handcon.' It is not anything described in a doctrinal publication, but it

represented the personal agreement between two commanders who had to get along and work together. On many occasions, I find it—and you are going to find it—to be the best tool in your kit to create those relationships and to manage that human operating environment that will best support mission command and eventual mission accomplishment. I know some of you out there cringe at the thought of such informal, non-doctrinal arrangements. It is too 'pie in the sky', it cannot be done—political correctness, risk management and accountability issues will not bear it. An exchange between Major General Lucian Truscott, Commanding General 3rd Infantry Division, Commander JOSS landing force and Rear Admiral Connolly, Commander JOSS naval task force, for the invasion of Sicily in 1943 proves the value of 'handcon':

> **ADM Connolly**: "General, you are in command of this expedition. I know what the orders say, but as far as I am concerned, you are in command. Our job is to help you in every way we can. I will carry out any order you issue, and I will continue to do so until you notify me that you do not require us any longer."
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> **MG Truscott**: "Admiral, I can't tell you how deeply I appreciate your spirit of cooperation. So far as I am concerned, there will never be any question of command between us. You are in command at sea, and I know that you will stay with us until the assault succeeds. We have worked together in harmony so far, and we will continue to do so."

Compare this with the often-fraught interactions between Admiral Turner and General Holland 'Howlin Mad' Smith in the Pacific theatre in 1943, such as the Battle for Tarawa, and the invasion of Saipan in 1944.

The interaction between Connelly and Truscott illustrates that the personalities of commanders concerned and their ability to work together toward the common end is far more important than the

phraseology or wire-diagram contained in any order. This leads directly to my last point: you most likely will not be executing your missions with a group of commanders that you have worked with closely over a period of years. You will not have that cohesive team that you want. This year, III MEF is participating in major exercises in the following ways: we are a combined MEF on the Korean peninsula with multiple US and Republic of Korea divisions in addition to our Marine air wing and Marine logistics group. We are a joint force land component commander working bi-laterally with the Japanese Ground Self-Defense Force—their constitution prevents them from being a part of a formal coalition command relationship. And we are the US half of a US–Australian combined land component command. How can we establish the standard operating procedures (SOPs) or tactics, techniques and procedures (TTPs), let alone trusting, stable working relationships within a single staff—much less between commands—when we face daily the fog and friction of reduced budgets, personnel turbulence, changing politics, irregular/non-conventional missions for which we are continuously trying to adapt, and so on? We all face the same challenges.

If not careful, you will not have a team; you will have a team of teams, each with a different approach to operations. In the case of coalitions and interagency, this means a different culture all together. I believe that our most important role as commanders is to establish those personal relationships with key associates—to bring them onto 'your' team—to force your staff to walk the extra mile to bring their staff counterparts onto your team. You will not completely fight through all the fog and friction, resolving all the differences, but you will have done the best that you can to set the conditions for effective mission command. When you get right down to it, mission command is knowing yourself, knowing your men and women, and empowering them. It is leadership.

What does mission command look like when applied to a diverse set of subordinate leaders and supporting and adjacent units and/or agencies? We have a little book that we used to issue to our second lieutenants at the Basic School in Quantico. It is called *Battle Leadership* and was written at the US Army Infantry School in 1933 by a German captain named Adolf von Schell. Now, I do not know what eventually happened to old Adolf, but he had some pretty good advice. One story that sticks out is that of a German brigade commander who described how he dealt with his three very different regimental commanders. He said:

> … each of our three regimental commanders must be handled differently. Colonel A does not want an order. He wants to do everything himself, and he always does well. Colonel B executes every order, but has no initiative. Colonel C opposes everything he is told to do and wants to do the contrary.

The General proceeded to prepare for his upcoming attack by mentioning to Colonel A that the brigade had an attack mission that was very difficult. Colonel A immediately volunteered to conduct the attack. The General then gave Colonel B a scripted, standard operations order for his regiment's role in the attack. The General then went Colonel C and told him that the brigade would be attacking, but that his regiment was tired and would be kept in reserve. Colonel C immediately objected and volunteered to attack. The brigade attacked and all three regiments carried their objectives.[4]

The point of the story is obvious and I am sure that you all are experienced in understanding how to deal with your commanders and staffs. I want to emphasise, however, that to utilise mission command successfully in complex organisations and situations, the

[4] United States of America, United States Army FM 22–100, *Army Leadership*, Chapter 6, downloadable from: < https://atiam.train.army.mil/soldierPortal/atia/adlsc/view/public/9502-1/fm/22-100/ch6.htm >

commander has to be the salesman of their mission. They have to get out and press the flesh and discuss their intent. They have to attempt to understand how those around them interpret what they are saying. They have to modify their approach based on the different cultures and personalities of their subordinates. Standard, written, doctrinal mission-type orders, associated with complicated C2 wire diagrams, will not do the trick. It will be conversation and time spent with an ally brother-in-arms. It will be cajoling an interagency official. It will be careful explanation to a critical joint staff officer. It will be managing the rice bowls and personal egos of other commanders throughout the chain of command. Personal relationships are critical for execution of mission command, not computer technology and information management.

Let me conclude by summarising: mission command—the use of commander's intent and allowing flexibility in execution—is the only path to success in light of today's complex, uncertain and lethal environments. Mission command requires a great deal of personal work and attention by the commander to lay the groundwork for its full and proper implementation. The commander must be prepared to craft a clear and understandable mission from vague and conflicting guidance. The commander must attempt to create a simple and easily understandable set of command relationships—barring that, they must personally fight through the fog and friction created from confusing relationships. They will win that fight with force of will and a positive, constructive personality. Finally, they must build their own team so that it has mutual understanding and cohesion through establishing personal relationships; not emails and not video teleconferences, but face-to-face contact to the greatest possible extent.

My staff told me that a dead German quote was a requirement in discussions of doctrine. So here goes: most are familiar with Field Marshal von Moltke's statement that 'no plan of operations extends with certainty beyond the first encounter with the enemy's main

strength.'[5] What Moltke said in 1871 is even truer today, and it is why mission command is critical. Yet many people forget his statement in a preceding paragraph: 'a mistake in the original assembly of the army can scarcely be rectified in the entire course of the campaign.'[6] What he was referring to was the physical lay down of the army, but I believe that what I have described here as the foundational work of the commander, developing the mission, creating clear lines of authority, and establishing personal relationships, are the modern equivalents of the 'original assembly of the army' that are critical to our success.

I applaud and encourage all of you as you move forward with your own Army's transformations. Your pursuit of the Hardened and Networked Army is proof that your Army Chief 'gets it'—that all of you get it. You clearly recognise the warfighting challenges of the future, 'the long war', the war for influence, the complexity and uncertainty of it all, and most importantly the requirement for change. III MEF and the entire US Marine Corps look forward to working with you in realising this change as you continue to be the premier fighting force that you are. I say that from experience in working with you in Kosovo, Iraq and throughout the Pacific area of operations. *Semper fidelis*,[7] and keep attacking.

[5] Helmuth Graf von Moltke, *Moltke on the Art of War*, Daniel J. Hughes (ed.), trans. Daniel J. Hughes and Harry Bell, Presidio, Novato, CA, 1993, p. viii.
[6] Ibid.
[7] The motto of the United States Marine Corps, adopted in 1883, is Latin for 'Always Faithful'.

Chapter 3

The United Kingdom Perspective of Mission Command in the Contemporary and Future Conflict Environment

Brigadier Nick Caplin

My approach is to begin with a brief description of the UK doctrine for mission command before looking at the implications of the current and future operational context. Mission command for UK forces is a philosophy of decentralised command intended for situations that are complex, dynamic and adversarial. It underpins the Manoeuvrist Approach and has four enduring tenets: timely decision-making; the importance of understanding a superior commanders' intention; a clear responsibility on the part of subordinates to fulfil that intent; and determination on the part of the commander to see a plan through to a successful conclusion.

The underlying requirement of mission command is the **fundamental responsibility to act**, or in certain circumstances to decide *not* to act, within the framework of the commander's intent. This approach, which has formed part of British military doctrine since 1987, requires a style of command that promotes decentralised command, freedom and speed of action, and initiative. It has the following key elements:

- **Clear Intent, Mission and Context:** A commander gives his orders in a manner that ensures that his subordinates understand his intentions, their own missions and the context of those missions.

- **Effects-based:** Subordinates are told what effect they are to achieve and the reason why it needs to be achieved.
- **Appropriate Resources:** Subordinates are allocated sufficient resources to carry out their missions.
- **Minimal Control:** A commander uses a minimum of control measures so as not to unnecessarily constrain his subordinates' freedom of action.
- **Freedom of Action:** Subordinates then decide for themselves how best to achieve their missions.

The *commander's intent* binds the activities of a dispersed force into a whole. Concurrently, they maximise subordinates' authority to act. This intent is the principal output of decision-making and is seen to be a commander's personal responsibility. This observation from Field Marshal Slim shows that the importance of personal responsibility is not a new notion, and it certainly remains relevant today:

> I have published under my name a good many operational orders and a good many directives … but there is one paragraph in the order that I have always written myself … the intention paragraph. [8]

Mission command is thus designed to promote a robust system of command that balances **unity of effort** with **freedom of action** at all levels. It requires the development of **trust** and **mutual understanding** between commanders and subordinates throughout the chain of command. Before moving on to consider the relevance of or challenges for mission command now and in the future, it is worth teasing into some of the underlying principles a little more.

Unity of effort encompasses a number of inter-related factors, including: the use of common doctrine, tactics, techniques and

[8] Field Marshal Viscount William Slim, Lecture to Staff College, 2 November 1967, quoted in United Kingdom Ministry of Defence, Army Doctrine Publication–*Command*, para. 0237.

procedures; a common language and *understanding* of command; and a high standard of collective training and teamwork. Taken together, these factors promote a common understanding throughout the force. They also assist the coordination of actions in time and space and the ability to react swiftly to changes in the situation. Failure to achieve unity of effort will, at best, lead to confusion and missed opportunities. At worst, the result can be catastrophic. Unity of effort is enhanced by subordinates understanding the intentions both of their superiors and of the missions laid on other-level players in the field of action: the business of vertical and horizontal integration.

Given the inherently complex and at times chaotic activity of war, the doctrine warns that commanders should seek not to over-coordinate or control. In particular, synchronisation—the co-ordination of activities at specified times—is unlikely to succeed unless responsibility for its implementation is delegated to the lowest practical levels. Freedom of action is what tactical commanders need, and this is largely achieved through decentralisation of responsibility and authority. Decision levels should be set as low as possible. **The more fluid the circumstances, the lower the decision level should be set**.

The spirit of mission command requires a presumption of trust between superior and subordinate as well as between peers. Such trust develops through shared experience: it must be earned, not demanded. This bond of trust includes the tolerance of well-intentioned mistakes. If a subordinate cannot trust his superior to support him in such circumstances, the bond of trust erodes. The subordinate will not act on his own initiative, and the moral fabric of mission command will be destroyed. This has relevance to investigations into soldiers' actions in Iraq, which I will return to shortly. Trust is based on a number of qualities, including professional competence, personal example and integrity.

As with trust, mutual understanding requires time to establish. With experience, commanders should be in a position to understand the issues and concerns facing their subordinates: he understands them and they understand him. Mutual understanding is also based on sharing a common perception of military problems and a professional understanding of doctrine, drills and procedures. Where shared experience and common doctrine do not exist, the commander needs to pay particular attention to the generation of mutual understanding between himself and his subordinates. When dealing with understanding, a commander needs to be satisfied that the *language* he uses is heard, interpreted and understood in the manner that he intended.

It seems to be clear that successful mission command is dependent on strong, confident leadership which, in turn, is influenced by the inter-relationship of a number of conflicting emotions: trust, cognisance, inquisitiveness, discipline, responsibility and involvement. A human scientist might map these on a spider's web (Figure 1, overleaf) to illustrate the extremes between the trusting, aware, sensibly inquisitive, disciplined, responsible and judiciously involved Mission Commander and the untrusting, uninformed, needy, ill-disciplined, overly responsible and too-involved Directive Controller.

This may be stretching the point for demonstration, but I am sure that we have all seen commanders who have a tendency to over-control—and this will swiftly stifle any effective application of mission command.

This, then, is the UK doctrine of mission command—a robust system of command balancing **unity of effort** with **freedom of action** at all levels, requiring the development of **trust** and **mutual understanding** between commanders and subordinates throughout the chain of command. This doctrine has held good since its' inception in 1987 and is seen to be enduring. Yet it also needs to be

dynamic in order to drive the development of both the science and art of military operations at the fastest practical rate. What will cause it to endure will be the fact that it is based on hard-won and often bitter experience gained on operations. Re-examination of doctrine is therefore both vital and healthy. So what has changed?

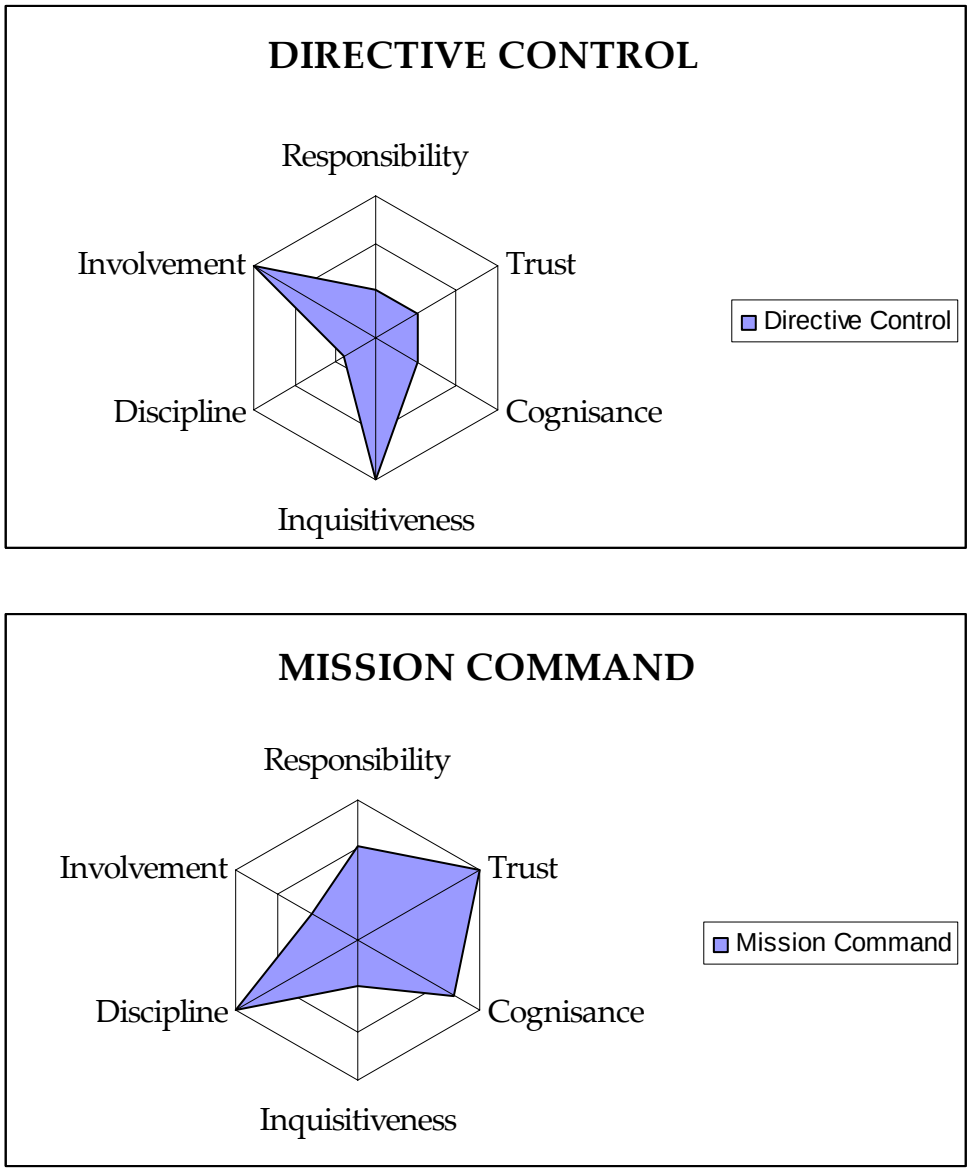

Figure 1: Directive Control v. Mission Command

First, foremost and most obviously, the context has changed. In 2003, the UK Government released *Delivering Security in a*

Changing World.[9] This paper recognised that, in the past, it was possible to regard military force as a separate element in crisis resolution. However, the contemporary and future security climate will require ever more integrated planning of military, diplomatic and economic instruments at both national and international levels. This 2003 publication noted that the global security situation is considerably more uncertain than that pertaining at the time of the *Strategic Defence Review*, written just 5 years previously in 1998. Our armed forces face an even broader range, frequency, and often duration of tasks than previously envisaged.

Our forces need to be prepared to conduct the full range of operations, from warfighting through to peace support. The reality, as noted by General Charles Krulak of the United States Marine Corps, is that the outcome of military operations in this complex environment hinges upon decisions made by small-unit leaders and by actions taken at the lowest level. Block One is where warfighting or major combat operations take place. Block Two is the domain of stability operations, nation-building, counterinsurgency and the messiest, not necessarily the bloodiest, most complex set of problems the soldier can face. Block Three is where the peace can be kept, where it may have to be enforced but, by in large, where consent rules.

Life is perhaps simplest and instinctively more comfortable within Block One, where we can focus on warfighting and exploiting superior doctrine, training and equipment. Yet, it is clear that any sensible adversary today will avoid confronting a major land power symmetrically. If caught on Block One, the sensible adversary will wish to move to the will-sapping complexity of Blocks Two and Three as quickly as possible. Enter the 'strategic corporal' who

[9] United Kingdom Ministry of Defence, *Delivering Security in a Changing World: Future Capabilities*, July 2004, accessed from < http://www.mod.uk/NR/rdonlyres/147C7A19-8554-4DAE-9F88-6FBAD2D973F9/0/cm6269_future_capabilities.pdf >

quickly finds themselves in the awkward, unclear and uncomfortable position where they, and the people they work with and amongst, has to transition from the Law of Armed Conflict to Sovereign Law. Unless the strategic corporal is clear about this and all that it entails—the responsibility for due diligence, personal responsibility and the potential for their military actions to result in charges of manslaughter—what they do next and how they react might be inappropriate, ineffective, counter-productive, or all three.

Therefore the strategic corporal, or even the strategic private, has to face up to the fact, whatever its attendant difficulties might be, that they are regulated when their adversary is not. They have to be up to the challenge to bridge the gap between the governed and violent chaos very quickly. Having to think and fight on their own, and on their own two feet, is part and parcel of the business of soldiering. There are times when doing nothing might be the best option, when it is best to let the situation calm down of its own accord, when acting might trigger entirely the wrong sort of response. Yet there are times—fleeting moments of opportunity—when the soldier must be ready to step in, unhesitatingly, to nip trouble in the bud to maintain or restore order, to take the shot, to make the arrest, to halt the protest, to get aid through. The decisions made in those critical moments are fraught, and the fact that they may have to be made is fraught with challenges. The strategic soldier still has to face up to the challenge and be prepared to act, and indeed be prepared to deal with the consequences.

This devolution of strategic effect presents considerable challenges for the chain of command. Our soldiers need to be trained to succeed on Blocks One, Two and Three, and to move seamlessly between them. That is a tall order in anyone's book or Army. We have been studying in-depth the implications of the training challenge over this last year, and watching closely the solutions chosen by our major allies. We are not helped by our current level of commitments—

described very publicly by our Chief of the General Staff, General Richard Dannat, in recent times. This level of commitment sees us operating well above our Government mandated and resourced position, resulting in soldiers deploying more frequently and undergoing less training. The temptation has been to react by focusing our training exclusively on the operation at hand, be it Iraq or Afghanistan. However, we are holding the line on continuing to focus the bulk of our training on what we term the Adaptive Foundation, the generic warfighting skills that our soldiers need in the round. We temper this by adjusting our generic training to reflect the contemporary operating environment (COE), or at least those enduring elements of the COE that can be seen to be enduring. For example, we now include factors such as asymmetric threats, multi-agency play, convoy protection, operations amongst the people and 'pattern of life' issues as routine alongside high-tempo manoeuvre. This is not easy. It takes time to adjust soldiers' minds, and it certainly takes time to build up pattern-of-life scenarios—and time remains the resource in shortest supply.

The Litmus test for our mastery is success on operations, and whether that success continues for years to come. There is a very public Litmus test that others apply, which is the extent to which our soldiers behave and act appropriately, and there are two particular areas that have given cause for concern: shooting incidents and prisoner abuse. Looking first at shooting incidents, we have to give soldiers the confidence to open fire and at the same time afford them protection of the law when operating within the Rules of Engagement (ROE). The UK's investigation policy is clear; in any incident, outside of warfighting, where shots fired result in the death or serious injury of any person, a formal inquiry is required. Application of this policy strives to strike a balance between the maintenance of operational effectiveness, including creating the correct climate within which soldiers can effectively operate, and the need to behave—and be seen to behave—within the law.

Investigation is fundamental to this latter purpose, the aim of which is simply to establish the facts; in other words, it is neutral. The facts will exonerate those who have acted properly, but we cannot escape the duty to investigate any action in which soldiers *may* have acted inappropriately. In doing so, the Army is attacked on two fronts. On the one hand, outsiders claim that *any* investigation by the Army into its own actions lacks independence and credibility. On the other hand, there are those that see it as an indication of an over-zealous approach by the military police, which inevitably alarms those under investigation and those serving alongside them. There is a sense that such investigations demonstrate a misunderstanding of the circumstances in which soldiers must make decisions. Either way, senior officers are in a difficult position. The Army will always be caught on the horns of this particular dilemma: dammed if we do not investigate, and dammed if we do. There is no easy solution, much as we would like a simple resolution. Although we have had a few cases that have come close, the bottom line is that no British soldier has been prosecuted for opening fire in Iraq, Afghanistan or Bosnia.

It is in the prisoner abuse category that we have got it wrong, and it is not easy to see why, given the focus in training on 'respect and humanity'. Some soldiers are, without doubt, malicious, and others are misguided. Yet there is no doubt that just one bad incident is very damaging to the mission. These incidents test the concept and limits of command responsibility, and therefore the application of mission command. It could well be argued in many of our prisoner abuse examples that insufficient attention was paid by the chain of command. The trick, I suspect, is to achieve the right balance of *supervision*, leading to command confidence, rather than applying an excess of directed control. It is a neat trick, nonetheless, and there is no getting away from command responsibility.

Irrespective of the level of danger the soldier faces, and of any legal implications, whatever he does is subject to scrutiny: from

government, from the international community, from the non-governmental, supporters and critics alike. It is part and parcel of today's environment. In an ideal world, scrutiny and objective criticism or support should require those who scrutinise to understand what it is they are really observing. And herein lies another difficulty, for perceptions matter, albeit that they are frequently based on a snapshot and passing sound bite, and uncertainty indeed hinders. Professor Richard Holmes, a much-respected military historian in the United Kingdom, captured this concern when he said 'We watch observational documentaries and believe ourselves better informed'.[10]

Let me leave the Strategic Soldier there for a moment, and turn to another significant change facing us today, the business of information operations and management. There is no doubt that the UK's BOWMAN program[11] represents a Military Technical Revolution that will lead to new ways of thinking and fighting within the network-enabled era. For the Land component, Network-enabled capabilities (as represented by the concept of the Recognised Land Picture) present a new challenge for mission command, although for the Maritime component this concept has been a reality for some time. It is interesting to note that British maritime doctrine identifies two distinct threats to mission command as a direct result of the improved capabilities of modern communications that facilitate the recognised maritime picture. The first is the possibility for operational or strategic levels of command to micro-manage tactical operations should they wish to. The second, conversely, is that subordinates might develop such a

[10] Richard Holmes, 'I'm angry that no one seems to know what our soldiers have to put up with in Iraq', *The Telegraph*, 2 April 2006, < http://www.telegraph.co.uk/opinion/main.jhtml?xml=/opinion/2006/04/02/do0204.xml >

[11] BOWMAN is the UK's requirement for a digital battlefield communication system.

dependence on direction that they will lack initiative if communications are broken.

To solve this conundrum, British maritime doctrine proposes that commanders should strive to achieve a subjective balance between mission command and direction. Too much emphasis on delegation in applying the principle of mission command could jeopardise manoeuvrist operations just as surely as too great emphasis on micro-management. There are a number of obvious tensions that will make this balance difficult to achieve. Whilst the growing capabilities of communications systems will increase exponentially the amount of information available, that information in turn needs to be processed and assessed into knowledge and wisdom. For commanders, or even politicians, armed with first-class situational awareness, and the attending illusion that they are masters of the salient facts that are unfolding in the tactical arena, there will inevitably be the temptation to deploy the long screwdriver and to practise micro-management. Yet, no matter how sophisticated communications become, they will not replicate the 'feel' of the situation available to the soldier on the ground, the Strategic Soldier. These communications will not give sufficient granularity to the complexity of emotion found when operating amongst the people within the three-block war.

This problem extends still further. As General Lamb noted in his speech to RUSI earlier in 2006, with global media corporations defining our daily information diet and driving the agenda within our homes and living rooms—and where they choose to promote the idea of failure when there has been no swift and easy success—then:

> … this continuous negativity begins to crack the will of the people and in turn the will of our political parties – and the first casualty in this battle will be mission command and its

> battlefield replacement will be an unscripted doctrine of mission control …[12]

The implications to the military are significant. We need to recognise that information operations are not just about the enemy; the confidence and support of our stakeholders are central to the prosecution of expeditionary operations.

Operations today in Iraq, Afghanistan and elsewhere clearly bear witness to these challenges and more. Reassuringly, our commanders returning from operations remain strong supporters of mission command. A common observation is the imperative of communicating the commander's intent, succinctly and in language that is easily understood. One brigade commander emphasised the importance of the staff being allowed to think through and therefore buy into the plan, frequently coming up with surprising and useful ideas in the process. He was acutely aware of the temptation for a senior headquarters to meddle in commanding officers' business to the extent that he put a sign up above the plans table saying 'Am I doing Battlegroup Business?' If the answer was yes, then the paragraph being worked up would be deleted. Similarly, a battlegroup commander recorded mission command as being a particular strength:

> Strengths: The ability of commanders at all levels to execute mission command and to have the confidence, through an understanding of commander's intent, to take the initiative and do what is required to achieve the mission, even when they are stepping outside areas of traditional competency'.[13]

In his view, the standard of education and training of commanders enabled them to execute mission command with confidence in themselves and their subordinates. In the vast majority of cases, this

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[12] Personal notes from General Graeme Lamb's lecture to the Royal United Services Institute, London.

[13] Post-activity report (classified).

confidence was fully justified, with subordinates delivering all that was expected and far more. Failures, although not unknown, were rare.

A General Officer Commanding reported on the particular challenge presented by multi-national operations, where, during a seven-month tour, nearly every contributing nation changed their numbers and methods of operation. However, there was a unified mission and there were times when he simply resorted to poking people in the chest and telling them to get on with it. Provided that the differences in national characteristics were understood, then there was no issue: after all, soldiers are soldiers. He said:

> I couldn't reach forward to other multinational forces and expect them to operate in the British way; some nations are better, more robust and more responsive than others. The main players I had were the Australian Battlegroup (who had different ROE), the Danes (who were broadly similar), and an Italian Brigade (who were going to be out by Christmas). However, I had no great frustration with them; I just told them what I wanted them to do, gave them broad guidelines and then let them get on with it. Within the national limits that were imposed over things like sharing intelligence, it worked pretty well … [14]

Similar two-star advice has been given on the importance of mission command being properly understood and applied from top to bottom. To quote GOC 1 Armoured Division on Operation TELIC 1:

> … you must remember that mission command starts at the top. If I hadn't been given freedom of action then it would have been very difficult for me to pass it down. I suspect that at the tactical level we are fully signed up to mission command. But it is at the strategic level where most of the interference occurs. mission command only works if
>
> - You're allowed to
> - If you understand the intent, the plan and your part in it and I mean really understand … Only then does mission

[14] Report from General Officer Commanding, Multinational Division – South East (classified).

> command really work. Mission command needs directive control; the directive sets the scene, it directs the planning, it gets the mindset

To conclude, the Ministry of Defence is clear about what it needs of its armed forces: 'battlewinning forces … fit for the challenge of today; … ready for the tasks of tomorrow; … capable of building for the future.'[15] To win battles, we require soldiers with confidence and courage. That courage and confidence has to cover all three blocks and comes from what the soldier is born with, from knowing his job, and from knowing and trusting those with whom and amongst whom he works. He gets there by practising the routine until it is second nature—by being trained robustly across all Three Blocks. He gets there by having his horizons broadened so that he can gain the necessary understanding to make sure that his actions match the context both locally and more strategically—and again this can only come from training and education. He gets there by having his worth underlined and supported by what he does and who he does it for. There is a premium, therefore, on building the band of brothers early and training them together. Where we put teams together at short notice, we should not be surprised at the loss in flexibility and effectiveness that will result.

For the commanders, we are clear that we need to find the balance between direction and delegation, but recognise the dilemma that modern communications can tempt commanders to over-control. Moreover, when communications fail, we face the danger of an over-reliance upon technology. The philosophy of mission command must therefore endure. Commanders must define their missions with great care and ensure widespread and genuine understanding of their intent, and they must provide appropriate resources for their subordinates but delegate authority wherever feasible to encourage freedom of action and promote initiative. In essence, we must continue to tell subordinates what to do, not how to do it.

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[15] United Kingdom Ministry of Defence, *Strategic Defence Review*, July 1998.

Chapter 4

The Essential Thing: Mission Command and its Practical Application

Lieutenant Colonel Roger Noble

> The essential thing is action. Action has three stages; the decision born of thought, the order or preparation for execution, and the execution itself. All three stages are governed by the will. The commander will tell them (his subordinates) what he considers necessary for the execution of his will, but no more, and he will leave them freedom in the manner thereof which alone ensures ready co-operation in the spirit of the whole. There will always be details in which a commander must just hope for the best.
>
> General Hans von Seeckt, 1930[16]

Success now, as it always has, rests with humans and the links and relationships between them. A human command system that generates 'decision[s] born of thought' and provides a robust freedom to act will enable military organisations to seize opportunities and perform in a coherent, coordinated decentralised manner. Systems based on centralised direction and rigid controls are not sufficiently adaptable. No amount of technology will 'fix' the weaknesses of the centralised approach. Humanity, reality and the 'astonishingly complex environment'[17] will simply not allow it. Armies must focus on people, mission command and 'the essential

[16] General Hans von Seeckt, *Thoughts of a Soldier*, Ernest Benn Limited, London, 1930 pp. 123–30.

[17] Lieutenant General J.P. Storr, 'Command and Control within the Land Component', *Journal of Battlefield Technology*, Vol. 3, No. 1, March 2000, p. 19.

thing'—enabling coherent, focused action in accordance with 'the spirit of the whole'.

This paper is focused on how to enable 'the essential thing' at battle group or unit level. The first Al Muthanna Task Group (AMTG1) is used as a relevant contemporary operational case study.[18] It is one example of the type of modern, complex and chaotic operational environments faced by Australian troops deployed around the world today.

The first section of this paper will describe why mission command[19] is the logical, optimum and, perhaps only, practical philosophical approach for dealing effectively with complexity. The AMTG1 case study admirably demonstrates the 'astonishing level of complexity' faced by troops during modern operations. Using the case study as a tool, the key variables that generate complexity will be examined. These include terrain, threats, friendly force composition and mission aims and objectives. The purpose of the examination is to demonstrate and explain why mission command—'decentralised decision making within the framework of superior commander's intent'[20]—is essential to mission success.

The second section will describe how a deliberate organisational framework can be fashioned to foster and support the application of 'mission command'. Again the AMTG1 experience will be used to provide practical examples of the framework. The paper will describe the key intellectual, moral and physical components of a mission command framework at battle group level. The primary value of this paper is as a practical, if imperfect, mission command case study and discussion generator. My firm conclusion is that

[18] From 24 April 2005 until 10 November 2005, the Al Muthanna Task Group (AMTG1) conducted 24-hour combined arms security operations, including 2359 discrete tactical tasks, for a total of 191 days in the high threat, complex operational environment of southern Iraq. This paper will use the AMG1 experience as one specific case study.

mission command is the key to enabling action and will maximise the chance of success in complexity. Alternatively, micro-management and over-control will almost certainly result in failure.

THE OPERATIONAL ENVIRONMENT: 'WAR AMONGST THE PEOPLE'

We fight amongst the people, not on the battlefield.
General Sir Rupert Smith[21]

Uncertainty, friction, humanity and violence are the enduring characteristics of conflict that combine to deliver complexity.[22] A close examination of the AMTG1 operational environment provides an example of just how complex it can get. The environment is the context in which a force must operate and command systems must function. While each operational environment will be different, the common thread in modern operations is complexity. Following an examination of the case study, the paper will then examine the implications for command and action.

The Complex Environment: the Full Picture

The environment is 'composed of physical, human and informational elements which interact in a mutually reinforcing fashion, leading to

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[19] Mission Command is a philosophy of command and a system for conducting operations in which subordinates are given a clear indication by a superior of his intentions. The result required, the task, the resources and any constraints are clearly enunciated; however, subordinates are allowed the freedom to decide how to achieve the required result. Department of Defence, Land Warfare Doctrine 0.0, *Command, Leadership and Management*, Australian Army, Canberra, 17 November 2003.

[20] Storr, 'Command and Control within the Land Component', p. 19.

[21] General Sir Rupert Smith, *The Utility of Force: The Art of War in the Modern World*, Allen Lane Penguin Books, London, 2005, p. 269.

[22] Australian Army, Future Land Operating Concept: *Complex Warfighting*, <http://www.defence.gov.au/army/lwsc/Publications/complex_warfighting.pdf>, p. 4.

extremely high-density operating environments and enormous friction upon military operations'.[23] Understanding 'the full picture' relies on appreciating the combined impact of the physical, human and informational environment. The AMTG1 case study 'full picture' provides a practical example of the context in which modern forces are required to act.

Terrain

Physical Terrain

Modern Western forces are increasingly operating in complex physical terrain as the threat groups use the environment for support and to hide, survive and strike at our weaknesses. The physical terrain encountered by AMTG1 in southern Iraq was diverse. The Al Muthanna Province includes wide variations in physical terrain—from close country along the banks of the Euphrates, to highly urbanised centres in the major cities, and pure, open sandy and rocky desert. For mobile security forces, transition through terrain types was a constant tactical challenge.[24] The physical terrain represented a continually changing, irregular jigsaw in and over which all operations had to be conducted.

Human Terrain

The social and human dimension of a society is the central source of complexity. The human terrain of southern Iraq is a tremendous example of chaotic intricacy. The AMTG1 Area of Operations (AO)

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[23] Ibid, p. 6.

[24] Patrols of the AMTG would encounter these physical environments, and combinations of all three, within five kilometres of the forward operating base. Large infrastructure, such as highways and bridges, combined with significant man-made and natural obstacles, created a complex physical environment where choke points, routes, and observation points combined to create a complicated tactical jigsaw for both friendly and threat forces. It is difficult to imagine a physical environment more different from Australian training areas or one that could provide a greater series of rapid fire tactical challenges to any mobile security force.

was conducted amongst a population of 500 000 people who were linked by an extremely complex Arabic maze of shifting and interrelated cultural, social, political, religious, tribal and family influences. It is markedly different to Australia and was utterly alien to the majority of our troops. At the most basic level, the language was different and our organic expertise in Arabic was limited. Cultural norms and conduct, such as the role of women, differ noticeably to that encountered in the West. In the constant cross-cultural exchange, a simple mistake could become an obscenity without the 'guilty' party even being aware of the error. Religion is a powerful influence, and religious leadership is closely entwined with political leadership. Located far from Baghdad, Al Muthanna is intensely parochial and regional in character. Local geography is important and the cities and towns of the Province have unique interests, organisations and identities. Tribal influence is crucial and pervades all aspects of daily life and action.[25] The Province is politically fluid, active and prone to overheating at short-notice.

[25] For example, any police response to an incident would begin with an assessment of which tribes were involved in order to ensure the responding police could moderate the situation rather than complicate it through their own tribal identity. After 6000 years, an enduring, unwritten heritage of interaction between tribes, clans and families played a role in all social interactions.

At the time, over 13 political parties were active in the Province, as well as a number of illegal organisations, such as armed militias and criminal organisations. A full range of new and evolving government, judicial, security and bureaucratic institutions were active and evolving within an incomplete and uncertainty policy framework. This complex human system, embedded in a jigsaw of complex terrain, was the AMTG1 'battlefield'.

Human complexity is not only a function of the domestic society. External stakeholders import their own significant contributions to complexity. First among these in the AMTG1 case study was the Multi-National Force (MNF). Like all large coalitions, the MNF consisted of a vast array of national troop contributions with different capabilities, characteristics and missions.[26] Inside the AMTG AO, Australian, British and Japanese troops were overlaid, using up to three languages, each seeking linked but not identical goals. An extended range of government and civil agencies, such as various national diplomatic services and aid agencies, operated across the AMTG1 AO. Within this mix, there were also a limited number of independent non-government agencies. All these stakeholders were in constant, often completely independent,

[26] AMTG1 flanking formations included troops from five nations who spoke four different languages. Liaison took place across three international and four Provincial borders. Two major Coalition routes ran through the AMTG AO, which resulted in a constant transit of almost all the remaining troop contributing nation force elements.

interactions with Provincial and Iraqi central government agencies. Amongst the milieu were private contractors, which range from large-scale logistic providers through to a multitude of private security detachments. This extended, external, and complicated mix fed directly into the local human system.

Informational Terrain

The final aspect of environment was the informational system. While the remote, regional, rural Province of Al Muthanna struggled with the provision of the most basic essential services, it was fully networked into the global communications grid.[27] Press networks were ever-present. While Western press were scarce, they employed a number of local 'stringers' who were armed with handheld video cameras and an open licence to rove. The Eastern press, notably Turkish satellite television, were on the ground and active. The Province had its own newspapers and television station. The sum result of the informational terrain was constant coverage and a network potentially linking all activities into the local, national and global pool of information in 'real time'. For the friendly force, and almost everyone else, the eye of this network was constant and persistent. Given its instant, unpredictable feedback into the environment, the information network was capable of creating an unpredictable and diverse range of second- and third-order effects.

The Threat

> And what are the clothes of the Mahdi Army? So that I can distinguish them from others. They don't have a specific

[27] For example, most male locals owned at least one mobile phone and the network was modern, involved multiple service providers and offered extended local and international coverage. Cable television networks fed directly into the Province and could be found as far afield as the most remote desert police station. Internet services were also widely available.

> uniform. They are people gathered by love, and faith is their weapon. [28]
>
> Moqtada al-Sadr,
> Spiritual Leader of the Mahdi Army Militia

The threat groups confronted on many modern operations, including major combat operations, are increasingly irregular, unconventional and lethal.[29] The threat groups faced by AMTG1 fit this model closely. Across southern Iraq, threat groups not only operated 'amongst the people'; more often than not, they were 'the people'. The threat was almost impossible for the AMTG1 to identify physically before it commenced offensive action and, if Moqtada al-Sadr's comment above is to be believed, even he had difficulty identifying his own forces. Local and regional extremist groups, such as the Mahdi Army, pursued a variety of agendas through a combination of political, social, cultural and military means. In the south during 2005, the Coalition faced no concerted al-Qaeda–led Sunni extremist insurgency.[30] Nevertheless, the possibility of such an insurgency remained a constant factor to be considered and countered. Threat elements pursued a classic guerrilla methodology married to the power and lethality of modern technology.[31] Threat

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[28] 'An Army of One: Iraq's Moqtada al-Sadr on his men, his mind-set and when America should go', Interview by Scott Johnson, *Newsweek*, 8 May 2006, pp. 22–3.

[29] For example, during the 2003 invasion of Iraq, Coalition forces met fierce resistance from irregular forces and only experienced limited direct confrontation with conventional forces. Studies such as *Cobra II* reveal that this was unexpected and that Coalition forces, especially at the operational level, were slow to adapt to the reality of the threat. M. Gordon and B. Trainor, *Cobra II: The Inside Story of the Invasion and Occupation of Iraq*, Atlantic Books, London, 2006.

[30] This was largely due to the efforts of those in the local community who were determined to prevent mass casualty attacks and extremist violence mounted by foreign fighters or Iraqis from other regions—all collectively viewed as 'outsiders' by the local majority.

[31] Threat groups employed a range of highly lethal weapons, such as highly sophisticated Improvised Explosive Devices (IEDs) and improvised indirect fire rocket attacks, in order to maximise their impact and minimise their chances of being decisively engaged. In all actions, threat groups exploited

tactics emphasised dispersion, 'fluidity of force', low profile and avoidance of battle.[32] They operated 'like a vapour [that would] offer nothing material to the killing'.[33] AMTG1 faced a complicated patchwork of heavily armed, largely local militia forces operating literally 'amongst the people'. It was war by the few, but was dependent on the support of the many.[34] Interaction with the threat took place in the context of the complex environment.

Friendly Force Composition

Complexity is not only a by-product of the physical, social and informational terrain and the threat profile. Modern security missions require the case-specific creation of combined joint interagency task forces (JIATF) to achieve designated missions within a complex environment. These teams aim to 'incorporate all elements of national power in an integrated framework, tailored and scaled to the requirements of specific a mission'.[35] The intent is to build a force that is able to 'control the perceptions and behaviours of specific population groups' and not merely apply force.[36] JIATFs

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the environment, local support and knowledge in order to cover, assist or allow their actions to take place.

[32] During the six months of the AMTG1 tour, it is worth noting that, of the seven deliberate threat attacks against Coalition forces in Al Muthanna, only two involved direct fire ambushes. Of these only one was assessed to be a deliberate, planned attack, while the other exploited a fleeting target of opportunity.

[33] T.E. Lawrence, *Seven Pillars of Wisdom*, Wordsworth's Classics of World Literature, Ware, Hertfordshire, 1997, p. 182.

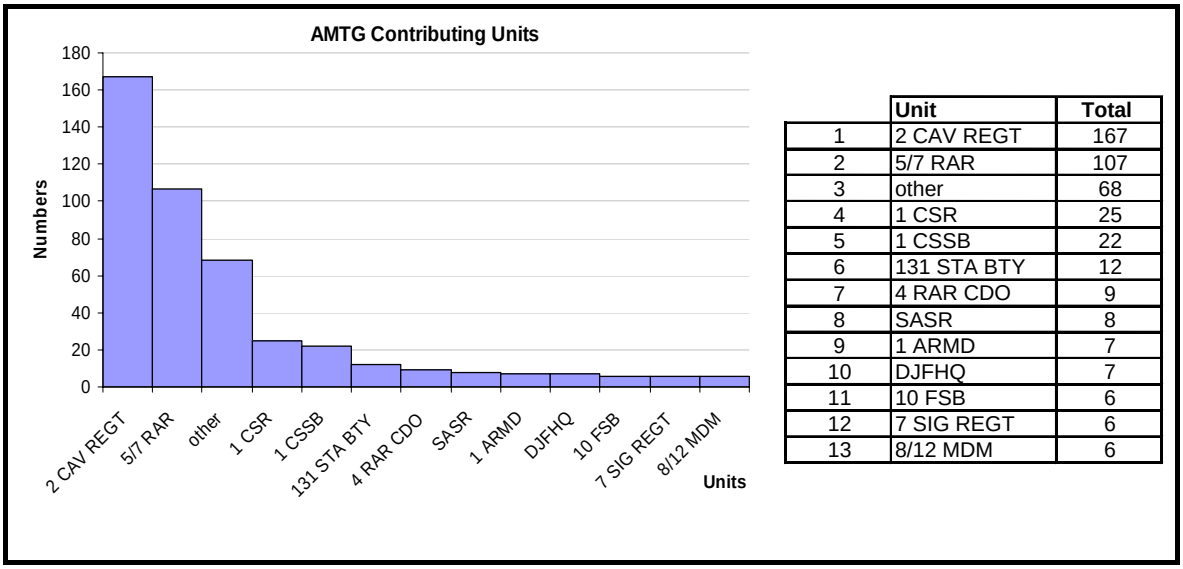
[34] B.H. Liddell Hart, *Strategy*, Meridian, New York, 2nd revised ed, 1991, p. 367. In 1954, Liddell Hart published the last version of his classic book on strategy with an additional chapter devoted to Guerrilla War. In it he describes the classic guerrilla or subversive strategy. It demonstrates that this approach is not new and remains relevant to modern operations in Iraq. He assessed that this approach 'tends to be most effective if it blends an appeal to national resistance or desire for independence with an appeal to a socially and economically discontent population'. AMTG1, therefore, confronted a 'classic', if fragmented, guerrilla or subversive threat strategy.

[35] *Complex Warfighting*, p. 14.

[36] Ibid.

are, therefore, rarely standing organisations or groupings. They are custom-made and case specific.

AMTG1 is one example of a modern battle group–level JIATF. It was not a standing organisation and was non-traditional in structure. It incorporated a broad range of capabilities drawn from joint, Defence and national resources. It consisted of 450 personnel from two Services, 56 Army units and 19 Corps. The considerable diversity is reflected through an example table shown below at Figure 1, which shows the sources of AMTG1 Army personnel. The force also included a selected range of specialist civilian personnel. AMTG1 was a diverse, unique grouping of capabilities that were rapidly concentrated, formed and deployed.[37] The composition and rapid deployment of a custom-made force was essential, but generated unavoidable internal complexity and friction.



	Unit	Total
1	2 CAV REGT	167
2	5/7 RAR	107
3	other	68
4	1 CSR	25
5	1 CSSB	22
6	131 STA BTY	12
7	4 RAR CDO	9
8	SASR	8
9	1 ARMD	7
10	DJFHQ	7
11	10 FSB	6
12	7 SIG REGT	6
13	8/12 MDM	6

Figure 1: Army Units contributing more than five members to the AMTG

[37] Deployment time from Government announcement in Australia to the commencement of operations in Iraq was 10 weeks. The AMTG1 drew personnel and equipment from across Australia.

THE COMPLEX ENVIRONMENT: THE IMPLICATIONS FOR COMMAND

For the soldier on the ground, the environment is quite simply a sea of complexity. Situations rapidly develop, constantly change and demand immediate case-specific responses. The problems encountered are never purely military or tactical; they are also social, cultural, legal, moral and political. Drills and templates provide assistance and guidance, but success requires thinking, decision-making and adaptation to the specific circumstance. A constant, recurring theme of modern operations is that complexity means that 'the possible permutations of all … interactions are innumerable'.[38] Success, therefore, relies on shaping and influencing outcomes and then quickly adapting to and exploiting those outcomes. War amongst the people requires soldiers who are face to face with the people to have the will, means, authority and freedom to act to achieve the mission. The environment demands mission command.

Missions and Methods

> AMTG, as part of UK led Security Sector Reform, is to conduct security operations and provide training and adviser support to the Iraqi Army in AL MUTHANNA province for at least 6 months from 3 May 05 in order to enhance the security of the Japanese Iraq Reconstruction and Support Group and support the Governorate of AL MUTHANNA province to realise the process of UNSCR 1546 and transition to Iraqi self reliance.[39]
>
> **AMTG1 Mission Statement**

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[38] Major J.P. Storr, 'Alternative Concepts For Battlefield Command And Control Organisations', United Kingdom Ministry of Defence, paper presented to the 1999 Command and Control Research and Technology Symposium, Command and Control Research Program, US Naval War College, Rhode Island, 1999, downloaded from: <http://www.dodccrp.org/events/1999_CCRTS/pdf_files/track_5/026storr.pdf>.

[39] AL MUTHANNA TASK GROUP (AMTG-1) Operations Order 02/05 OP CATALYST, dated 25 May 2005. (The full document is SECRET)

Missions on modern security operations almost always seek objectives that are beyond purely military results. This has the effect of broadening the range of tasks to be performed, increasing the types of capabilities that are deployed and requiring the employment of sophisticated methods that are tailored to the complex environment.

The AMTG1 mission (detailed above) provides an example of a mission that generates a need for sophisticated and disciplined methods applied by a force armed with a range of capabilities. AMTG mission success would ultimately depend on collective local community opinion.[40] The focus was not the destruction of the threat, but rather the defeat of their intent to use illegal and violent action to achieve their ends. Success could be achieved as much by indirect means as through any clash of arms. The AMTG1 was, therefore, unavoidably required to execute a broader range of tasks than those required of a purely conventional military security task. It also required a sophisticated sensing of changes in the environment and quick adaptation to exploit opportunity. While the case study is unique, it bears similar traits to missions and requirements underway from East Timor to Afghanistan.

The nature of modern missions and complex environments demands decentralised action and adaptability. For example, the AMTG1 environment and mission demanded that no set patterns be developed in order to dislocate the threat. The force was required to operate in dispersed, small, but powerful groups that could survive and defeat an attack, yet not alienate the locals through unnecessary disruption to, and interference in, their lives. AMTG1 had to

[40] The commanding general viewed the 'consent' of the local populace for Coalition action as crucial to mission success. He assessed that 'consent' was heavily dependent on, and intertwined with, 'the legitimacy and responsibility of the Iraqi government'. Commanding General's Directive To Multi-National Division (South-East), March 2005. (The full document is CONFIDENTIAL)

establish and sustain a continuous, open, face-to-face dialogue with people at every level across our AO. The force, therefore, had to act effectively in a dispersed, decentralised, face-to-face manner.

Decentralised and sophisticated methods, reliant on adapting to circumstance, require a binding 'glue' to ensure that action taken is coherent and directed towards a common end. A centralised, hierarchical system relying on detailed direction from above has limited adaptability, responsiveness or situational awareness to support a force operating in a 24-hour, dispersed, mobile roles. The essential glue that enables coherent action is not a piece of technology or a detailed web of predictive rules, but rather the establishment of an adaptive human system of mission command. The difficult part is establishing a mission command framework that enables effective, coherent action.

Building a Mission Command Framework

Given the importance of adaptability and the pressing need for effective decentralised action, the key issue becomes how best to build a mission command environment? This paper proposes that effective mission command relies on the establishment and nurturing of a mission command framework. The framework must consist of a series of intellectual, moral and physical components that together provide freedom of action and support to subordinates within boundaries.

Intellectual Components

An effective mission command framework relies on a clearly articulated and understood philosophy of mission command. This idea must then be clearly explained and articulated across the entire organisation. For example, AMTG1 had a short description of the philosophy of command that would apply on operations. The philosophy included the five specific individual characteristics

required of the soldiers, non-commissioned officers (NCOs) and officers of the battle group.[41]

The Five Characteristics

Every soldier is to be:

- Mission Focused/Task Orientated
- Imbued with a culture of mission command and a bias for action
- Tactically and technically excellent
- Highly Disciplined
- Adaptable

The command philosophy provided the behavioural rules against which all decisions, plans, training and actions would be developed and then assessed. In AMTG1, action was emphasised as a critical idea and was a mandated behavioural requirement:

> The AMTG must have *a bias for action.* Individuals must independently act to solve a problem and achieve the mission in a *timely* manner based on the available information and resources. Decisive, determined action, based on the commander's intent and targeted against the enemy's critical vulnerabilities must be the hallmark of AMTG operations. Uncertainty is a constant, always act decisively.

A philosophy that describes mission command and explains what is important is the first and critical element of any mission command framework.

Mission Command relies on a clear understanding of the commander's intent across an organisation. The intent must be articulated, explained and updated regularly. This is formally achieved through the promulgation of an operations order. Perhaps more importantly it was constantly reinforced through the 'battle

[41] These characteristics are now included in developing Australian Army cavalry doctrine.

rhythm' of an organisation.[42] Intent became the issue of discussion throughout the organisation. In AMTG1, this was achieved through a variety of formal and informal means. Commanding Officer's (CO) hours with the soldiers would begin with a discussion of the mission, tactics and the threat. Visits, sub-unit training, meals, and tactical operations all provided occasions for commanders (at every level) and soldiers to discuss and understand intent. One excellent example was the regular 'sand table' tactics training held by Combat Team Eagle, where intent was an open forum topic for discussion and suggestion by all ranks. Intent must become a 'living' idea that is a constant topic of discussion, and must be deeply understood.

A clear intellectual accountability framework, understood by all, is vital. Accountability is essential, as it holds subordinates and the entire organisation to the mission. Each individual must be held accountable against his appropriate level of responsibility. Therefore, it is vital to agree on what constitutes an error.

A considered and collective definition of what constitutes a mistake is fundamental. To enable a culture of mission command, a mistake should be defined as a decision made without systematic regard for the commander's intent or the mission. It must not be seen as an action that generates an adverse or negative result. Friendly force action is but one element in a complex system; the end consequences will be the result of multiple inputs and influences. A mistake, therefore, may well be both a decision leading to an action or the absence of a decision that results in a lack of action. It is important to recognise that a failure to act may be as significant as any decision to act. Where the actions are clearly connected with intent but the results are adverse, subordinates must be strongly supported in their actions. The incident or action should be reviewed and analysed with

[42] Daily operations briefs allowed for a continuous update and assessment. Extensive liaison linkages across national and Coalition forces enabled an ongoing assessment of intent.

a view to improving performance. Coaching or retraining may be initiated, or the actions taken may be reaffirmed and validated. Where this definition of a 'mistake' is the norm, and the commander's intent is the yardstick, the organisation will automatically self-correct and adapt at every level to achieve a common purpose. Action is, therefore, likely to be coherent, focused and encouraged. Subordinates will feel empowered to take action in uncertainty when they are certain that it passes the assessment against the intent test.

In AMTG1, the responsibilities for the actions of a force were the responsibility of the immediate commander, who was held accountable against the intent and the mission. Where the commander acted outside the boundaries of, or contrary to, the intent articulated, he would be formally disciplined and/or removed from his post. This was required on a small number of occasions and it was absolutely essential in order to build trust, preserve freedom of action and reinforce a disciplined application of mission command. Conversely, where a decision is taken in accordance with the intent and the mission, the subordinate must be supported and the commander must accept responsibility and 'own' any adverse consequences that arise from that action. This approach grows trust, liberates subordinates to act, and binds every level of action to the mission.

Effective accountability fundamentally relies on systematic command supervision. As a general rule, supervision needs to be constant, multi-level and available to subordinates. It should be helpful and should not be delivered as a superior, audit-style oversight. Importantly, supervision should be personal, direct and detailed. This requires commanders at all levels to operate forward in the field rather than within the security and connectivity of the firm base. This ensures that the key supervision is located in the optimal location for any given plan.

Moral Components

Trust is the essential moral component of mission command. Commanders must accept and own risk in order to demonstrate trust. As trust must flow both down and up, it depends on knowing individuals and understanding how they think and act.

As General von Mellenthin accurately observed, 'Commanders and subordinates start to understand each other during war … the better they know each other, the shorter and less detailed the orders can be'.[43] This proved to be an observation relevant to AMTG1. The development of trust and understanding was facilitated by a combination of supervision and close interaction between commanders at every level. This is a *face-to-face*, human business rather than a hierarchical, formal process achieved through constant email contact. AMTG1 deliberately lived, worked and went on leave in its small team groupings—both section and patrol. Trust develops and spreads like a virus—upwards, outwards, downwards and cross ways. Trust cannot be mandated, directed or wished into being.

Where trust is breached, or not developed, personnel must be removed or placed in positions where close supervision is possible or where the risks are minimal. Breaches of trust cannot be tolerated, no matter how small, as it is the true currency that underpins all mission command-based organisational action. On a number of occasions, breaches of trust within AMTG1 resulted in disciplinary action and the removal of personnel from appointments, or modifications to the level of freedom of action assigned. Failure to act on breaches of trust, at any level, will seriously undermine mission command. This means that the rule must apply to all, equally, top to bottom. Rank, age, and specialty can offer no sanctuary.

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[43] DePuy, *Balck and von Mellenthin on Tactics: Implications for NATO Military Doctrine*, Universitaet der Bundeswehr, Munich, December 2004, p. 19.

Physical Components

A physical control framework is required to support effective mission command. A control framework must be established to provide security, confidence and support to junior commanders. The control system must assist decision-making and command. It must be responsive and adaptable to changes. Commanders must be empowered to modify it and there must be a constant dialogue on the boundaries of action and control measures. Senior commanders should speak directly and regularly to junior commanders. The vertical hierarchy and position is less important than the mission: when they know they need to, junior commanders must be encouraged to speak directly to senior commanders. The key to an effective mission command is the construction of a co-ordinating framework that is highly accessible to subordinates, responsive to the environment and capable of adapting quickly.

Empowerment of the staff to make decisions, support subordinates and to support the execution of the mission is the aim of an effective control system. In AMTG1, the S3 became the lead control officer. His core business was the regulation and management of the commander's intent and the execution of the mission. Jokingly, and appropriately, he was called 'The Intent Policeman' and constantly patrolled the mission and intent. In AMTG1, the S3 did not act as the deputy commander, but was instead tasked with building, servicing, repairing and modifying the control framework. He was a key adviser to all commanders and did not compete with them. All branches of the BGHQ staff effectively served the operations staff and the S3. They were vital to feeding and sustaining the framework, keeping it up to date and triggering the need for change or adjustment. The tools of the staff were fragmentary orders, control measures and the transmission of key information between commanders, across the battle group and outside to the broader Coalition.

Formal orders provide the behavioural rules and guidance to allow subordinates to act inside an agreed framework and give them freedom of action. In AMTG1, the operations order formed the bedrock operational guidance and 'law' that guided all behaviour and decision-making. It was effectively a 'one-stop shop' for formal policy. The AMTG1 operations order included issues as diverse as detainee policy, the Rules of Engagement (ROE), safety policy, training policy, compensation and act of grace payments and discipline. It was revised and adjusted regularly, with five separate versions being issued. Against this order were issued Fragmentary Orders. All tactical and administrative activities were instigated and covered by formal written orders. When time was limited, orders were issued verbally and the written order followed shortly thereafter. This methodology empowered the staff to make actions against the formally stated intent. As they were charged with executing the operations order, it needed to be comprehensive enough to guide decision-making. Orders were to be complied with and were written to confirm intent, describe freedom of action and guide behaviour and decision-making.

The operations order should set the rules for behaviour rather than focus on developing predictive details on specific actions in certain circumstances. In the case of AMTG1, behaviour and responses to unexpected situations were critical. The AMTG1 needed to operate in a low profile way, so the AMTG1 was always seeking to be in 'the corner of their eye' rather than directly in the faces of the local people. All activity had to be conducted against the reality of the local cultural norms, not in accordance with our own world view. From this, 'consent' could be built. Therefore, the operations order and intent emphasised 'rules of behaviour' being applied on a case-by-case basis. The three rules are:

The Three Rules

Always Low Profile—'Corner of their Eye'
Always Culturally Aware
Always Highly Disciplined

When followed, even in difficult circumstances and against powerful threat information operations, respect and support would almost always grow. Subordinates could take the rules and apply them, as required, to whatever particular circumstance arose.

The organisational battle procedure must serve subordinates and act to continually update, assess and modify intent and control arrangements as required. AMTG1 evolved a systematic operational cycle that focused on a constant assessment and update of intent and adjustment of the control framework. This became the primary purpose of the Daily Operations Update, which was a 'short', daily operational assessment and discussion forum. This was supported by a deliberate seven-day planning cycle that identified and resourced known tasks seven days out. This provided maximum warning and planning across the sub-units. The effect of a disciplined operations and planning cycle is a coherent, constant control across a battle group. It supports and enables decentralised, detailed execution, and supervision at combat team level and below. Ideally, it should ideally be focused downwards and on execution.

The development of effective Standard Operating Procedures (SOPs) reduces friction and allows rapid adaptability to changing situations. SOPs should therefore be threat-, environment- and capability-driven. They must be discussed, argued and improved. In AMTG1, the operations staff owned the SOPs and modified them in consultation with the entire battle group, most notably the combat teams. The duty of the combat teams was to 'road test' SOPs and to consistently question and improve them.

Shared situational awareness, supported by an effective command information system (CIS) network, is critical to maximising the chances of coherent action. A mission-command control framework must have the aim of furnishing its people in the field with timely and effective intelligence that leads to high levels of situational awareness. Navigating the flood of information, finding the key pieces and interpreting them effectively are not simple tasks. This process requires a careful, intimate linkage between the intelligence and operations staff, both of whom must unwaveringly serve all commanders from patrol to battle group level. A *culture of service* by the staff, both upwards and especially downwards, is essential and is rarely automatic. This is an old idea. To quote General Sir John Monash: 'The staff officer is the servant of the troops … this was the ritual pronounced at the initiation of every staff officer'.[44] The development of a responsive intelligence cycle and process that serves the soldiers in the field requires disciplined staff processes, close cooperation and dogged, hard work by battle group level staff officers who must be constantly supported by close-command supervision.

The control framework must have at its heart an effective technical network of communications. While there is no substitute for face-to-face orders, a supporting communications network is a key component to enable mission command. At battle group level, secure voice is critical, as command and intent can be forcefully transmitted through language, tone and expression. Email alone is therefore an inadequate method of communication. AMTG1 was equipped with a range of effective systems that enabled mobile, secure communications. Redundancy is important; as are multiple communications means. Communications will break down due to

[44] General Sir John Monash, *The Australian Victories in France in 1918*, Hutchinson and Co, London, 1920, p. 295.

both the threat and the environment, and the control framework must support action when there is no communications.

A strong organic discipline and personal support system is the backbone of any effective mission-command system. Ideally, discipline on operations becomes the business of all ranks that 'self-police' and sustain collective discipline without constant command intervention. Discipline is everyone's business, not just officers or senior non-commissioned officers (SNCOs). The discipline system must be simple, clear, timely, just and operate without favour. A key component, often overlooked, is the design of 'the rules' and their assigned importance. If rules are broken, discipline must be enforced. It is, therefore, vital that the rules are sensible, relevant and linked to mission outcomes. Any rule that commanders are reluctant to enforce should be modified or removed. Like SOPs and the other components of the control framework, the rules governing conduct must be carefully designed and constantly assessed. If the rules are sensible and enforced without fear or favour, they promote credibility and allow trust to develop.

The discipline system must be supported by a command-driven welfare network in which everyone supports each other. Key appointments, such as the doctor and padre, are vital as they perform the role of both semi-independent morale (and discipline) 'thermometers' and advisers to all. High operational tempo and limited opportunities to rest demand a careful, constant assessment by all deployed personnel. This is the core business of commanders. In AMTG1, the use of enforced rest and short-term job swaps were two simple methods employed to manage discipline and morale. The authority of formal military discipline is the ultimate legal power that holds all to the mission and the required standard of conduct. It must be both credible and strong.

Systemic learning through constant assessment linked to training enables organisational adaptation. Training is the mechanism to formally improve, adapt and codify modified action. The retention of core skills and individual and collective proficiency are critical to confidence and trust. Training, revision and the testing of new and emerging ideas must also be part of the operational cycle. This requires not only familiar training (such as weapons handling and shooting), but a constant focus on tactical decision-making. The use of the tactical quick decision exercise, whether formal or informal, forces a debate on intent and action. Over time, this style of training links approaches and thinking while simultaneously generating critical analysis of current methods and tactics. For example, AMTG1 used deployed tactical low-level simulation and deployed Coalition (and DSTO) operational analysis teams to support assessment, learning and adaptation. Part of a mission-command control framework must be a deliberate, planned training program linked with a culture of formal and informal discussion and learning.

As mission success is the focus of mission command, an organisation needs to understand whether or not it is on the path to success. This requires the careful design of measures of effectiveness and a rigorous performance tracking methodology. This element of a control framework was initially missing for AMTG1 on deployment and answers were not readily found in doctrine. Over a period of time, a system of assessing progress was developed. This modified system allowed for the measuring of progress and the adaptable allocation of a full range of resources and capabilities, (kinetic and non-kinetic) to influence outcomes. This process also demanded that AMTG1 gain an understanding of the complex environment in which it was operating. What action induced what responses? What were the levers of influence in society? How was local consent reinforced or undermined? This tracking and auditing function is vital (for both positive learning and adaptation) in order to achieve the desired result.

CONCLUSION

In the 21st century, action remains the essential thing. Yet there are tremendous pressures to attempt to centrally control, direct and limit action. There is often a temptation to delay action, or indeed not act at all, given both the intense scrutiny and the potential adverse and unpredictable outcomes. This is not the path to success in complexity and against threats that recognise and exploit the operating environment and constraints in and under which Western forces operate. Effective, focused action at the lowest level remains the key to success. A network of intent that binds all to the mission is the logical and optimal approach to the challenge of complexity and chaos. It also allows a force to seize and exploit fleeting opportunities and to target the vulnerabilities of hard, committed and intelligent adversaries.

The key to effective, focused action is mission command. The philosophy of mission command must be believed and nurtured. To be effective, it must be built on the intellectual components of clear intent, trust and accountability. The central moral component is trust. A physical control framework must also be established to support decision-makers at every level, especially those in the midst of chaos and in close contact with the adversary. While every circumstance is unique, this paper has sought to identify some of the enduring components common to any physical, moral and intellectual framework of mission command. Mission command offers one way to enable effective action and to create a human network that 'ensures ready co-operation in the spirit of the whole'.

Chapter 5

Systems Thinking—Considerations for the Australian Army

Colonel Warwick Austin and Colonel Peter Clay

The focus of this paper is to stimulate thought on the applicability of a ‘systems approach to thinking’ for the Australian Army for resolving operational- and strategic-level problems. While this approach has utility in the complex warfighting environment for the Hardened and Networked Army, it also has broad applicability to all complex problems. Systems thinking recognises that not all problems have a single, straightforward solution, and that the feedback and interaction of solutions change the problemspace, requiring iterative systemic adaptation.

Problems are categorised into two key domains: ‘tame’ and ‘wicked’ problems. ‘Tame problems’ are those with definable solutions, like solving equations or applying an engineering solution when building a bridge to enable an M1A1 tank to cross. Tame problems lend themselves to a scientific reductionist approach and are ideally suited to application of linear planning tools. Conversely ‘wicked problems’ do not have definable solutions and require an entirely different approach to their resolution. Wicked problems are often couched within ill-defined and shifting goals. With wicked problems, a reductionist approach can be inappropriate or, even worse, dangerously misleading. There are a number of key characteristics of wicked problems that are important to understand.

Wicked Problems

Firstly, there is no definitive formulation of a wicked problem. This is because defining a problem is highly personal and everyone will have a different view and perspective. Secondly, wicked problems have no stopping rule. With 'tame problems' there is a definable end to resolving the problem. For example, our previously mentioned bridge builder has a fixed endstate and can easily measure his or her success when the tank crosses—or does not. This is not the case with wicked problems because they are inherently complex, open-ended and subject to change.

Thirdly, every wicked problem is essentially unique. There may be a range of similar problems that provide a frame of understanding; however, one of the important judgements is understanding that a problem truly is 'wicked' and therefore there is no template that can be followed prescriptively. Fourth, solutions to wicked problems are not true or false, but good or bad. 'Tame problems' provide solutions that can be measured by others with similar or better technical expertise—not so with wicked problems. There will be many possible solutions, therefore resolution of a wicked problem will never have uniform agreement but will be judged as 'good' or 'bad' or 'good enough'. Fifth, there are no immediate and no ultimate tests of a solution to a wicked problem. For 'tame' problems, the solution can be assessed almost immediately. Wicked problems cannot be judged this way as the reaction from an action cannot be accurately predicted until after the action has occurred and the full range of repercussions are understood.

Sixth, every solution to a wicked problem is a 'one shot operation'; because there is no opportunity to learn by trial and error, every attempt counts significantly. Every action to resolve a wicked problem has consequences that cannot be undone, attitudes and opinions will have changed, lives will have been affected. Therefore the conventional

military truism that 'any decision is better than no decision' is not necessarily the best approach. Seventh, wicked problems do not have an enumerable (or an exhaustively describable) set of potential solutions, nor is there a well-described set of permissible operations that may be incorporated into the plan. Pattern-based learning has limited utility with wicked problems because each problem is unique, and there is no way of knowing whether all of the potential resolutions have been considered. Eighth, every wicked problem can be considered to be a symptom of another problem. The level that a problem is resolved is therefore an important aspect of judgement when considering wicked problems. It is crucially important to ensure only the right level of problem is addressed.

Most operational and strategic problems are 'wicked'. While we intuitively think about problems in theatres like Iraq, Afghanistan, East Timor and the Solomons, there is also wickedness in 'non-operational' problems, such as the implementation of the Hardened and Networked Army. It is only the 'degree of wickedness' that is open to debate.

Thinking about Thinking

Having accepted the wicked nature of many military problems, we will now briefly examine linear and natural thinking approaches. Military training primarily centres on the application of a *linear approach* to problem solving as shown in Figure 1 (overleaf).

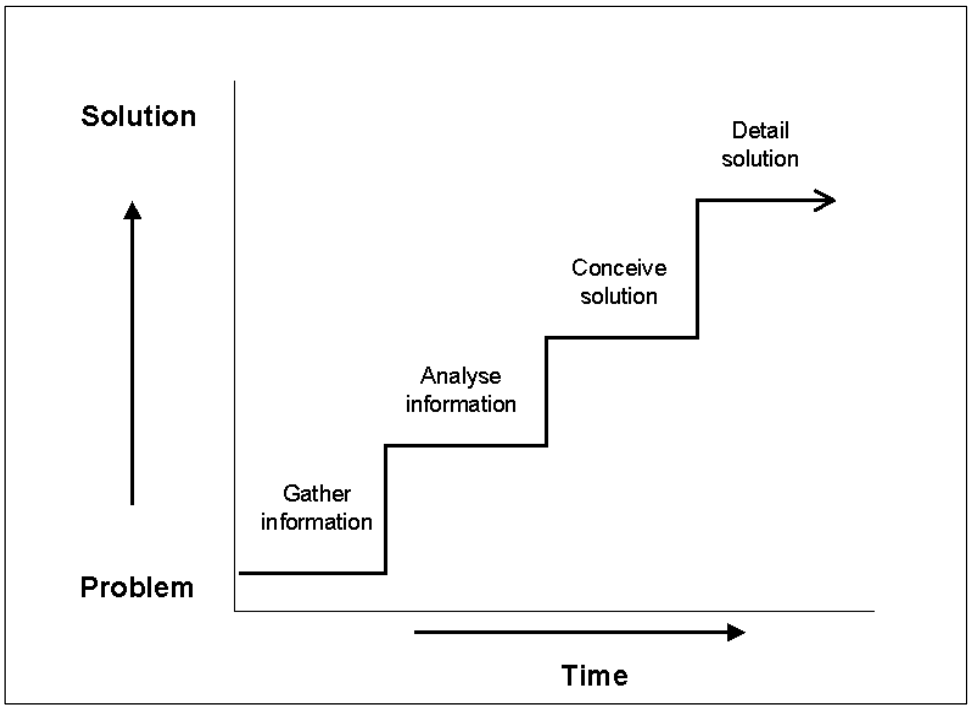

Figure 1: The linear problem-solving process

This cascading methodology is familiar because we have been brought up with the Military Appreciation Process, a classic linear approach to problem solving. With tame problems, or directed planning activities, a linear approach clearly serves the purpose. The question is how good is a purely linear approach when resolving wicked problems at the operational and strategic levels?

In contrast to prescribed linear thinking approaches, the human mind resolves problems in a rather different way. We start by trying to understand the problem, but quickly jump to conceiving potential solutions before jumping back to problem formulation (Figure 2). Depending upon the availability of time, this pattern of problem definition/solution continues until time runs out, in which case the resolution is the best within the time available, or solutions run out, in which case the solution is the best the individual can devise given the circumstances. Everyone applies this on a daily basis.

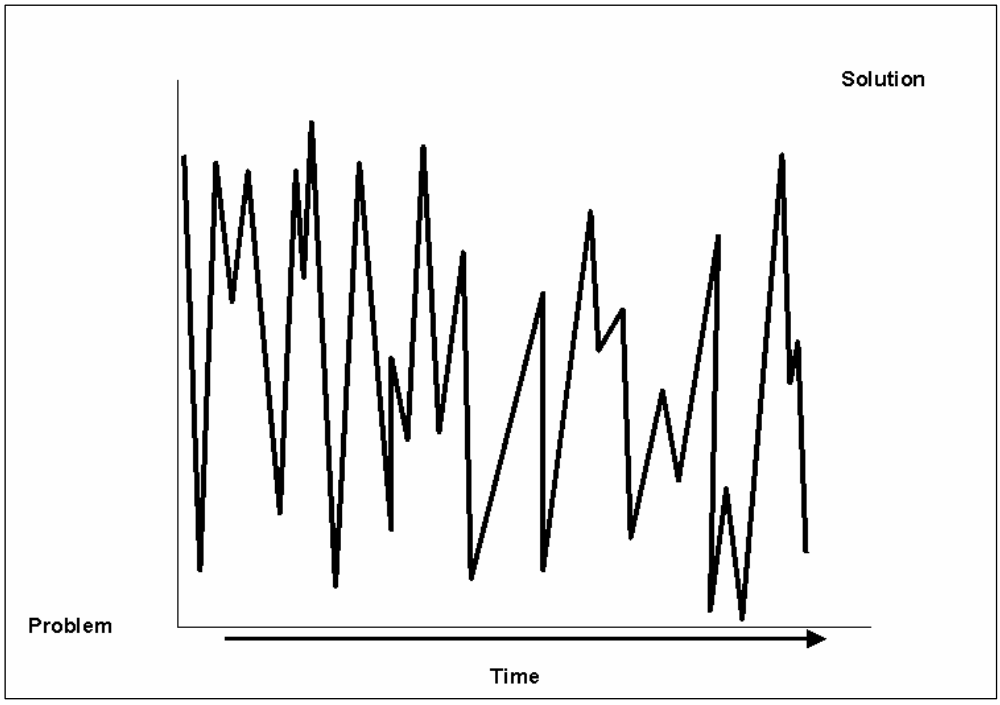

Figure 2: Natural thinking processes

One point to consider is whether you make your decision too early? Or do you make your decision without drawing on the natural thinking processes of others?

While we see a linear approach as suitable for planning towards specific outcomes, there are some weaknesses observed in applying a 'purely' linear planning process to problem resolution at the operational and strategic level. Significantly, United States and Israeli defence forces are recognising the limitations of linear thinking—'what to think'—and seeking approaches that lead to 'how to think'. The need for flexible and adaptable thinking is reinforced when considering the more esoteric aspects of 'systems theory': a construct that emphasises the inter-relationships and feedback between factors when considering multi-variate problemspaces. Understanding the basics of this theory, combined with a comprehension of 'wicked problems', underpins the need for systems thinking when understanding any complex reality. Combining systems theory with wicked problems creates the methodology of 'systems design'.

Thinking about Systems

To understand systems design it is necessary to have a conceptual understanding of 'systems'. Fundamentally, we should think of each system as a 'whole' that is more than the sum of its parts, but also itself a 'part' of larger systems. For example, a cell is more than just an assemblage of molecules, and is itself a part of larger systems, for example a human heart. On one level, the heart is a whole (an organ), but on another level it is a part of the circulatory system. To make the 'systems' example more interesting, let us consider the human being as a 'terrorist'. A terrorist cell and a larger terrorist group can both be 'systems' where the 'parts' are terrorists.

Systems theory stresses the interdependent and interactional nature of the relationships that exist among all components of a system. Therefore, the terrorist cell may actually consist of a complicated group of individuals (sub systems), each of which has a different role, such as bombmaker, kidnapper, or fundraiser. Each of these individuals has slightly different beliefs and attitudes, different families and relationships. Each will react independently within and without the group. Events affecting any one terrorist cell member will have an impact on all cell members and then upwards into the terrorist group. There are many unpredictable outcomes you can envisage in just this one simple 'systems' example. Magnified many times over, we begin to face an enumerable wicked problem.

Importantly, systems theory argues that regardless of how complex or diverse the system, there will always be an inherent level of organisation, and such structure can be described by principles or general rules of behaviour. If we uncover these general rules, we may be able to analyse and understand the system; the 'why' and 'how' it reacts and adapts. In doing so, we may be able to select windows of opportunity in which to apply energy and thereby

modify system behaviours or organisation without exerting complete control. A small change can substantially impact the larger system.

Systems are complex, diverse and interactional, often leading to wicked problems. Due to the adaptive nature of complex systems, limited opportunities exist to enact changes that will produce predictable and enduring outcomes—thus an approach for thinking about wicked problems in systems environments is required; this is called systems design. So how will a systems design approach have applicability to the Australian Army?

The Concept of Systems Design

The systems design approach to strategic and operational settings has been driven by the need to 'work' with systems—beyond a purely linear approach—to identify better ways to think, decide and act. Important to understanding systems design is accepting that the system itself is not controllable. It shifts constantly and sometimes dramatically.

Traditionally, military planning perceives the environment as a game of chess. Chess comprises a variety of pieces that have unique characteristics and the potential combination of moves is almost limitless. There are distinct 'sides' that are easily distinguishable and operate to a set of established, unchanging rules within the dimensions of the chessboard. However, the application of systems theory to the complex planning environment accepts that our opponent today may be our friend tomorrow—the chess pieces are not simply black and white. Instead, the pieces are multiple colours of constantly changing hues; the rules do not apply to all aspects of the game and are themselves subject to continual change; even the playing board may change in size, character and dimension. All these factors combine to create a game that is ever shifting, neither straightforward nor predictable. Thus, the complex planning environment is not linear—it

is constantly in flux. The system is, in essence, a 'mess'. This mess is what we seek to understand—against which to define our problems—and thus enable the shift from 'how things are' to 'how things ought to be'. In a systems design approach, the first and most important distinction is to understand the difference between design and planning. In essence, design is about 'defining the problem' and planning is about 'resolving the problem'. *Systems design is therefore fundamentally a way of 'thinking' about problems.* It then supports and complements the conduct of military planning. Let us consider the conceptual model, and so broadly explain the systems design approach.

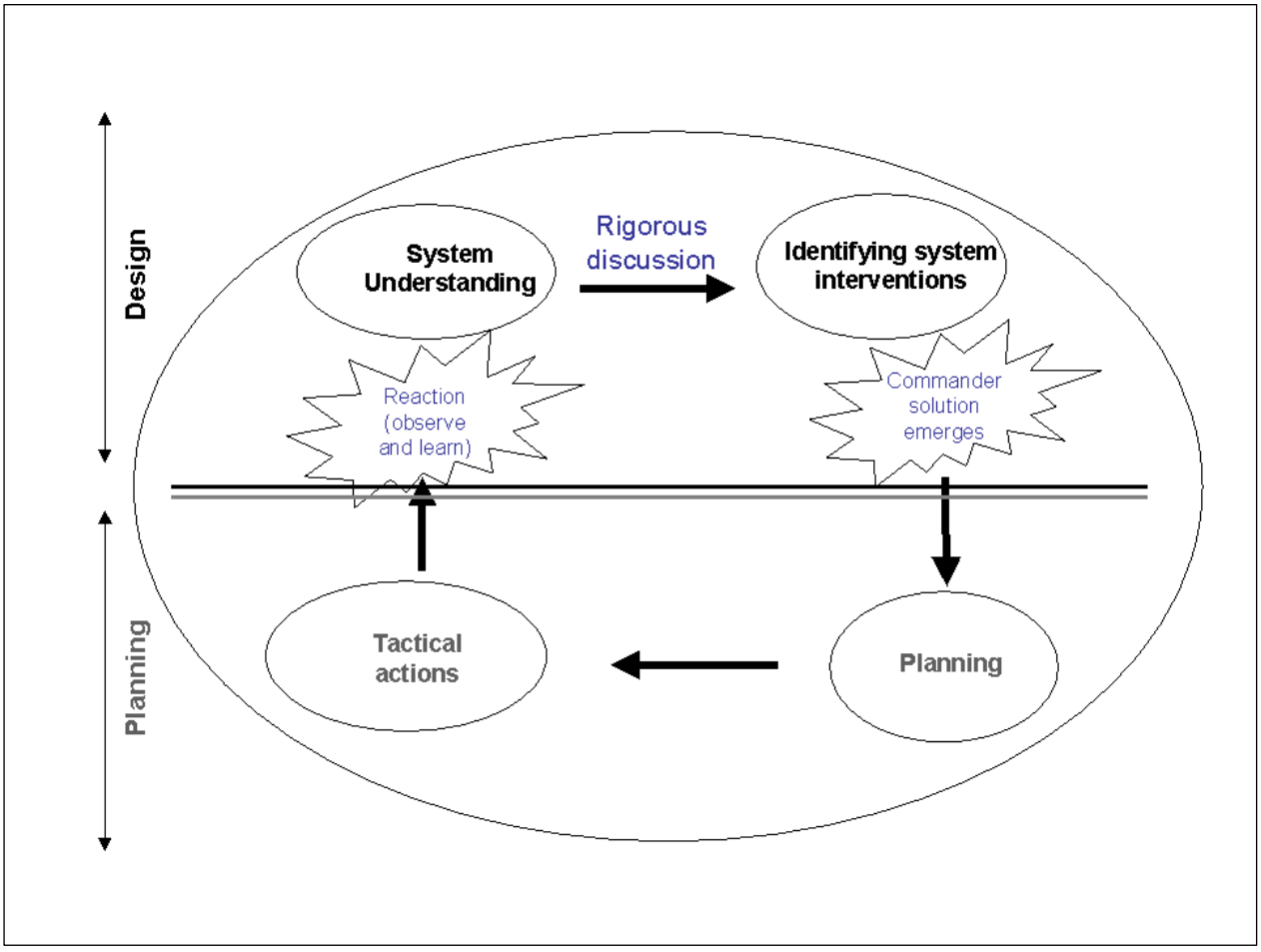

Figure 3: A conceptual model of the systems design process

Figure 3 illustrates the design approach. Imagine there is a design team, that includes the commander, conducting rigorous facilitated discussion to gain a thorough understanding of the system—the

'mess'. The design team creates models that illustrate the system and provide clarity of 'the way things are'. The entire design process is about creating 'ah hah' moments where commander solutions 'bubble to the surface', intuitively informing the conduct of planning.

Planning flows to tactical actions that create energy in the system that cause change. The design team observes these changes and learns about impacts of actions, thereby establishing a formal 'learning loop' that reinforces their understanding of the system. So the design process continues in a continual loop of structured learning, intuitive decisions and direction. A key question for the commander is, 'how long do you observe and learn before directing further action'?

Facilitation is key

Without expert facilitation, the design phase of a systems approach will not work. The facilitator is responsible for compiling the questions that drive discussion and harness through rigorous discourse the 'collective brainpower' of the design team. The facilitator must be able to draw out the often-competing requirements in a joint combined-arms interagency task force or, more broadly, a whole-of-government approach, including those with subject-matter expertise or unfamiliarity with military planning. Diverse opinion and confronting debate is valued and encouraged as the key medium towards rigorous understanding. Ideally, the facilitator is not the commander, although that may be the case. Essential to preventing 'group think' or stepping into a linear process is having the right group of people in the design team.

Systems design enshrines structured learning. This is crucially important when considering the constantly shifting nature of systems. It is the ability to constantly learn from adapting systems that stands a systems-design approach apart from the linearity of the military appreciation and effects-based processes widely in use today.

Applicability of a Systems Design 'Thinking' Approach for the Australian Army

There is considerable potential for applying systems design as an approach for resolving complex higher-level problems confronting the Australian Army. The following key areas are considered of special interest:

- **Shift in Commander's emphasis**. A systems design approach clearly shifts the commander's key responsibility to design rather than planning.
- **Maximises collective intelligence**. This approach harnesses the collective brainpower of a design team in a way that works effectively with natural thinking methodologies, as such it provides some advantages in a joint combined inter-agency environment.
- **The Commander's situational awareness is improved**. Through involvement in rigorous facilitated discussion the commander gains a first hand conceptual understanding of the complex system. His situational awareness is maximised through his deep, immersive, integration in the design process enabling the ability to develop 'ah hah' moments of intuitive judgment.
- **Provides rigorous structured continual learning**. The constant updating and 're-framing' of the complex 'mess' creates both depth of understanding and learning about actions and system reactions.
- **Fits the Australian cultural outlook**. Our national and military cultures lend themselves well to the egalitarian nature of discussions required in a systems-design approach.

There are, however, a few challenges:

- **The role and integration of the commander is fundamentally different**. The commander's role is almost egalitarian during discourse which may create some small group dynamic and

command personality challenges. The discourse doesn't undermine command authority but recognises that better solutions are created through an all inclusive approach. Of note, the process is more demanding of the commander's time.

- **Raise the right design team**. Getting the right group of dynamic people who can conduct rigorous discourse without 'group think' or dominance by the commander or facilitator will be a challenge in a small Army. This brings to question whether design team composition should be considered using psychometric profiling in addition to past performance.

- **Facilitation is key**. Without expert facilitation systems design will not work. There is the need for a facilitator with the ability to stimulate creativity, explore alternatives and summarise.

- **Current doctrine is Linear**. Finally, in a complex environment, where we are focussed on adaptive thinking, our current problem solving doctrine is centred on a linear thinking process.

Conclusion

Systems design is a developing philosophy and methodology that offers a new approach. From an Australian military perspective, this methodology stands apart from conventional military thought and challenges enshrined doctrinal and thinking processes. It is iterative, inclusive and evolutionary and therefore potentially provides a winning approach for complex warfighting. Conceptually, it fits neatly with Army's future directions in terms of the Hardened and Networked Army and offers the potential to institutionalise creative and adaptive thinking in a comprehensive joint and interagency context. It offers a profound insight into where we could head in preparing Army's senior leaders of today and tomorrow.

Systems design is worthy of future and deeper exploration by the Australian Army. It canvasses alternate viewpoints and provides a greater conception of the complex environment. Design teams using

this approach arrive at vastly different and more comprehensive operational designs than those strictly applying linear approaches such as the military appreciation process. In the context of resolving wicked problems at the operational or strategic level, systems design offers insights into the problem space before decisive commitment—offering a unique approach to dissecting complex environments and adversaries.

Chapter 6

Lessons from the Past: Getting the Army's Doctrine 'Right Enough' Today

Brigadier General Huba Wass de Czege

No doctrine is perfect, but getting it 'right enough' is strategically important. Dire consequences followed for France in the spring of 1940, for example, because heavy investments in its high technology Maginot Line failed against the German Blitzkrieg. French doctrine was based on flawed post–First World War interpretations of technological change and its impact on the nature of war. Recent events have also taught that operating without applicable doctrine in Afghanistan and Iraq has strategic consequences. In addition, another lesson is that the intuition of senior generals can be little valued in the councils of state today. The quickly submerged November 2002 public dispute over the number of soldiers required for the coming invasion of Iraq between the Chief of Staff of the US Army, General Eric Shinseki, and Deputy Secretary of Defense, Paul Wolfowitz, is one prominent example of this type of 'bureaucratic' friction. Yet the campaigns in Afghanistan and Iraq were conducted according to emerging concepts widely supported within the Department of Defense. Little comfort should be taken that events are proving the former Army Chief more right than wrong. Politicians are more likely to respect the intuition of senior Army leaders when they render judgments backed by a sound body of doctrine, especially one that is also respected and supported by the other Services.

The lessons from the Army's struggle to get the doctrine 'right enough' after Vietnam are worth heeding as the present generation carries out the current revision of the US Army's capstone operational doctrine. This essay has two purposes: the first is to offer lessons about how the US Army arrived at a doctrine that was 'right enough' for the closing decade of the Cold War, and the second is to share insights of what 'right enough' doctrine might be, and what it might be about. There are important parallels between the current period of military reform and those of the previous one that began in 1973 and ended with the collapse of the Soviet Union; the lessons are relevant and numerous. Achieving a 'right enough' result took thirteen years and two Field Manual 100-5 *Operations* revisions, published in 1976 and 1982 respectively. The 1986 manual was the third evolution. In 1993, the Desert Storm Study Project, *In Certain Victory: The US Army in the Gulf War*, had this to say about the product of this last effort:

> History all too often reinforces the familiar maxim that armies tend to fight the next war as they did the last. However, the Gulf War proved to be a dramatic exception. AirLand Battle, the warfighting doctrine applied by the American Army in Desert Storm, not only survived the initial clash of arms but, in fact, continues as a viable foundation for the development of future warfighting doctrine. The durability of the AirLand Battle concept is owed to three factors. First, unlike past instructions for the conduct of war, the 1986 version of AirLand Battle was a vision of what was possible rather than an owner's manual for the equipment and force structures available at the time. In fact, if the 1986 edition of FM 100-5 possessed a fault, it was that some concepts were so far ahead of capabilities that many balked at their full implementation with the tools then at hand. Second, the conditions of combat and the dynamics of Desert Storm battlefields proved to be modeled with remarkable fidelity to FM 100-5. Third, and perhaps most notable, is that AirLand Battle represented a way of thinking about war and a mental conditioning rather than a rigid set of rules and lists to be done in lock-step fashion. Its

> four tenets, initiative, agility, depth, and synchronization, are timeless, immutable precepts for present and future wars.[45]

In retrospect, the authors were too generous. The world had already changed, and that too is a lesson. While the AirLand Battle doctrine was found suitable for General Norman Schwarzkopf's restoration of Kuwait's territorial sovereignty, General Maxwell Thurman's Southern Command Operation *Just Cause* planners needed to address a host of considerations beyond this doctrine. Criticisms could, however, be tempered by recognising how well AirLand Battle doctrine addressed the one central strategic problem of the day—to contain the immense, dangerous, and potentially aggressive military power of the Soviet Union and its allies world-wide. All other threats to national security paled in comparison at the time. AirLand Battle doctrine was properly optimised for this unique set of problems. This doctrine provided sound guidance and useful precepts for fighting a 'counter aggression' campaign in response to the invasion of an ally. It also hypothesised that the host nation would tend to the many very specific and messy details that could be ignored by US Forces when the strategic aim is the restoration of territory and not 'regime change.'

Since the Desert Storm Project authors penned the words quoted above, there have been two revisions, and a re-numbering, of the 1986 manual. The former FM 100-5 *Operations* is now FM 3.0, following the numbering system of joint publications. Both were written before the events of 11 September 2001. As with the 1976 manual, the rapid advance of technology was the chief influence on framing these subsequent manuals because the new strategic realities currently facing the United States were then less apparent.[46] One of the biggest challenges of the earlier period was framing the strategic

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[45] Brigadier General Robert H. Scales, Jr., *Certain Victory: The U.S. Army in the Gulf War*, Potomac Books, Dulles, VA, 1998, pp. 106–107.

[46] Prior to 11 September 2001, even the Army's most forward-looking concepts published were based on premises of then-current strategic planning guidance.

and operational problem well enough to produce a useful doctrine. That continues to be the principal challenge today.

The Army of the early 1970s needed to address very quickly new and serious realities. Soviet forces had modernised and presented a formidable threat at a time when most of the Army's institutional attention was focused on the effort in Vietnam. To confront the Soviet threat, the Army needed to change its orientation completely, and, at the same time, reorganise itself from a large conscription-based force into a smaller, more effective professional volunteer Army. It also needed to revise an outdated doctrine, and do it quickly.

The challenges facing the US Army today are even greater. Besides being deployed and at war for several years in situations and against adversaries for which it has had little useful doctrine, the Army is going through revolutionary changes. Not only is the Army completely reorganising into a more modular force, it is also radically changing from an Army that primarily mobilises to meet sudden, large strategic emergencies to one that meets steady-state strategic demands. To meet such demands, the Army readies, deploys, and then regenerates its brigades again in three-year life cycles. It has become an expeditionary rather than a forward-based Army. To provide the intellectual underpinning for current reforms, the Army is in the process of revising its capstone operational doctrine.

Since the end of the 1991 Gulf War, doctrinal revisions were heavily influenced by Army experiments into the power of digital communications, command and control systems, and by the so-called 'Revolution in Military Affairs' (RMA). The RMA captured the imagination of both Department of Defense officials and the public. During the 1990s—the RMA decade—the more technical Services provided intellectually attractive ideas that shaped joint doctrine and concepts. From this enthusiasm over information technology-based weaponry, surveillance systems, networks, and

high-speed computers, there emerged a number of concepts that appealed to important audiences outside the Services. Ideas such as 'Shock and Awe', Global Reach – Global Power', 'Operational Maneuver from the Sea', 'Rapid Decisive Operations', 'Network-centric Warfare' and 'Effects-based Operations'[47] were attractive because they suggested that far fewer people would be needed, especially in the ground forces, and that such savings would pay for the required technological investments.

The Army, for many complex reasons, did not challenge the intellectual flaws in the groupthink of the time.[48] Instead, it put forward a technical solution that fit into the prevailing logic. The Army would shrink the tonnage of its heavy armoured and mechanised divisions by reducing the combat platoon fraction by one fifth and replacing those soldiers with 'digitisation'. It could then form air-transportable medium-weight motorised brigades that could be deployed to trouble spots more quickly within current air-lift constraints. These efforts failed to change the essential flow of procurement funding over two Administrations and eight Congresses. Moreover, until recently, the doctrines of the Army and

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[47] There is more literature in support of these ideas than against them. See for instance: Harlan Ullman, et. al., *Shock & Awe: Achieving Rapid Dominance*, Center for Advanced Concepts and technology (ACT), funded by the C4ISR Cooperative Research Program of the Assistant Secretary of Defense (C3I), Department of Defense, USA. 1996; David S. Albert's, John J. Garstka, and Frederick P. Stein, *Network Centric Warfare*, Center for Advanced Concepts and technology (ACT), funded by the C4ISR Cooperative Research Program of the Assistant Secretary of Defense(C3I), Department of Defense, USA. 1999; William A. Owens, *Lifting the Fog of War*, Farrar, Straus, New York, 2000. One could easily add the Defense Science Board 'Summer Study' Task Forces of 1998 and 1999. See also 'A Critique of RDO' by your author published in *Army Magazine*, June 2002, based on *A Concept For Rapid Decisive Operations*, J9 Futures Lab, USJFCOM, 9 August 2001.

[48] For instance see 'A Critique of RDO' by your author published in *Army Magazine*, June 2002, based on *A Concept For Rapid Decisive Operations*, J9 Futures Lab, USJFCOM, 9 August 2001, and 'Using Information Technologies to Reduce the Army's Echelons' by BG Huba Wass de Czege, US Army (Retd), *Army Magazine*, April 2002, p. 8.

the advice of its leaders was criticised heavily by many in the civilian leadership of the Department of Defense for being behind the times and slow to respond to new opportunities.

Another similarity between the period of the transition from fighting in Vietnam to facing the Soviet threat and the present complex shift is the need to address new realities head-on. An important weakness of the early post-Vietnam doctrine was an incomplete framing of the problems the doctrine needed to address. Until very recently—2002 to be specific—the Army and the other Services relied primarily on scenarios that were a mere down-scaling of the principal strategic problems of the Cold War for their investigations of future concepts and requirements.[49] These familiar paradigms left to the host sovereign the problems of public support, humanitarian assistance, reconstruction planning, rear-area protection against unconventional threats, the maintenance of security and control of the population, and other messy complications. These were issues that Cold War doctrine did not need to address. Changing regimes, enforcing peace and warring with angry and implacable transnational political movements introduce a crowd of new problems. Not only has the nature of major combat operations changed significantly, the insurgencies of the Cold War were very simple compared to those the US Army now faces. It is now time for the same kind of 'full court press' to make sense of the new strategic environment that accompanied the post-Vietnam era. An important part of this effort should be to recognise what is different, what is new, and how to create and express useful doctrine.

[49] See 'Wargaming Insights,' by Brigadier General Huba Wass de Czege, US Army (Retd), *Army Magazine*, February 2003. Also 'The Close Combat Imperative: Some Compelling Ideas on the Road to a Future Army', same author in *Armed Forces Journal*, August 2002.

Toward Active Defense

As the Army refocused on the nation's direct confrontation with the Soviet Union and its allies in Europe and Korea, the 1973 Yom Kippur War demonstrated the power of new, lethal and accurate weapons. Simulation-based studies proved many of the 1973 wartime observations about the new physics of the battlefield. They concluded that 'what can be seen can be hit. What can be hit can be killed.' New technologies made the line-of-sight battle far more deadly and complicated. This tactical problem had strategic implications. America could not afford a brittle defence, the early failure of which could precipitate rapid escalation to nuclear war. Proficiency on the battlefield demanded serious attention to the new physics.

The so-called Active Defense Doctrine emerged between 1973 and 1976, and re-aligned the Army from Vietnam to the Central Front of Europe. Active Defense emphasised the 'First Battle' against Soviet aggression, highlighted the new 'battle calculus' founded on experiences during the Yom Kippur War, and described the optimum tactical employment of new weapons. Tactical commanders were to control the current defence, the preparation of the next defence, and the planning of the third, all simultaneously. The doctrine concentrated narrowly on what was new and topical at the time—the first defensive battle against the Soviet Army in the Fulda Gap. This new doctrine was centrally conceived and written by 'the boathouse gang', a small group of bright officers convened at Fort Monroe. With minimal consultation with the field, it was published in 1976. It was creative and radical, but the Army was not well prepared to receive its teachings.

Leavenworth students, many of them former company commanders in combat, generally accepted the new doctrine's strengths in the world of tactical actions. It taught rigorous thinking about important conventional warfare issues long neglected during the Vietnam

years. However, the Army's Vietnam veterans also recognised that what may work in a world of Lanchestrian equations might not work in real life against living enemies. Internal critics felt the new doctrine was too mechanistic, paid too little attention to the human or 'moral' dimension of combat, and ignored the potential impacts of not only electronic warfare, but also chemical, biological and nuclear weapons. Some deplored the deletion of the traditional '10 Principles of War'. Others called attention to the important conceptual terrain neglected since the Second World War, that of 'the art of campaigning'; as the Soviets then called it, 'operational art.' Young officers of the time also voiced their misgivings. They saw defensive tactics as a 'fall back by ranks' approach that confused delay and defence and would lead commanders to avoid decisive engagement. In short, they saw defensive tactics as being reactive, surrendering the initiative, and resulting in a risky defensive method. The writers also took the Army to task for training exercises that were stylistic and unimaginative applications of 'doctrinally approved' methods.

Between 1976 and 1980, outside critics such as William S. Lind, Edward N. Luttwak, Steven L. Canby, Paul Bracken, John Boyd, Jeffrey Record and others took the Army to task for a number of sins. They argued that the Army placed too much value on lethal technology and too little on manoeuvrer and cunning. They also decried the perceived preference for 'attrition warfare' consisting of direct, stereotyped frontal engagements oriented against enemy strength and tailored to whittle the enemy down to size by destroying his fighting men and machines. They saw Army officers as hidebound bureaucrats cultivating managerial skills over leadership, wedded to archaic methods, ignoring the study of military history and theory, and favouring safer technology over innovative military art. They said the Army compensated for lack of imagination with sophisticated materiel and a tendency to treat military challenges as if they were simple engineering problems.

In truth, these early intellectual efforts in producing the 1976 version of FM 100-5 today receive far too little credit. While it is true that the 1976 revision stirred debate and controversy, it also got the Army's attention and shifted its focus to cement new developments. The physics of the battlefield were as much misunderstood during the early 1970s as was counterinsurgency warfare in the immediate wake of 11 September 2001. The Army did require a doctrinal wake-up call and 'Active Defense' was the first—and most crucial—step of what turned out to be a three-step reform. If the Army failed to get the tactics of the 'First Battle' right, then all else was secondary. As a result, the officer corps became intimately aware of tactical details it had ignored for many years. The 1976 version also provoked rigorous thinking about them and other matters not yet addressed by it, and sparked the next revision. With a firm foundation in the new physics, the profession of arms could turn to other new complexities, such as how to maintain unit cohesion and unity of purpose on a very stressful and messy battlefield, and how to prolong the strategic defence, and even win, in the shadow of nuclear release.

Reframing the Problem Again

In late 1979, General Edward C. Meyer, the Chief of Staff of the Army, directed the TRADOC Commander to develop a revised version of FM 100-5. The memorandum directing the revision raised many of the concerns stated above. This action, the first of several reforms launched by General Meyer, instigated the second stage of the post-Vietnam transformation. However, it took until 1982 to write the new manual and get it into the field. The new TRADOC Commander, General Donne Starry, made some immediate changes in the way the revision would proceed. While he stayed personally involved, he placed the actual responsibility on the Command and General Staff College faculty, specifically on the Department of Tactics at Fort Leavenworth.

Preparatory study included analysis of the best examples of previous United States, German and Soviet doctrine, as well as writings on military theory and history. These included the 1940 US Army FM 100-5, the recent revision of the German FM 100/100 *TruppenFuhrung,* translations of Soviet General Rheznichenko's *Taktika*, Soviet Colonel Siderenko's *Offensive*, as well as the current literature of internal and external critics and the writings they referenced. The books that were most helpful in raising the perspective from the tactical to the operational level included Russell Weigley's *Eisenhower's Lieutenants*, as well as the personal accounts of noted 'operational artists' such as George S. Patton, Eric von Manstein, and Sir William Slim.

The crucial breakthrough was to grasp the real problem allied forces faced against the Soviet threat in Europe. Reading the Soviet authors helped, as did the histories of the battles and campaigns from which Soviet authors drew their inspiration, such as the Battle of Kursk and the Manchurian Campaign. However, it became obvious that thinking primarily in terms of winning successive line-of-sight engagements, as the 1976 doctrine emphasised, was a sure path to failure for reasons more profound than the several outlined by the critics. Most notably, US forces required greater flexibility and robustness. They needed to endure certain penetration. They would also need to adapt to comprehensive and systemic disruption by a combination of specialised mechanised formations designed to penetrate on narrow fronts and large numbers of unconventional, highly trained special forces infiltrating to great depths. Dealing with these challenges led to the concept of the 'rear battle', as it was later known.

The problem of the 'close battle' had already been recognised by the 1976 doctrine. However, the remedy of engaging the enemy at arms length and from successive defensive positions was too predictable and psychologically disabling. It also required the

infusion of pre-planned counterattacks at various levels, the acceptance of open flanks, and much greater non-linearity across the forward edge of the battle area. Yet, the greater challenge was to coordinate the close and rear battles with a systematic in-depth attack of the Soviet formations. This was intended to attack their ability to mass and generate overwhelming artillery and rocket fires. Such coordination was also required to disrupt Soviet ability to regulate the flow of successive echelons into gaps found or created by penetrating and close battle forces before defending forces could react laterally. The reach of Army weapons was insufficient for this, and the Air Force, under a joint and combined command, would have to carry out what would become known as the 'deep fight.' There was no such doctrine in place. Finally, if these were not challenges enough, allied forces would have to fight in the shadow of nuclear release. What this meant was that whatever doctrine was developed, it would have to work both in the period before selective release of nuclear weapons by either side and during all the subsequent stages until conflict resolution. It was concluded that 'active defense' would prove to be far too brittle with the predictable pattern of successive rearward movement inviting disruption. Whatever doctrine was developed needed to address this combination of tasks simultaneously.

Dealing with this combination of challenges led to a number of doctrinal innovations. The logic for the 'Close, Deep, and Rear' organising framework prompted leaders at all levels to frame simultaneous solutions. The Army's adoption of the 'mission orders' command philosophy in the face of a very centralised command and control culture was not just a new paradigm, it was essential to survival and robust performance. The doctrine also addressed important issues in the psychological and leadership dimensions, raising the level of focus to division-level tactical manoeuvre. This led to a more systemic approach to thinking about combined-arms operations and the integration of other Service support. Finally, this

manual broke with Army doctrinal tradition by differentiating not only between the tactical and strategic perspectives—it added a third between them based on the perspectives of major operations and campaigns—called the 'operational level of war.' Little consensus had developed within the Army leadership on just what differentiated the operational level of war from those below and above it. In 1981, some saw the operational level simply as a long-range firepower employed intelligently to reduce the size and coherence of second echelon Warsaw Pact forces. Others saw it as much more. The doctrine also needed to address operational-level manoeuvre, about which the Army had virtually abandoned considering after the atom bombs exploded at Hiroshima and Nagasaki. Doctrine needed to assume the possibility that both sides might delay nuclear release long enough for large-scale manoeuvre to play a role before conflict termination.

The revision was widely circulated in several drafts before publication in 1982. The teachers of tactics at Fort Leavenworth were particularly involved in the re-articulation of the 'Ten Principles of War'—the evolution of which became 'Imperatives' or broad precepts for contemporary warfare—and the principles of offence and defence. The principal outside critics, William Lind, John Boyd, and Edward Luttwak, were invited to comment on drafts and held private discussions with the authors. Several respected retired general officers were approached to read the work, stand back and identify the major themes running through it, and propose revisions. Their input provided the basis for a new second chapter containing the tenets of Air Land Battle: Initiative, Depth, Agility, and Synchronisation. A former high-ranking Warsaw Pact officer and former war-planner that had recently defected also reviewed the revision.

The resulting manual was very innovative and much more theoretical than its predecessor in very subtle ways. AirLand Battle

was chosen as the title to emphasise that neither defensive nor offensive manoeuvre were possible in contemporary warfare without a close integration of air and ground forces. It urged commanders to look beyond the range of their weapons and picture the enemy in organisational wholes, within the context of higher commands and support, arrayed on the terrain and postured to perform missions. To the foundational understanding of the physical dimension of modern war, this manual added the enduring complexities of the human dimension—the effects of fear, fatigue, fog, friction and leadership. It synthesised the tradition of the decentralised command philosophy from the US mounted forces of World War II with the more developed theory of 'Mission Orders Command' borrowed from German doctrine. The battlefield framework was a spatial one of close, deep and rear areas. Yet this conceptual emphasis was on the synergy of organisational functions taking place in those areas during performance of the mission in the contest of an opposing force also performing those functions. The manual not only described offensive and defensive tactical methods, but also added short, clear discussions of the enduring theory and principles underlying current method. The new manual specifically addressed tactical methods in an environment where the enemy could initiate electronic or chemical, biological and nuclear warfare at any time. In one holistic embrace, this manual outlined the physical, moral and intellectual logic of modern engagements, battles, major operations, and campaigns. It raised the focus of the doctrine from fighting engagements and battles to the conduct of major operations and campaigns. Further, it introduced some of the fundamental ideas of operational art.

Largely because of the openness of the process, field acceptance was positive, although some mechanistic habits of thought cultivated by the 'Active Defense' died hard. However, it also became evident that some aspects of the doctrine were misunderstood in the field. For instance, some interpreted the doctrine as a shift from defence to

offence where the intention was, in fact, a more balanced treatment. Consequently, the need for what became the 1986 revision was anticipated even before the 1982 manual was published. By 1984, the new Commandant, Lieutenant General Carl Vuono, and the new TRADOC Commander, General William R. Richardson, were convinced to order a refinement of the 1982 version. They sought to clarify misunderstandings and to build-up the content on the operational level of war. The responsibility moved from the Department of Tactics to the new School of Advanced Military Studies (SAMS). This version took less time, although the two drafts circulated widely. The manual was published by mid-1986.

The Context of These Reforms

The decade after the Vietnam War was a rare period for the US Army when the pursuit of ideas was as serious and intense as the pursuit of technological solutions. In succession, four brilliant men commanded the Training and Doctrine Command: Generals William DePuy, Donne A. Starry, Glenn K. Otis, and William R. Richardson. They, and the Chiefs of Staff they served, shared a vision about Army doctrine, training, and officer education. They also shared the commitment to make appropriate changes and revisions. Therefore, they changed the culture of the Army very dramatically in several important ways.

The depth, breadth and substance of the doctrine, and the understanding of it, had reached levels never before attained. The doctrine of AirLand Battle also became the logic of not only joint doctrine but also of the 'Reagan Build-up'. It impressed adversaries and contributed in no small way to the end of the Cold War and the collapse of the Soviet Union. Ground breaking advances in training followed suit. Several of these involved significant cultural changes. The Combat Training Centers (CTCs) evolved, beginning with the National Training Center at Fort Irwin, California, and culminating

with the Battle Command Training Program at Fort Leavenworth in the late 1980s. Even before the establishment of the CTCs, military training transitioned from emphasising process to analysing outcomes. Training doctrine was based on criterion-referenced training principles. This training approach helped focus the drive for excellence in technical and tactical performance under the new conditions.

Whatever soldiers and units needed to be able to do was soon delineated in terms of tasks, conditions, and standards. Gone were the age-old and vague training evaluation checklists. Performance could now be rated on a 'go' and 'no go' basis. This was revolutionary. The Army also abandoned scripted command-post exercises designed to exercise communications and staff procedures. In their stead, the Army adopted simulation-driven exercises. Now, suddenly, colonels and generals had to make decisions that mattered, the enemy now had a vote in mock battle outcomes, and scarce resources had to be combined effectively to avoid embarrassment. This forced leaders to exercise their military artistry and tested their understanding of doctrine. Before this decade, all unit-level tactical training involved 'umpires' with armed with adjudication rulebooks and subjective professional judgment. After this decade, trainers could simulate most of the physical phenomena of the line-of-sight battle as well as many of the indirect-fire effects, even at home station. At the National Training Center, it was possible to diagnose battalion-level battles to individual soldier and platform detail. The rigour of training rose to all-time heights. Today, after action reviews (AARs) are taken for granted. However, before AARs, training event critiques focused on staff processes and avoided the sensitive issues of command decisions. Commanders now learned to participate in frank discussions of what happened and why. In fact, mission failures became an opportunity to learn. Altogether, this was a significant change in the Army's culture.

In the 1980s, the US Army also took other important steps to improve the understanding and practice of the military art and science. The Combat Studies Institute and the Center for Army History changed from emphasising institutional history to the history of warfare and operations. The Center for Army Lessons Learned was established to quickly share good ideas from the field. The predecessor of the Foreign Military Studies Office was conceived to examine the thinking of our adversaries and allies. The TRADOC Analysis Center (TRAC) was organised from its predecessor and began using more advanced and varied analytical methods. The US Army established a relationship with the Arroyo Center, an agency of the Air Force sponsored 'think tank,' and the Rand Corporation. The Army Research Institute also became more heavily engaged in examining questions of human performance in combat and organisational design.

Yet, more important than all of these innovations taken together, the Army's attitude toward military education changed significantly during this time. Officer education advanced in breadth by having all officers attend a twelve-week Combined Arms and Services Staff School (CAS3), and by instituting the study of the theory underlying Army doctrine at the School of Advanced Military Studies (SAMS). Before this decade, the majority of Army officers received no formal military education after their fourth of fifth years of service. All captains introduced to Combined Arms and Services Command School by the end of that decade, and they were also taught a uniform combined-arms doctrine in small groups by lieutenant colonels with broad experience, often former battalion commanders. The Command and Staff College offered an optional Masters degree in Military Art and Sciences, and SAMS produced up to 48 graduates a year with a rigorous Masters degree in tactics, operational art, and strategy. Graduates 'infected' all the divisions and corps staffs of the Army with a deep understanding of not only what the doctrine was at the time, but also why it was so. In addition,

professional reading lists proliferated, and division commanders led study sessions with subordinates that were both intellectually challenging and professionally developing experiences. It was an exciting decade in every aspect of doctrine, training, and leader development. However, the time for doctrinal innovation has only begun. Army faced new challenges of training for new missions, new organisations, and innovations in leader development—all while the Army had been at war.

Lessons for Today

Sound and useful doctrine is anything but doctrinaire. At the core of any adaptable doctrine is a number of enduring ideas. Historically, armies that evolved successfully adapted doctrine, organisation, weapons and equipment as opponents' technology, conditions, and strategic missions changed. Of course, when theses all change rapidly and simultaneously, the business of evolving useful doctrine is greatly complicated.

A doctrine is actually a sum total of the 'thought models' that commanders in the field, their staffs, and their subordinates share. 'Thought models' are mental frameworks or ways to think to solve problems. In the military profession, they address, for instance, how to combine arms or capabilities to gain concentration of effort and synergy, or how to compose successful defences or offences. Such abstractions are the enduring foundation underlying successful methods, and they become the basis for the evolution of new ones. To produce very useful and elegantly simple abstractions, mental frameworks are reduced to essentials by stripping away ideas irrelevant to explaining the logic of relevant relationships and features. Experts learn 'thought models' through experience and education and apply them intuitively. Sound doctrine records, propagates, and renews those most useful. Wise doctrine and wise commanders respect their foes, recognising that enemy leaders are

also thinking and adaptive. Nothing is more interactively complex than groups of human beings engaged in warfare. Any doctrine that is mostly concerned with managing internal processes and relationships, rather than coming to grips with the military problem, the mission, or the enemy will fail. Current doctrine must address how internal processes and organisational relationships serve the institution in future contests with uncooperative adversaries and within unforeseeably more complex environments filled with viscous matter and unpredictable frictions.

Doctrine for such contests cannot provide ready-made formulas. Doctrine must encourage commanders to leverage their own advantages and mitigate their own vulnerabilities, to maximise the potential of their own and supporting capabilities, to organise flexibly, and to delegate decision authority to leaders most familiar and up-to-date with changes in the local situation. Only a non-doctrinaire Army can produce a non-doctrinaire doctrine. Such an Army invests heavily in developing judgment and adaptability in their leaders and fosters a culture of adaptability. An adaptable culture is composed of cohesive 'teams of teams' that share trust within a climate that encourages experimentation and accepts and rewards adaptable and creative individuals willing to risk failure and 'speak truth to power.' It is not enough to inscribe these ideas in manuals. These ideas have to be lived, and that is difficult.

Sound doctrine shares the virtues of a sound operations plan. For instance, doctrine can be excellent without being perfect; however, it needs to be acceptable to the profession, outline the best wisdom available to guide current operations, explain it well, and provide a basis for evolutionary change. Good-enough doctrine sooner is better than perfect doctrine later. Doctrine refreshed frequently is better and more readily absorbed than doctrine that changes at long intervals. A controlled evolution, even if rapid, is easier to 'get right' in the creation and easier to digest in the field. This is

increasingly important as the rate of change continues to accelerate. Changes in doctrine, as in a plan, must explain clearly both what is new and what endures. Such balance results in better understanding, especially when clear and concise language avoids broad generalisations and miscommunication. Doctrine, like an acceptable operations order, must be expressed in clear, unambiguous language. Broad generalisations are less useful than clearly nuanced definitions.

Like a plan, less doctrine is more. Every idea, theory, taxonomy, thought model, process, approach, or method must be useful toward solving some relevant problem of the present or near-term future. Useful doctrine is stripped regularly of useless intellectual adornments. Sound doctrine, like an operational plan, is in large part the manifestation of all accumulated wisdom projected onto current strategic problems articulated in the language of the present. Just as with a flawed plan, superiority in numbers, effort or technology cannot overcome basic conceptual defects. While technology may radically transform military methods, the logic of military force acting on an adversary is rooted in human behaviour and social dynamics. One major failing of the 'Active Defense Doctrine' was it simply ignored the Army's doctrinal roots. The AirLand Battle revision built on the excellent 1940 version of FM 100-5, and its immediate successor after the Second World War and brought their relevant wisdom forward. The 1986 FM 100-5 was also influenced by what was learned from all of our adversaries since 1940 (especially the Germans and the Soviets), and it was influenced by Sun Tzu, the most enduring theoretician, and Clausewitz, the most comprehensive. The language and early industrial age analogies used by Clausewitz may be dated but the meaning of 'fog,' friction,' 'chance,' and 'moral dimension of war' can easily be translated into modern interactively complex systems and chaos theories. That is why roots need to be cultivated and brought forward using modern analogies and language. Similarly, while much of the AirLand Battle

taxonomy and mental frameworks are outdated, many key ideas of AirLand battle merely require re-cultivation.

Revising or updating doctrine, like military planning, is inherently also a creative process. Such processes are normally idiosyncratic and non-linear. The planning process provides a framework for organising and controlling the work, establishing timelines, ensuring that certain perspectives are heeded, and shaping the product. However, it is not the process that creates a unique and useful plan. Senior generals who are blessed with creative operational genius, and happen to like thinking about tactics and operational art, invariably produce creative plans, but this is not a necessity. Commanders with a genius for finding and harnessing the genius of others produce creative plans. Creative genius is rarely the product of a committee in which all members have an equal say. Military genius is not evenly distributed within the profession, nor does it necessarily correlate with rank, education or experience.

Like a plan of action, doctrine is based on assumptions and hypotheses about the impossible-to-foretell future. The better the initial framing of problem, the better the doctrine. Yet all doctrine has a limited life span. This period for AirLand Battle doctrine extended through the First Gulf War of 1991. It remained applicable to the counter-aggression campaign against the Iraqi invasion of Kuwait as it still does to the defence against communist aggression in Korea. Despite this, some faulted AirLand Battle doctrine as early as the late 1980s for not addressing the many small operations in evidence. These criticisms focussed on missions like the invasion of Grenada, the insurgency in El Salvador, the Iranian hostage crisis, the Beirut bombing, several emergency non-combatant evacuations, the incipient stages of what is now termed the 'Global War on Terror', or even the 1990 invasion and 'regime change' in Panama. As it turned out, the long-delayed revision of AirLand Battle following these campaigns was influenced more by emerging

technology and the lessons learned during the Gulf War and not by the 'regime change' campaign fought among the people of Panama.

In retrospect the key to getting the Cold War–era doctrine 'right enough' was to frame the problem properly. Just as the first post-Vietnam doctrine revisions failed to frame the problem adequately, so have the post–Cold War revisions up to now. The authors of the current draft offer no improvement. For instance, the opening chapter of the June 2006 draft of the new FM 3.0 employs what was a useful Cold War generalisation to describe current challenges:

> Conflict can take a wide range of forms over a spectrum that reflects the magnitude of violence involved. … It is a way of thinking about war by placing levels of violence on an ascending scale. … The spectrum of conflict ranges from stable peace to unstable peace, to insurgency, to general war.[50]

Additionally, the central discussion of how the Army will operate begins with the following paragraph:

> Full spectrum operations are the purposeful, simultaneous combination of offense, defense, and stability and support. The goal of full spectrum operations is to change the operational environment into one in which peaceful processes are dominant. However, the complex nature of the operational environment requires commanders to conduct operations across the entire spectrum of conflict. The Army provides flexible forces with balanced capabilities and capacities. These flexible and balanced forces remain able to conduct major operations while executing other day-to-day smaller-scale operations.[51]

To usefully describe the challenges the Army will face and to evolve useful operating concepts will require looking forward and reframing the problem yet again. The future is likely to pose a wide range of strategic problems that cannot be portrayed usefully on any

[50] FM3.0 *Full Spectrum Operations*, 21 July 2006 (draft), pp. 1–4 & 1–5.
[51] Ibid, p. 4–1.

linear spectrum. Given the variety of missions the Army has performed in the past decade, and looking forward to similar challenges ahead, it is difficult to picture what a 'full spectrum operation' might be. The problem of future Army operations will not be just balancing offense, defence, and stability operations, it will be much more complicated.

The logic of mission categories must make sense in grand strategic terms, as they did during the Cold War, and operating concepts must explain the logic of various mission types within such categories. Current doctrine authors should avoid categorising missions by distinctions that contribute little utility and bear in mind that the logic of operating concepts. Campaign design is less about intensity and scale and more about other things. The most useful distinctions will address strategic aims and salient conditions. The likely conditions under which forces will be committed will differ greatly. US Forces must be prepared for operational manoeuvre from strategic distances and under some very unfavourable and complex initial conditions. War aims will differ between those that seek merely to restore pre-aggression conditions and those that seek to transform political regimes and the international system regionally, if not globally. Some wars will necessitate sudden reactions to the unexpected initiative of an adversary, and some will be at the time and place of our choosing. Some wars will pose escalatory risks and some not. Some of these may risk horizontal escalation to include regional neighbours or other global powers, and some may risk vertical escalation to weapons of mass destruction of varying kinds under different conditions. The book to describe the fundamental logic for employing Army forces, FM 3.0, should be clear about the relevant aspects of possible strategic missions and how to think usefully about them.

No doctrine survives 'first contact' with a new strategic problem whole and intact. Every strategic problem will be unique. The

strategic context, the ends of strategy, the 'enemy,' the physical conditions, social contexts, and technologies will change constantly, and doctrinal methods are mere points of departure for adaptation. To be sound and useful, however, doctrine cannot be a vague discussion of hypothetical cases. It has to provide solutions for very real, specific, and salient strategic problems. When the key elements of that set of problems change, the doctrine loses utility and can no longer provide sound precepts. Given the rate of change in the challenges the US Army will face during this century, it will be impossible to maintain the currency of any method and process based doctrine. Meaningful abstractions that capture the considerations most important today and in the near term future will be most useful. A doctrine that is firmly rooted in a durable conceptual base of enduring logic and principles not only absorbs nuanced change more readily; it also facilitates adoption of new methods and approaches.

Then and Now

Efforts by the U.S. Army to discern the requirements of a rapidly changing strategic and technological landscape have, in fact, been underway for more than a decade and a half. They began almost immediately after the Persian Gulf War with the Army's 'Louisiana Maneuvers' and continued throughout the 1990s with a series of Advanced Warfighting Experiments and 'Army After Next' studies and wargames. The Army then extended these efforts through a more focused series of Army Transformation studies and experiments, including major wargames such as the annual 'Vigilant Warrior' series and field exercises at Fort Hood, Fort Lewis, and the National Training Center. These did not foresee the specific nature and extent of the al-Qaeda attacks on 11 of September, 2001, but they did anticipate the threat of combinations of terrorist networks and criminal syndicates based on the territory of rogue nations and shielded by their conventional military forces. The 'Vigilant

Warrior' series 'morphed' into the 'Unified Quest' series in FY 2003. These Army and Joint Forces Command jointly sponsored exercises anticipated some of the complications of 'regime change' in Iraq by pointing out the fundamental imprecision of war, the deadly possibilities of adversaries who combine regular with irregular forces using modern technologies, the manpower cost of securing attacking forces, and the challenges of stability operations in the wake of large scale offensives. The TF Modularity series of studies and wargames during 2003 and 2004 probed tactical, technological and organisational questions in depth. While this study experience examined a broad range of possibilities and cases, the Army's real experiences in the Balkans, Afghanistan and Iraq probed those cases in depth. In combination these, and a healthy dose of historical perspective, provide a sound basis for the Army to undertake meaningful revisions in its doctrine.

From a larger historical perspective, the period of the Cold War was a very unusual time. It was a very long period of grand strategic consensus both within the United States and among its global security partners. Today, a grand strategic consensus has yet to emerge. Twentieth-century frames of reference will not suffice to explain twenty-first century warfare or military operations other than war. What those should be is still up for debate. Twenty-first century warfare will retain many of the qualities Thucydides described in his classic of the Greek Peloponnesian War because warfare has always been a social phenomenon with political aims. However, in many important ways it will be different. Simple one- or two-dimensional illustrations and mechanical analogies may not convey much useful information. The difficult challenge for the Army's doctrine writers will be to describe the relevant aspects of possible strategic missions and the fundamental logic for employing Army forces successfully. It may be useful to begin by differentiating the past from the present.

The AirLand Battle Army planned deliberately and in detail for a known threat under familiar conditions; trained to perform missions that could be decomposed into specific tasks, conditions, and standards; adapted doctrine, force structure and equipment through institutions responsible for adaptation over the longer term; and operated within boundaries established by fixed chains of command, fixed doctrine, fixed force structure, and within a stable and well understood grand strategic construct. Soldiers lived in a world of near certainty within these boundaries. But that Army was largely forward deployed, and stood ready to engage the enemy within 48 hours in many cases. The principle uncertainty was when and whether, rather than whom they would fight. Those soldiers stationed at home, whether active or reserve, stood by to react to standing plans for preconceived contingencies. Being able to do all of this represented a potent deterrent to an adversary who understood what they could do. If soldiers had fought, they would mainly have fought on the soil of a host nation ally to expel an invader. For this brief period in history, doctrine could focus on a much more narrow set of issues.

In the world of AirLand Battle doctrine, there were many conceptual problems to overcome but the technical ones were dominant. These proved to be decisive in the conclusion of the Cold War since the Soviet Military believed they could never catch up with Western technology under their system while the West had attained rough conceptual parity. During the Cold War, many conditions of war planning and campaign design were widely agreed, given and fixed. In fact, during the Cold War, American forces became accustomed to differentiating cases of war by scale and intensity because the other factors that matter in war planning and campaign design were broadly similar among cases within the greater embrace of the Cold War.

Today's Army must plan more conceptually and adapt quickly to changing and unpredictable strategic challenges and missions; it must create adaptable doctrine, force structures and equipment through its institutions and encourage all elements to adapt as necessary to changing mission needs; its training programs must rely on intensive (and lengthy in comparison) mission specific pre-deployment preparations; and it must operate with flexible 'modular' chains of command with dynamically variable force structures and situational allies against often ill-defined opponents that tend to evolve rapidly and unpredictably. Soldiers live in a world of far greater variability today. Only one symptom of this variability is that it is far more difficult to devise standardised training programs based on generic tasks, conditions and standards.

Moreover, soldiers have traded the uncertainty of when and whether they will engage for uncertainty about whom and where. Instead of needing to react to a hair trigger, the US Army now serves a nation that can chose much more often whether and when it will engage, and soldiers are less likely to fight near where they are garrisoned and their families live. While more of the force is stationed at home, even those stationed abroad, deploy and serve the national interest elsewhere in a cyclical rhythm. Today when soldiers fight, they are least likely to do so on the soil of a host nation ally to expel an invader. That brief window in history when doctrine could comfortable concentrate primarily on defeating regular military forces was behind us when the Warsaw Pact began to collapse in 1989, with the exception of countering the invasion of Kuwait in 1991.

The AirLand Battle authors envisioned the requirement for inter-service operational level integration. In fact, the conceptual leap from the Active Defense to AirLand Battle doctrine involved the realisation that even in the continental environment of Central Europe the idea of 'land power' made no sense at the levels of war that mattered. Those who care to check will find no reference in the

1986 manual to 'land power.' That doctrinal term was just no longer useful, and it was a mistake to revive it. The requirements for tight integration of service operations have only increased since Grenada, were it was found grossly deficient. This trend will compel changes in methods of integration beyond increasingly impractical spatial 'deconfliction.' The logic for it should rest primarily in the principle of 'comparative advantage,' as in the science of economics. The logic of the joint commander should be to use the tools and capabilities of whatever service provide him the greatest 'comparative advantage' under the circumstances. The current doctrinal revision should embrace this concept.

Changes in warfare also favour tightly integrated joint task forces capable of projecting 'power on the ground' that is discriminating and focused. The nation's security interests will be contested increasingly in populated and urbanised terrain or remote hidden outposts, and strong, agile, discriminating and knowledgeable land component forces will be required to contest control of the ground domain. Insights from both Army and Air Force 'Title 10' future wargames and studies from the standpoint of 'comparative advantage'—as well as a careful review of operations in Kosovo, Afghanistan and Iraq—lead to the same conclusions. Naval, Air, and Space forces may gain information about objects and activities on the ground, and they may influence activities and strike objects, but only truly integrated operations containing a sufficiency of ground forces can control activities of adversaries and enforce desired outcomes in all cases. Naval, Air, and Space forces may be able to do so in special circumstances when the strategic aim is to deter, warn, suppress, or punish. However, when implacable foes have to be defeated and the desired outcome is a specified new condition, only unified action including a significantly large land force can secure it. These propositions are based on a more subtle logic than is presently in evidence in joint and Army doctrine, but they are based on the kind of razor sharp logic the twenty-first century demands.

However, the logic for judging the relative size of the land component needs to be rationalised and agreed, not only in ground service doctrines but also in Joint publications.

The implications are also clear for the Army as an institution. The changes in warfare tend to favour 'labour intensive' over 'capital intensive' solutions. 'Labour intensive' solutions will emphasise quality or 'street smarts' over quantity. The Army and its soldiers must learn and adapt much more rapidly under far more complex conditions. Officers will require the ability to think both critically and creatively about changes in the military science and art. They must understand both hierarchical and very complex organisations, the principles that shape force development, new concepts for operations, and military leadership in a dynamic and uncertain future. This means that doctrine, and the military art and science must evolve to keep pace with relevant changes, and its evolution must remain coherent, comprehensible, and disciplined.

The one inescapable aspect of warfare in this new century will be 'warfare among the people.' Population densities are increasing everywhere, especially in underdeveloped and failing states. Knowledge of social dynamics and the cultural mosaic will matter more. Even when soldiers engage in warfare with other states, they may also make war against stateless allies while they cooperate with some social groups or communities within it, compete with some, and maintain neutrality with others. Rules of engagement have become more specific and of greater strategic importance. This trend will continue. Not only will conventional and unconventional forces become more synergistic, conventional forces will increasingly adopt means and methods formerly thought unconventional.

More recently much of the profession has returned to the literature of irregular warfare, and that too will provide some wisdom. However, 21st-century struggles for power in failed or failing states, or among

transnational organisations and states, will be quite different from the past. As a result, the profession needs to understand more about how human beings think, and how ideas are propagated through societies. Warfare is as much about influencing the decisions of others as it is forcing adversaries to accept our terms. The best preparation the authors of the new FM 3.0 could have would be to read about the science of how people think and how social groups are influenced.

If in the world of Air Land Battle doctrine the technical problems were more dominant than the conceptual ones. Today, this condition is reversed. This will require the reinterpretation of the recent and ongoing technical revolution, the renewal and enrichment of old forgotten concepts, an adjustment of command and control doctrine, a new and more specific logic for estimating the need for ground forces and a broader reframing of the problem to arrive at a more satisfactory logic for mission categories and operational concepts. The current challenge is well beyond that of the Active Defense/Air Land Battle era, and there are, of course, some very important differences that make writing sound doctrine much more difficult today. However, today's Army is far better educated and it has conducted some very useful studies of future challenges, and the current Army leadership is as capable as any the Army has ever had.

Chapter 7

Land–Air Integration: the RAAF Perspective

Air Vice Marshal John Quaiffe

Like most modern air forces, the Royal Australian Air Force is entering a period of significant transformation—transformation that has great potential to deliver a far more effective air–land partnership. Transformation within any force is driven by many factors—not all of which will necessarily be outcome or combat effect focussed. The directions we take will likely reflect our recent experience, but should also reflect our strategic circumstances, and will undoubtedly acknowledge the expectations of our Government and society in general.

The considerations evident in our general transformation include the reality of our post–Cold War conflict experience. Our concepts should firstly reflect the high probability that we will be fighting as part of a coalition. Secondly, our operations will be expeditionary in nature. Finally, configuring to coerce a war-winning result solely by means of a strategic bombing campaign is an idea past its use-by date. Such a concept has even less relevance to counterinsurgency operations than it may have had to nation-state versus nation-state contests.

As we are all very much aware, the advent of precision has brought with it an expectation that our application of force will be precise. Except such deep thinkers as North Korea’s Dear Leader, the acceptability of method constrains our choice of effect—whatever

happened to the idea of bludgeoning a result though mutually assured destruction, or the rationale for selective application of tactical nuclear weapons? It is hard to imagine an air power application in the near future that will not have to consider limited yield weaponry, non-kinetic effect, operations in urban environments, extremely close coordination with ground forces and the generation of knowledge as the key superiority requirement. There is no doubt that the ADF will fight its future conflicts in a complex battlespace—complex from two perspectives. Firstly, any adversary willing to engage ADF forces is likely to do so in some form of guerrilla warfare. Secondly, the notion that Navy, Army and Air Force can be most effective operating solely from within their own traditional environments is simply obsolete.

While the warfighting requirement for air superiority remains a fundamental and enduring concept, the focus of our kinetic action is likely to be very tactical—even for those targets traditionally regarded as strategic—and the effects that we deliver will be ever more selective, precise, proportionate and matched. A clear indicator of this trend is the growing popularity of special forces. In reality there is nothing special about Special Forces except that their methods of operation are emerging as the methods of choice in fighting contemporary insurgencies. To the extent that these methods influence the operations of conventional forces, so too should the integration of air power with special forces become a driver for the close integration of air power to the land force in general. While the application of precise and decisive kinetic effects will appear very tactical, there is no doubt that the release of almost any air-delivered weapon under the scrutiny of the world's media can and will have strategic impact disproportionate to the actual weapons-effect achieved. This strategic consequence may or may not be desirable.

Let me take you for a quick skate across the transformation landscape that is confronting the Royal Australian Air Force. Within

Air Lift Group, transformation is clearly linked to impending and anticipated platform acquisition. New Multi-Role Tanker Transport aircraft and the C-17 acquisition will transform the Group through the change in balance that these platforms will introduce. These acquisitions have been shaped by our recent experience and reflect the increasing emphasis on expeditionary operations. The transformation of our airlift force into a force of greater strategic capacity will demand a commensurate change in our movements organisation to manage, accommodate and, more importantly, to exploit this shift. We are building a mobility Group with a much greater capacity for delivering a rapid application of effect. We will need to understand this new balance within the Group. Understanding our new capabilities will allow us to re-cast what we plan to do as a joint force and how to deliver it.

Surveillance and Response Group is the provider of battlespace awareness derived from air and space systems. This dynamic area, greatly influenced by the rapid development of information technologies, provides both the information architecture that our air power options exploit and the data produced by the sensors of the Group and those of our allies. This network will be modified by the introduction of the significant capability of the Wedgetail Airborne Early Warning and Control sensors and by the provision of high-speed, high-capacity data linkages. The improved fidelity of information, combined with improved access to information, presages an equipment-derived transformation that will become evident in our tactics and warfighting procedures and which we must rapidly integrate into our concepts for operations and our training. Within Surveillance and Response Group we are already witnessing the ability of information to drive transformation. For example, the capability of our AP-3C aircraft to capture and disseminate data has driven this traditional maritime platform into over-land applications. I am convinced that this demand will increasingly drive a requirement for persistent collection through unmanned platforms.

Transformation within Air Combat Group revolves around a deliberate effort to re-balance the Group's ability to deliver control of the air and the tactical engagement of targets. We must preserve our ability to independently strike targets—and indeed to execute an integrated but largely independent campaign. However, our emphasis needs to shift towards the close integration of our combat power with that of ground forces. This transformation must focus on the soldier supporting the airman and the airman supporting the soldier as equal partners. That said, nothing can be achieved without the ability to exert control of the air. The equipment-driven imperatives for our air combat force must be matched by a transformation in the concepts that we choose to pursue for closer air integration, a systems approach to warfighting and a continuing focus on constrained but precise effects.

Air Force capabilities will be significant contributors to all key elements of the network-enabled warfare concept. While clearly a tool for orchestrating operations in the air environment, our Air Operations Centre must connect with an integrated command and control grid. Our plans for Bungendore reflect this aspiration. All air power assets should contribute to the sensor grid through the dissemination of information gathered as surveillance and reconnaissance. The offensive capabilities resident in the Joint Strike Fighter and the future Multi-mission Maritime Aircraft will form crucial components of our engagement grid. We need to manage our future ISR architecture such that 'product' can be posted, pushed or accessed just as effectively as it can be collated, analysed and disseminated. Our information network will be supported by elements of the Air Force on a continuous basis, and we expect the Air Force contribution to network warfare to be a major factor in transforming the Australian Defence Force towards the aspirational seamless force.

Necessity is a reasonable basis for innovation, and necessity is shaping the role of air power in current counterinsurgency operations. As with any conflict, current operations in Iraq and Afghanistan are providing laboratory conditions for the conduct of experimentation and the development of new tactics and procedures. The complex nature of the insurgency in Iraq and Afghanistan is as challenging as it is instructive. To the extent that the insurgency can be characterised, what Coalition forces are seeking to neutralise in Iraq is a complex, adaptive network. This is a network featuring diverse cellular interactions, with a cellular structure that arises from a number of sources of emergence—religious beliefs, patriotism, financial gain, despair, frustration; the list goes on. The insurgency is not particularly organised to any strategic plan, but is self-organising—coupling as an expedient response to stimulation with various degrees of resilience, redundancy and recuperation. The key to defeating this living, evolving entity is to understand it and to attack its health. Simply attacking component parts will not defeat the network. A multi-pathed strategy is required that attacks the elements of the network's fitness: addresses and counters its sources of emergence, provides legitimate alternatives, suppresses loosely coupled liaisons, exposes key elements, and isolates and attacks key dependencies.

So what then of the role of air power? During my tour of duty in the Central Command Combined Air Operations Center (CENTCOM CAOC), 50 per cent of the CAOC's effort was directed to the orchestration of intelligence, surveillance and reconnaissance activity. This effort is all about situational awareness—knowing the enemy and being able to 'see' and understand the insurgent network—to know what it is, who plays what role, and how it responds. Easy to say, but very hard to do, but the requirement to grab the big picture and share the understanding is increasingly being facilitated by the emergence of technologies that support the friendly network. This suggests a network versus network strategy; I

suspect our current pre-occupation with network-centric buzzwords clouds the reality that the network is merely facilitating effective manoeuvre warfare: effective in terms of its unpredictability, the application and concentration of joint fires, the combination of mobility and effect, and the essential but tiresome persistence.

Apart from the significant knowledge contribution provided by air power, the attributes of speed, range, flexibility and persistence, together with the application of both kinetic and non-kinetic effects, determine air power's role in counterinsurgency operations. While there will always be a natural desire to provide immediate kinetic support for troops in contact, pre-planned strikes in support of named operations and an ability to execute rapid response attacks against time sensitive or opportunity targets are equally important. The provision of assured and rapid kinetic support also provides a shaping effect for non-kinetic applications.

In the Middle East Area of Operations (MEAO), the most frequently employed non-kinetic tactic is the 'show of force'. The demonstration of attack aircraft on-scene is frequently sufficient to coerce a favourable response from enemy forces. The show of force is effective because opposing forces can equate the presence of strike aircraft with very precise and deadly attacks.

Let me give you this example from my time as CAOC Director in the Middle East. While airpower was routinely employed in response to insurgent activity, the presence of airpower made an effective, offensive contribution to security operations in support of the first round of Iraqi elections. In the run-up to the elections and during the voting period, strike aircraft were tasked to deter and apply pressure to anti-Coalition forces and to assure the local populace in accordance with some careful pre-planning. Known insurgent havens and areas sympathetic to insurgent activity were targeted for frequent and aggressive demonstrations of strike aircraft

presence. A visible and audible presence was provided in more general voting areas to assure Iraqi voters that air power was on hand to support the Iraqi security forces. It was quite gratifying for me to sit in the CAOC and watch CNN reports on the successful progress of the election, with the sound of our aircraft a key feature of the backing soundtrack.

Non-kinetic applications can make a significant contribution to joint manoeuvre efforts through the application of persistent surveillance capabilities, various forms of intelligence, the use of presence to stimulate response and the ability to detect response and to measure effect. The concept employed for this operation involved the concentration of persistent ISR to establish patterns of communication and behaviours. This was followed by air operations to stimulate responses within the insurgent network that could be captured and identified and finally by the conduct of focussed raids, made possible by the knowledge that had been previously generated.

The provision of an end-to-end Offensive Air Support service by the US Air Force is an instructive example for Army–Air Force cooperation. Although the scale is much larger, the resource problems faced by the USAF in the facilitation of close air support are identical to ours. Neither of our Air Forces has the resources to support the training and on-going preparedness of terminal controllers in anything like the numbers required in the field. Both our Air Forces have chosen to attack this problem by creating and maintaining a smaller pool of well-trained and experienced Joint Terminal Attack Controllers. That the USAF provides these personnel, and that these non-Army specialists are accepted as integral to ground manoeuvre formations is a key difference that I find instructive. Along these lines, the recent proposal that we form, from Air Force resources, a Special Tactics Squadron to deliver close air integration for Special Forces is a step in the right direction.

Yet having effective but limited numbers of JTACs, or even the possibility of a Special Tactics Squadron, does not solve the numbers aspect of the integration problem. Through the sponsorship of the Land – Air integration cell—at this stage a virtual entity under Colonel Tim Pickford's lead, but soon to become a living breathing organisation within my headquarters—we are developing the concept for Joint Forward Observers. We need a capability to supplement JTACs in the field or at least to extend their reach. By furnishing each JTAC with three to five Joint Forward Observers, we should be able to multiply JTAC effectiveness. We have a lot of work to complete this concept as there will be limits to how much of the six-step targeting process a JTAC will be able to delegate to a Joint Forward Observer and still retain the confidence for effective and safe conduct of what will invariably be Type 3 Close Air Support:

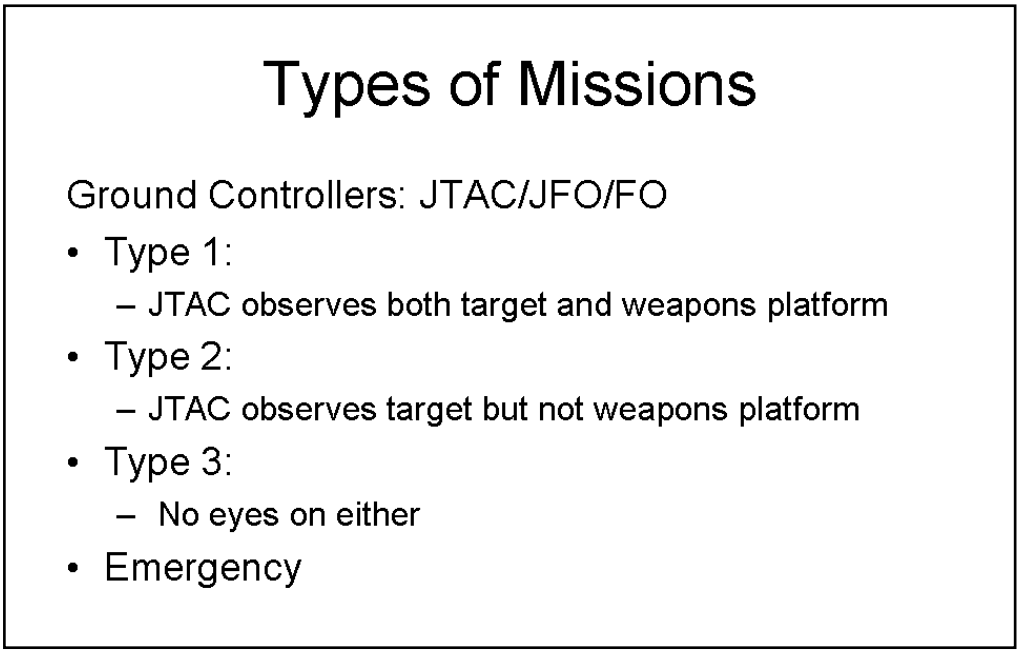

Figure 1: Types of Close Air Suppport

I am a strong supporter of this concept as I am also a strong supporter of keeping ownership of the bomb in the hands of the JTAC. We need to facilitate this development with the provision of equipment that will raise all players' awareness without the need to

resort to lengthy procedures and stylised communication. At the JTAC/JFO/Pilot level, the use of data linkages and Rover kits needs to be standard and common practice, just as we need to be able to support both the ground and air commander with pervasive and persistent ISR.

There is no doubt that the effects of joint fires and joint manoeuvre on the grand scale far outweighs the effects that an Air Force or an Army can create in environmental isolation. While our shared recognition of this fact is high, our ability to develop joint fires in the sense of both air and ground working to a common and shared goal is somewhat in lag of our aspirations. That air power is not automatically integrated into our thinking, in the same way that Navy regards its helicopters as simply being part of the ship, is a measure of the distance that we have to travel. That comment applies equally to airmen as it does to soldiers.

Progress towards making JTAC a vocation rather than a secondary qualification, the establishment of the air-land integration cell at Air Command, the pursuit of a Special Tactics Squadron from Air Force resources but working under command of Commander Special Forces, the introduction of exciting new technologies within the spheres of ISR, communications and weaponry are all indicators that we are headed in the right direction for the effective integration of our combat power.

Appendix 1

Introduction

The Chief of Army's Exercise brought together the senior leadership of the Army plus invited quests or subject-matter experts. After a plenary session, the audience broke into six syndicates for further in-depth discussion. This appendix synthesises the responses from each syndicate along the lines of the three focus workshops: Mission Command, Systems Thinking and Land–Air Integration.

Workshop One: *Mission Command*

> *We think we enact Mission Command but we are in many cases [overly] prescriptive.*
> – Syndicate response

This workshop was based around three questions, each designed to spark debate and explore in-depth the thinking within Army about the philosophy of mission command.

> ***Question 1:*** Does the Australian Army currently have a mission command culture and how is it measured by Army senior leadership?

The overwhelming response in syndicates was that a culture of mission command exists within the Australian Army. Stemming from a high tempo of operational deployment, such field experience, according to Leonard Wong at the Strategic Studies Institute, forges

leaders in a crucible of uncertainty and fluidity. The nature of mission command is widely recognised as coming from top-down example. There was a clear sense in all syndicates that different cultures of mission command exist, significantly between the deployed or operational environment and the garrison force. This difference is greater when comparing the command environments of the field army and that of Russell Hill. Of greatest concern was the comment from one syndicate that asserted that a 'muzzling of professional debate' bordering on 'censorship' existed within the ranks and that this would weaken all efforts toward inculcating the philosophy of mission command. Concomitantly, several strong comments indicated that mission command needs continued fostering and encouragement before it takes deep root.

It also became clear that a variety of opinions existed on what mission command means, from the tactical to the strategic levels. The basic premise of mission command as a philosophy emphasises the importance of individual commanders' temperament and experience. The quality of their thinking, and their ability to contextualise quickly a complex and ever-changing environment, is the core requirement of any Australian Defence Force (ADF) member. The opportunity cost and risk of enabling 'the strategic private'[52] to choose whether or not to open fire on a stone-throwing crowd, what one syndicate termed the 'three-block complex peace approach', is of a different magnitude from that of generals, advisors and ministers. That decision, by a young digger on a humanitarian intervention, to shoot or not when being pelted with rocks, will be the defining image for a wide audience. Information technologies allow real-time observation by senior commanders, as well as sound-bite coverage in the global media. This attention often leads to risk-aversion and a 'zero-defect' culture.

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[52] David Schmidtchen, *The Rise of the Strategic Private: Technology, Change and in the Australian Defence Force*, The General Sir Brudenell White Monograph Series, Department of Defence, Land Warfare Studies Centre, Duntroon, ACT, January 2007.

All participants agreed on the importance of measuring the effectiveness of Army's mission command culture. Easily implemented is the suggestion that 'benchmarking against counterpart Services' will help leaders establish and monitor the progress of mission command; this could include international partners as well as business and governmental organisations. Some opinions leaned toward developing and implementing formal mechanisms and doctrine embedding and measuring mission command, whereas others stressed the underlying cultural—and thus intangible—nature of the requirement. Three specific areas were identified as ways to locate and measure the employment (or otherwise) of mission command: operational orders, mission rehearsal exercises, and After-Action Reports.

'Honest and direct feedback is a good measure of mission command'—by looking to the paperwork that accompanies Army's activities, participants deemed it possible to witness mission command in the practical sources of command between units and higher echelons. One syndicate suggested that all directives, regardless of audience, scope or impact, must include intent statements. Post-activity reporting offers an outstanding opportunity to access soldiers at all levels, gathering their real world and near real-time opinions, as well as providing statistically significant primary data upon which to base tactics, techniques and procedures. This feedback mechanism taps into all levels of the Army and is a pre-existing, fully functional way of capturing, reporting and validating observations.

Mission command relates to all levels of command, from section to national, and it is incumbent upon commanders to apply the tenets of this philosophy. Core to this approach to command and control is for superiors to support subordinates who make mistakes when operating within the Commander's intent. Personnel must have latitude to admit to and learn from errors—a 'zero-defects' approach

limits this crucial learning and officer development opportunity. One officer voiced an opinion that a 'near miss' culture is a requirement for mission command to flourish and suggested that officers could come to expect credit and praise for frankly identifying mistakes and learning from them. 'Our response to failures is critical to the Mission Command culture', declared a star-ranked officer.

> ***Question 2:*** Has Army become risk averse and is its decision making style conducive to mission command? What other factors might impact on Mission Command?

Corporals and privates may impact from the tactical to the strategic, whereas the command hierarchy usually functions at the operational and strategic levels. Star-ranked officers must protect the mission command interests of all subordinates—never more so than when decisions are made on the run, under stress and under fire by the media, the operations staff and the hierarchy—and that entails risk. One officer asks:

> Is mission command consistent with [Australian] Army's 'style' of decision making? Or is Army's style too analytical and convergent (seeking the single best solution) in nature?

To ambitious Service or Public Service officers, risk-aversion can prove a hindrance and disincentive. Government, at all levels, is inherently risk averse, and one syndicate response declared that 'an inappropriate focus on compliance promotes risk aversion'.

One of the principal challenges is to communicate the requirement of risk management, where the right risks are accepted. Does everyone understand the positive opportunity that risks can offer, or is every 'risk' judged too much a 'gamble'? Risk calculation, especially when looking at outcomes, is the nature of command, and the commander's judgement is a cornerstone of the mission command philosophy.

Risk plays two important roles in the perception of mission command. Officers reported that mission command requires trust between commanders and their subordinates. Yet on the other side of the coin lies responsibility, and many officers felt that the entrenched 'zero-defect' mentality of the Army erodes trust and eliminates the opportunity to learn from failure. Mission command is difficult to sustain in that culture. Building trust between command levels is a reciprocal exercise, but one that can be facilitated by a clear statement of command intent. Every directive must explain the broader intent, the 'why' of context that trumps the 'who', 'how' and 'when'. The test of trust between commanders and subordinates comes when failures occur. Commonly, risk ties superiors to the success or failure of their subordinates, enhancing the natural human urge to micro-manage—the three thousand-mile screwdriver.

As Huba Wass de Czege states, commanders can fail to step back after the passing of responsibility and focus on the larger issues. Responsibility and authority do not fully devolve, thus creating groupthink and collective irresponsibility. The lowest appropriate rank needs both the responsibility and resources to achieve the mission and meet the commander's intent—what one syndicate termed 'empowering subordinates, but with accountability'. At the same time, decision-making and resource-allocation powers have become increasingly centralised, elevated out of the hands of the Service Chiefs, much less devolved to the lowest possible level, a central requirement of successful mission command implementation. Many officers see this 'rules-based' approach (as opposed to the Service's 'values-based' approach) resulting in a risk-averse compliance emphasis rather than a risk-embracing outcomes focus. One officer suggested that the Army 'learn from business'—some large Australian business's have successfully embraced a mission-command culture within a tight governance framework.

During the discussion, a Warrant Officer referred to surveys of enlisted ranks, testing particularly their impressions of mission command. Upon return home from operations and deployments, sometimes conducted in the field immediately prior to return home, the Centre for Army Lessons surveys the troops. Overwhelmingly, the other ranks reported a sense of micro-management and risk aversion from their officers and commanders at higher levels. Specifically, the other ranks did not feel trusted or empowered and did not perceive that they had received both responsibility and authority.

Further, the soldiers were glad that the stringent governance and accountability processes of barracks life lessened during their deployment. They happily missed the sense of scrutiny, of endless paperwork, prescription and process—this is the 'departmental Army' versus the 'operational Army'. According to feedback, the Army would rather be deployed.

The fact that personnel are deployed into hostile theatres means that we are an Army at war. This circumstance is not widely reflected with the Australian Defence Organisation, other whole-of-government agencies, non-governmental partners, the media or the wider population. The reality of helicopter and training accidents that result in the death of Service brothers and sisters, even when not in active combat, is of lives lost defending the national interest. Doing the work of the nation is thankless when the population do not feel the press of threats against them. A 'war' approach means a higher acceptance of risk, a change in the risk-management calculation that is not well articulated to political leaders or the Australian public. This area needs urgent attention. It is the clear articulation of intent and subsequent follow-through action, spreading throughout the Defence community, which builds trust, and as previously discussed, trust is central to mission command.

Question 3: What concrete actions can Army take to further foster a mission command culture?

A view expressed by a syndicate most eloquently addresses this question: to build a culture of mission command, the Army needs to 'Bring our warfighting ethos back into barracks'. Some respondents felt that too much emphasis is placed on mission command in the operational context: their answer to this question is that attention and effort needs to focus on peacetime administration and barracks life. As one officer put it: *'Is mission command the sum of individual behaviours, or is it dependent on 'organisational culture'*?

Two questions arose repeatedly in response to this question—are sufficient resources being allocated to enable mission command, and can its effectiveness be measured? Further, are the Army's leaders displaying enough encouragement of mission command? How should it be rewarded? What are the implications for promotion boards, awards or honours? A Reserve officer highlighted that the Army could explore learning from private companies: Australian business has been balancing tight governance frameworks with broad mission command for decades. Senior command engagement would obviate the need 'to re-invent the wheel' and provide a running start for implementing organisation-wide mission command initiatives.

By training for and practicing the practical, day-to-day skills of mission command, both subordinates and commanders will become used to working with intent statements and devolving freedom of action to the lowest possible level. One syndicate reported that encouraging the backbrief and structured interviews—leading to 360-degree feedback and lessons identification—would lead to the open recognition that mission command is the desired command philosophy. By practical and repeated example, all subordinates would learn what is required, thus become better commanders themselves.

One syndicate reported that both training and education were needed to acculturate mission command: prescriptive doctrine and artificial measures (the how) would never provide enough context (the why) for mission command to become instinctive and automatic reactions among Army's personnel. One of the difficulties lies in the diverse cultures within Army: mission command requires different behaviours at the tactical level than the operational and strategic. Several syndicates suggested that the special forces approach to mission command, 'launch and learn', provides a template for its wider implementation. This is learning and adaptation on the run—although fostered within a unique section of Army, the ability to think adaptively and apply appropriate local solutions is a requirement for the complex and interagency realities of contemporary Army life.

A common suggestion was that Army needed to place emphasis on better preparing its civilian masters to win their confidence and shape their perceptions. A common theme was that senior officers must bear the closest scrutiny on their own implementation of mission command—the universal perception must be that they 'practice what they preach'. To encourage soldiers at all levels to invest in mission command, those commanders who demonstrate the philosophy need to receive public recognition of their efforts by rewards such as promotion or command appointment. This impacts upon career management and evaluation reporting systems.

An interesting suggestion for embedding mission command looked to the importance of the staff function: greater effort and resources at this critical step would enhance the embedding of the mission command culture across Army. Streaming and specialisation through selection of people for specific roles and staff functions would build both confidence and expertise. Such an approach has implications for promotion and retention and challenges the posting cycle and duration of postings. Mid-career officers, especially those from combat arms

corps, could be streamed into becoming practical mission command specialists.

All syndicates highlighted that training is a major factor in fuller and proper mission command implementation: 'Training time is highly regulated, constraining junior commander initiative'. One comment questioned whether the Army trains for mission command: a 'task-organised approach undermines [the] ability to develop trust, [the] posting cycle and importance of mission rehearsal exercises in developing a mission command culture'. Crucially, training for senior officers is also required to ensure mission command takes permanent hold within Army: 'There is a requirement for training for operational generalship as it applies to Mission Command'. This training requirement extends to the importance of accepting some risk: the proper processes of risk management.

Conclusion

These workshops explored mission command and its implementation in the Australian Army. Opinions were varied as to the meaning and extent of mission command within Army. All syndicates expressed the observation that mission command is easier and more widely practiced in operational environments than in barracks and training. Of prime concern is the perception that governance and accountability are more constraining when the Army is not deployed; many participants felt that this issue needs attention and action. There were also differences between star-ranked participants and non-commissioned officers as to the pervasiveness of mission command.

Overwhelmingly, the feedback from syndicates highlights that a significant amount of work remains to convey the vision of mission command throughout the organisation. The Army needs to dedicate resources in communicating the vision, scope and intent of the mission command philosophy. This is best done by creating and fostering the

desired command climate; every leadership text stresses the importance of positive example from above. Leaders must embody the principles and demonstrate through consistent action how mission command is to be enacted. Essentially, the Army cannot know the real depth and breath of mission command's enculturation until Australian forces are tested across the full spectrum of operations, especially under conditions of high-intensity combat.

Workshop Two: *Systems Thinking*

This workshop considers two questions. The first examined the joint military appreciation process (JMAP) in relation to the contemporary operating environment. The second question explored an emerging operating concept, known in the Australian Army as the systems design approach. This concept is based on the work of Brigadier General Shimon Naveh of the Israeli Defense Forces, which he terms systemic operational design.

> ***Question One:*** How well adapted is the JMAP to the contemporary conflict environment?

Syndicate responses to this question indicated an almost universal acceptance of the Joint Military Appreciation Process (JMAP). Most of the officers present were already familiar and comfortable with this procedural approach to understanding a problem space; if suitably applied, the JMAP 'is an appropriate process' and 'highly applicable/suitable'. All syndicates reported that the JMAP was a powerful tool for understanding the contemporary conflict environment provided that it is 'applied appropriately, and with the appropriate higher level inputs'. Specifically, the 'JMAP remains an effective process for "planning" in a contemporary conflict environment. It is well suited to tame problems'. One participant

declared bluntly the 'Any notion of Army going with a new decision process is flawed.'

Of particular benefit to Army is the common language and frame of reference that the JMAP provides. Today's reality is that joint operations are both common and persistent. The JMAP allows Army commanders to engage with the other Services, who have substantially different operating contexts, organisational constraints and cultural vocabularies. Several syndicates raised the interagency, whole-of-government and, increasingly, whole-of-nation and multinational nature of the contemporary operating environment. They felt that the JMAP's biggest benefit was the way it promoted elements of commonality, a start-point for building a shared understanding of one another's needs.

For the Australian Army, the JMAP is a 'worked up and robust approach' that is 'methodical' and suited to the operational level. It forces commanders to generate options and has broad applicability. It is a tool that is command-focussed, able to be dynamic and iterative, and aids in the allocation of resources. The JMAP provides 'islands of certainty' from which to proceed, especially when employed in an atmosphere of 'frankness' and 'creativity'.

The idea that the JMAP specifically and the military thinking process generally are too linear, as presented by Colonel's Austin and Clay and stated by Huba Wass de Czege[53], was widely criticised by participants. Yet, the discussion that followed actually demonstrated that linearity is a consistent feature of military appreciation processes. This comes about from the 'step-by-step' training focus that all soldiers and officers undergo, what the Chief of Army has described as a 'what to think' paradigm. Systems design, however, in contrast to the JMAP, relies heavily on 'how to think' structures that promote creativity and adaptability. A member of Future Land Warfare in

[53] See Chapter 5 and 6.

Army Headquarters, whose specialty is critical and creative thinking, commented that Army's instinctive response uncertainty was to place greater emphasis on the known factors. Rather than embrace what is unknown as an opportunity, especially when confronting an adversary whose comparative advantage is adaptive uncertainty, the standard Army approach was to force more certainty. For example, one syndicate declared that 'Regardless of wickedness/tameness, all problems require to be understood. Info[rmation] gathering [is] required'. Yet the very definition of a 'wicked problem' is that no amount of extra information will provide a solution; it requires the acceptance of ineffability. More information is likely to confuse or distract, rather than explain or clarify. The only way to explore a wicked problem for a solution is to disrupt its equilibrium, observing the results and then shaping subsequent action based on both the observation and the Commander's (informed) intuition.

Many responses in the group discussions highlighted that, as a tool, the JMAP was under-utilised: most officers were 'yet to explore its full potential'. Several syndicates responded that for the JMAP to be a quality tool, it must be used appropriately. The subtext is that the fault lies in the people using the tool, not the tool itself: 'The key is how adaptive we are in its application'. The most common solution suggested by participants was for greater training in how to properly implement the JMAP. One syndicate, however, proposed a radical approach: '*education* in MAP, not training' [original emphasis]. This would include a deeper philosophical understanding of the military appreciation process and its background theory. It is difficult to imagine a generalist staff officer developing such specialised knowledge and experience. In this respect, specialisation runs counter to the 'generalist' mindset and would entail a profound re-think of officer career management.

As discussion continued, several syndicates explored some of the other weaknesses of the JMAP. Firstly, its utility across all levels of

war was questioned: [the JMAP] is 'More applicable at different levels'. Most participants agreed that the JMAP's greatest utility lies at the tactical and operational levels. Difficulty could be experienced because, according to one syndicate, the JMAP is 'Poor at adopting into a campaign sense', the strategic level of war. Another syndicate questioned 'whether there is a more appropriate method at other levels' to drive the operational art of building campaigns.

It was also noted that successful application of the JMAP is contingent upon the commander providing clear intent and precise problem-definition. A significant problem was the limited amount of time available to commanders to properly consider the problem-space—time in most military situations is the limiting factor. Lastly, many felt that intelligence product briefings (IPBs) were diminished from being useful, timely and relevant under both a systems and JMAP approach, being 'not well understood or conducted'.

One defender of the systems design approach argued cogently that the JMAP was for planning, and far more emphasis needed to go into 'planning for the right problem'. They highlighted that wicked problems require thorough identification and analysis before planning could even commence, and that this phase was under-emphasised in the linear, JMAP-driven staff world. Another syndicate covered a similar theme, noting that the Australian military has a cultural 'blindspot', a 'tendency to simplify courses of action'. Any other approaches, they concluded, that provides 'more lateral courses of action'—such as systems design—then it is a useful adjunct to other thinking and planning tools.

> **Question Two:** *Is a systems design approach appropriate to our needs? Why?*

The systems design approach was recognised by many syndicates as belonging at the front-end of the JMAP, assisting the commander in

developing their intent and defining the problem to be addressed. With all relevant staff involved, the brainstorming and problem-space appreciations would lead to better courses of action and greater shared understanding among key personnel. For whole-of-government deployments—the current reality of military operations, or where the military is not the lead agency—the benefits quickly accrue. Importantly, this process enables non-military or specialist stakeholders to provide input before plans are drawn up. More than just developing a common operating picture with humanitarian and development agencies, it also allows them to offer their contributions at the earliest possible phase.

Systems design has other positives to offer the Australian Army. It was viewed as creating healthy linkages to enhance freedom of action in a mission-command setting by enhancing the shared understanding of the commander's intent. Further, 'the unique nature of wicked problems requires analysis of the parts of the [target] system, how they interact and [their] overall effect'. Finding 'solutions' to wicked problems is a learning process, not merely a planning process. This requires 'interaction with the system in order to define and better understand the problem.' Greater understanding of the operational context and the linkages therein allows more targetting and precise application of elements of national power.

Conclusion

The two greatest criticisms that syndicates raised about systems design relate to the time that commanders and their staffs have to dedicate to the process and whether it offered substantial-enough improvement to warrant changing procedures already in place. Systems design is based around extensive workshopping at the outset, and many participants felt that this imposition was too great. Time is always the resource in shortest supply. Syndicates also reported that existing intelligence and planning products gave similar results without this extra 'time cost'.

The subtle benefit of systems design, however, is that it 'better positions the force to be more adaptive'. Time spent prior to planning is recouped later, with intuition and informed judgement enabling better 'snap' decisions that have greater impact on the operational context. Lastly, syndicates recognised that the approach had utility in non-operational application, such as the 'Russell Hill' environment, for contract negotiations, debates about force structure, etc. The subtext is that the systems design approach enhances flexibility of thinking by promoting non-linear, non-'zero-sum game' calculations, and that small, precise interactions with complex adaptive systems can have far greater outcomes that large efforts later.

Workshop Three: *Land–Air Integration*

> *The capability to apply and access fires (including organic fires and force-level offensive support) is to be devolved to, or accessible to, small teams and individuals across the force.*
>
> – Chief of Army's Development Intent
> *Complex Warfighting*

The above quote is the approved intent for Army—where it wants to be in terms of fire support to the land force. This workshop explored the increasingly joint and combined-arms nature of contemporary warfare, focussing on the advantages provided by data fusion and real-time communications. Joint warfighting has a long history in the Australian context, with combined-arms operations *de riguer* during the First and Second World Wars. However, the awareness and acceptance of the concept has gained great cultural traction across Service lines in recent years. This has led to Australia signing-up to the US certification of the Joint Terminal Attack Controller, the person with release authority.

The reality, as shown in Coalition operations in Afghanistan and Iraq, is that land forces often locate and identify the enemy target while the air component delivers the precision-guided ordnance. As militaries pursue 'network-centric warfare' and 'network-enabled operations', the ability of disparate elements to share information in real-time is increasing rapidly. Attack from the air, especially after the achievement of air superiority, enhances 'time-sensitive targetting', those fleeting moments of opportunity to attack and destroy the enemy when they are in the open or their location is certain. The answer of 'who owns the bomb' thus becomes increasingly irrelevant, more so when an all-arms 'call for fire' goes out. Instead, the limiting factors are the length of and elements within the 'kill chain'—including restricted weapons release authority.

Terminal Attack Control requires clear answers to six questions:

- Where are we?
- Where are you?
- Where are the others?
- Where are the targets?
- What is the effect?
- How will you know when the effect is achieved?

The Air Commander noted the difficulties that formal JTAC processes created. This extends to the challenge of raising and sustaining the qualification in sufficient numbers to make air attack consistently useful to the land force.

> ***Question One:*** How do we disaggregate terminal air control functions so that the capability to call for joint fires is devolved as low as practicable?

Syndicate One addressed this question by stressing the need to understand and refine the framework intent of terminal air control

functions. They suggested that fostering trust between Services, through joint exercises and training, would develop and cement the land-air partnership. Further, they recommended that talks between Australian and US Services further explore the US Joint Forward Observer as the basis for terminal air control. The challenge of the restrictions that the formal US certification caused extends into operational theatres, such as the 1st Reconstruction Task Force in Afghanistan that works with Dutch command. The syndicate concluded with the observation that the all-arms call for fire capability ensures that sensors are already at the lowest applicable level.

Syndicate Two began by exploring the premise of the discussion question. Their focus was 'Do we need to disaggregate JTAC functions at all, or should emphasis be placed on increasing the number of JTACs?' It was agreed that the 'requirement for terminal attack across the force is essential'. The preference would be for JTAC assets to be controlled centrally, such as the creation of a JTAC troop for embedding in arms corps units and formations, as the JTAC 'needs to be intimate with land force operations'. They recommended comprehensive assessment of the requirement, including training and maintenance; Forward Air Controller capabilities (-H and -A) were one offered alternative. The syndicate noted that the aspirational model 'may be unachievable with the current approach due to resource requirements'. They concluded by asking if the rules associated with terminal attack need to be relaxed.

Syndicate Three focussed on the equipment and procedural challenges of this question. They highlighted the need for appropriate communications and target-designation equipment, and suggested that a Joint Forward Observer (JFO) was required at platoon level, probably a non-commissioned officer (NCO), and that JTACs would be required at the company level, both officer and NCO. Work needed to be done on providing clear definition and

acceptance of responsibilities and functions—'who is accountable for what?' They also suggested that modifying the certification and sustainment training regime of the JTAC be sought by including simulation to reduce the live-fire requirement. They observed that investing training at the junior-NCO level 'will increase the viability and sustainability of the capability', suggesting the adjustment of the career model for 'greater skills continuity'.

Syndicate Four began by re-stating the aspiration of having 'the capability to call for joint fires reside with every soldier' and by reviewing the functions of terminal attack control:

- Locate and observe
- Confirm legitimacy of the target
- Collateral Damage Estimate
- Proportionality
- Accurate Weapons Release
- Assessment through prosecution

The group noted the scope for disaggregation in the first four steps, but that the final two steps belonged with the pilot or aircrew. The land force is most intimately involved with two of these functions: locate and observe, and collateral assessment. There are issues of trust in the initial call for fire, and issues of legality and risk in the weapons-release authority. According to the syndicate, mitigating the risks of disaggregation can be achieved through procedural, training or technical means. Procedurally, one approach is to accept higher levels of risk or to implement greater pre-planning and anticipation. Other options include greater control measures—such as using kill-boxes and emergency calls for fire—or defining 'different weapon release procedures for different situations'. On the training front, the syndicate recommended augmenting JTAC numbers with JFOs and building familiarisation and trust through comprehensive exercising. Technical means to achieve dissagregation would be through using uninhabited aerial vehicles (UAVs) to improve situational awareness and the

common operating picture. Other options include enhancing Identification Friend or Foe (IFF), employing tailored effect weapons, and moving to data instead of clear voice over radio for targetting.

Syndicate Five stepped back from the question to examine the different requirements of offensive fire support effects, particularly the unique characteristics of air-delivered options. They also questioned the shared understanding 'of what joint effects are?' They agreed that the principle of controlling offensive fire support effects at the lowest possible level is valid, but also acknowledged the importance of command at the higher level. The reality of coalition operations is driving the push for standardisation, especially to the US-certified level, but the syndicate stressed that a greater understanding of this certification was required; how were such high standards determined? This syndicate also emphasised the critical role that trust plays in this complex interaction.

Syndicate Six began by looking at some of the issues around JTAC functions: control of airspace, airspace de-confliction, kill-box allocation, time-sensitive targetting and issues of accountability. They also considered the JFO functions of troop safety and ground clearance, their role in pre-planned 'target finding' missions, preparing 9-line briefs and send them up the chain, the final 'call in' of munitions and post-delivery damage assessment.

> ***Question Two:*** Can the kill chain (Find, Fix, Track, Target, Engage, Assess) be compressed, and if so, how?

Syndicate One approached this question with technical options as the first resort. Focussing on the systems approach, they suggested integrating options such as the Rover III, Litening Pods, Blue Force Tracker and the Land 17 Battlespace Management Systems to compress the kill-chain. They also emphasised the importance of exercises (such as TASMAN LINK) and training to build trust and

awareness of operating procedures. The need for plain language was recognised, and the observation was made that the targetting process establishes an authority framework, especially when the all-arms call for fire is processed through a higher level of command.

Syndicate Two believed that the kill-chain could be compressed by facilitating the rapid passage of information. Compressing the timeframe between and within each step of the kill-chain allows quicker prosecution of targets. This is to be achieved by creating better linkages between sensors and shooters, although it does challenge higher command processes. Syndicate Three reported similar responses to Syndicate's One and Two, noting that kill-chain compression is easy to achieve when the threat is above the detection threshold but more difficult when the threat is below the detection threshold.

Syndicate Four noted that the slowest points in the kill-chain are Find, Fix and Track. Experience and practice can minimise these choke-points. The importance of pre-planning cannot be overstated: 'Anecdotal evidence from Iraq highlights that not enough time is allocated to pre-planned missions'. The delivery of Wedgetail airborne early warning and control (AEWC) will deliver better situational awareness, and, according to the syndicate, the Army needs to ensure that JTACs get a seat on-board. Beyond that, they were doubtful of 'how much further the kill-chain can be compressed'.

Syndicate Five reported that identification is the critical time driver and is included in the 'Find' element. They believed that higher levels of training will increase responsiveness but noted that 'there is a minimum finite time'. The syndicate reported that external fire support, rather than integrated, has a longer kill-chain, and that the risk of friction from multiple controllers competing for limited resources is substantial. The importance of the commander on the ground and their input, 'Regardless of technologies', is essential. The minimum length

of the kill-chain is 'when the linkage between the sensor and shooter is at the lowest level'.

Syndicate Six highlighted the absence of '"Authorise" in the kill-chain', which led them to question who and how is the discrimination of the engagement being carried out. They suggested that the technical fix of Link 16 will compress the Fix-Track-Target-Engage steps, with the last step being enhanced by Litening Pods and other technical acquisitions. The syndicate also suggested devolving the use of uninhabited (combat) aerial vehicles to brigade and combined-arms team levels. The need to create upward links 'to ensure the coordination of the targetting gameplan' was highlighted, as was the adoption of kill-boxes and 'the need to train for more than the current war'. The complexities of time-sensitive targetting were far more deserving of attention, as were the challenges of integrating intelligence, surveillance and reconnaissance capabilities from the armed reconnaissance helicopter, UAVs and the Wedgetail AEWC. In conclusion, the syndicate recommends the simplest compression was achievable through organic indirect fires.

> ***Question Three:*** What training and or technological capability development initiatives are required to enhance land-air integration?

The most interesting suggestions arising from this question, highlighted by several syndicates, examined organisational management of the challenge. The lack of overall direction and coordination is a limiting factor on improving land-air integration. One syndicate asked: 'who is the ADF lead/responsible authority?' Having a single person to fight for proper resources and to manage the capability overall was deemed an essential first step. One syndicate suggested that 'CJOPS be designated as the Capability Coordinator for Joint Fires'.

This choice, to appoint a 'supremo', would be a necessary condition for exploring, choosing and implementing any technical or education/training initiative. For example, a syndicate suggests that: 'A continuum of offensive support training and technology is required to meet the needs of the different levels'. Operational and strategic planners and decision-makers require and use different tools from formation and unit commanders and their staffs. Integrating these needs and avoiding duplications and inefficiencies is a corporate governance requirement.

Most suggestions for procedural changes to enhance land-air integration looked to simulation and training as ways forward. Use of simulation in the accreditation of JTACs and JFOs was the most prominent of these, Joint Fires Tactical Trainer being one example given. It was also suggested that a five-day JFO-type course, using a mix of simulation and live fire, could bridge the capability gap. One suggestion was for a project plan to drive the joint resource requirement, enabling 'smarter use of resources'—such as air hours—and the networking of simulators for joint training. It was widely recommended that joint training at the lowest levels was needed, as well as at 'the Australian Defence Force Academy, in Module 2 and 4 courses, COAC, etc'. Improved liaison for joint training and greater use of exchange training turns 'mutual incomprehension into mutual comprehension'. The comment was made that 'we are nowhere near as joint as we think we are'.

In technical terms, many comments related to the need for a mid-level UAV with offensive capability. Other recommendations looked at Small Diameter Bombs and the ability for scalable-yield munitions. This leads to a broader implication: better weapon-effect planning. Further, as the Joint Strike Fighter comes online, its low-observable, network-integration function as an ISR platform needs more consideration. Bandwidth again emerged as an issue, and the need for enhancing the common situational awareness and interoperability with

coalition partners was heavily canvassed. One syndicate recommended laser/GPS binoculars and designators, especially if targetting pods have sufficient communications bandwidth to share information (including video) in real-time.

On the human side of the equation, an interesting suggestion was 'the inculcation of an information-sharing culture'; the stovepipes between intelligence, headquarters, operations, logistics and command structures hinder force-wide integration. Similarly, doctrine was viewed as needing attention—what is enduring doctrine and how is the requirement for flexible, dynamic and up-to-date tactics, techniques and procedures to be balanced? Many of the points raised have implications for career management, including introducing new profiles and creation of specialist career streams. To close, one syndicate reported that the 'Greatest increase [to land-air integration] remains through understanding each others' requirements and expectations …'

ADAPTIVE CAMPAIGNING

THE LAND FORCE RESPONSE TO COMPLEX WARFIGHTING

Version 4.18 Correct as at 24 November 2006

EXECUTIVE SUMMARY

While the nature of war remains enduring its characteristics change. Future conflict will increasingly involve both regular and irregular forces using a mixture of violence and non-violence. It will include conventional manoeuvre, abductions and assassinations, subversion and insurgency. It will entail attacks on infrastructure to produce economic paralysis, but also against military targets to induce exhaustion or provoke overreaction. Resistance will include popular mobilisation and protest, social services and legitimate political activity and propaganda. It will mean Molotov Cocktails and roadside bombs combined with latest generation artillery and antitank missiles. The outcome of future conflict will not be decided on the battlefield alone; rather it will be won in the minds of populations using ideas as weapons. Therefore, combat operations can no longer be seen as the decisive phase of conflict and as a result an alternative approach to land force operations is required – *Adaptive Campaigning*.

The purpose of this document is to provide conceptual and force modernization direction to Army to ensure it remains postured to meet the demands of the future operating environment.

Adaptive Campaigning is defined as: '**Actions taken by the Land Force as part of the military contribution to a Whole of Government approach to resolving conflicts**.' The purpose of *Adaptive Campaigning* is to influence and shape the perceptions, allegiances and actions of a target population and control the overall environment to allow peaceful political discourse and a return to normality. *Adaptive Campaigning* comprises five interdependent and mutually reinforcing lines of operation:

- *Joint Land Combat*,
- *Population Support*,
- *Indigenous Capacity Building*,
- *Population Protection*, *and*
- *Public Information.*

Due to *Operational Uncertainty*, land forces must be prepared to take rapid and leading action in all lines of operation, especially in the early phases of any campaign. As the situation stabilises a gradual transfer of responsibilities to other agencies will occur, with land forces retaining a supporting role. Key to the Land Force's success will be its ability to effectively orchestrate effort across all five lines of operation.

The norm in complex warfighting will be for land forces to fight for and not necessarily with information. As a result, land force actions will be characterised by the Adaption Cycle (Act-Sense-Decide-Adapt). This paper accepts that regardless of technological advances, reducing force density on the battlefield and improvements in communications, the ability to conduct sustained close combat with the enemy and amongst the population is critical. Therefore, every soldier, regardless of specialisation, must have a warfighting focus and a high level of combat skill. This philosophy and the human centricity of war underpin the developed response detailed in this document.

INTRODUCTION

Wars must vary with the nature of their motives and the situation which gives rise to them. The first, the supreme, the most far reaching act of judgement that the statesman and commander have to make is to establish by that test the kind of war on which they are embarking; neither mistaking it for, nor trying to turn it into, something alien to its nature. This is the first of all strategic questions and the most comprehensive.

On War, Carl von Clausewitz

Background

1. While the nature of war remains enduring its characteristics have and will continue to change. Contemporary warfighting trends suggest conflict will increasingly involve multiple diverse actors all competing for the allegiances and behaviours of targeted populations. As a consequence, the outcome of future conflict will increasingly be decided in the minds of these populations rather than on the battlefield. Therefore, combat operations alone can no longer be seen as the decisive phase of conflict. As a result, a comprehensive approach to future land force operations is required ─ *Adaptive Campaigning*.

2. The Australian Army's Future Land Operational Concept (FLOC), *Complex Warfighting,* examined the 21st century conflict environment from the perspective of land forces. This document, *Adaptive Campaigning,* adds detail to the discussion in the FLOC and further examines land force capability requirements. Most importantly, it describes an integrated land force response to the demands of complex war. What sets this concept apart from previous thinking is that it represents a comprehensive response which frames the Land Force contribution as part of the military response in a Whole of Government approach.[1] The purpose of this document is to provide conceptual and force modernization direction to Army to ensure it remains postured to meet the demands of future operating environments.

3. *Complex Warfighting* described war as fundamentally a human, societal activity, rather than a technical or engineering problem. In essence, war is a form of armed politics, and politics is about influencing and controlling people and perceptions. War is a free creative human activity, inextricably linked to human will, emotion and psychology and is defined as: '*conflict using both violent and non-violent means, between multiple diverse actors and influences competing for control over the perceptions, behaviour and allegiances of human societies*'.[2]

4. *Adaptive Campaigning* acknowledges that war is a political instrument and notes our enemies will often attempt to apply tactical pressure in order to achieve direct strategic advantage. It also recognises the six broad elements for conflict resolution:

   a. Shaping actions which include force preparation and pre-positioning. Effective shaping operations may reduce or remove the requirement to conduct armed intervention while timely pre-positioning of forces allows for rapid response.

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[1] The Whole of Government concept first found practical form in Australia with the establishment in 1996 of the National Security Committee of Cabinet which brought ministers from outside Foreign Affairs and Defence into the primary security policy forum along with many of the secretaries of their departments. This concept acknowledges that the impact of security operations affects numerous portfolios. Below the NSC the Inter-Departmental Committee (IDC) is the key formal mechanism by which coordination is achieved across a number of departments.

[2] Fundamentals of Land Warfare LWD 1 - 2006

b. Establishing a mandate for intervention, in accordance with international law, the Laws of Armed Conflict and Australian national policy.

c. Defeating armed forces, both regular and irregular, in order to allow access to the local population.

d. Preventing the uprising of an insurgency or, if one already exists, defeating it.

e. Setting conditions for the development of a legitimate government combined with governance that meets the needs of its people.

f. Returning control to legitimate indigenous agencies as soon as possible.

However, while *Adaptive Campaigning* describes war in its entirety, it focuses specifically on the Land Force response within a theatre of operation, as part of a military contribution to a Whole of Government campaign.

5. Traditionally, the Army has deployed forces for conventional war, counterinsurgency, stabilisation, peace support and humanitarian tasks. Each of these operations has been covered by separate tactical doctrines (e.g. Civil-Military Cooperation, Low Level Operations, Peace Support Operations and Counterinsurgency). Today, these doctrinal distinctions do not reflect reality. As a consequence of the diffuse nature of conflict, the rising role of non-state actors and advances in technology even loosely organised militias can gain access to very advanced weapons. The result is that earlier distinctions between low-, medium- and high-intensity conflict are no longer relevant — especially at the tactical level. Therefore, land forces deployed on any operation will need access to an appropriate array of lethal and non-lethal weapons, be protected, equipped and structured to operate and survive in a potentially lethal environment while being capable of performing diverse concurrent humanitarian, counterinsurgency and peace support tasks. As a result, a single comprehensive concept is needed to integrate combat, stabilisation, reconstruction, counterinsurgency, security, civil-military cooperation, humanitarian and peace support operations and to account for the adaptive nature of warfare. This comprehensive concept is known as *Adaptive Campaigning.*

6. Fundamental to *Adaptive Campaigning* is influencing populations and perceptions which is the central and decisive activity of war. In the fight to win support, or at least acquiescence, from a population the Land Force must be capable of developing intimacy with the population while conducting operations within the complex operating environment. Influencing people and their perceptions is fundamentally a human activity which requires personal contact, proximity and an enduring presence. The Land Force's unique ability to be **persistent**, **pervasive** and **proportionate** is fundamental to success in this environment and is itself founded on the bedrock of the ability to prevail in close combat if necessary. Regardless of technological advances, reducing force density on the battlefield, virtual theatres and improvements in communications, the ability to conduct sustained close combat in close proximity to the enemy and the population is and will remain crucial.

> *Machines don't fight wars. Terrain doesn't fight wars. Humans fight wars. You must get into the minds of humans. That's where the battles are won.*
>
> Col John R. Boyd (USAF Ret.)

ADAPTIVE CAMPAIGNING

7. The purpose of *Adaptive Campaigning* is to influence and shape the overall environment sufficiently to allow peaceful political discourse and return the environment to normality.[3] *Adaptive Campaigning* is defined as: '**Actions taken by the Land Force as part of the military contribution to a Whole of Government approach to resolving conflicts**.' As depicted in Figure 1, *Adaptive Campaigning* comprises five interdependent and mutually reinforcing lines of operation:

a. **Joint Land Combat** - actions to secure the environment, remove organised resistance and set conditions for the other lines of operation.

b. **Population Protection** - actions to provide protection and security to threatened populations in order to set the conditions for the re-establishment of law and order.

c. **Public Information** - actions that inform and shape the perceptions, attitudes, behaviour, and understanding of target population groups.

d. **Population Support** - actions to establish/restore or temporarily replace the necessary essential services in effected communities.

e. **Indigenous Capacity Building** - actions to nurture the establishment of civilian governance, which may include local and central government, security, police, legal, financial and administrative systems.

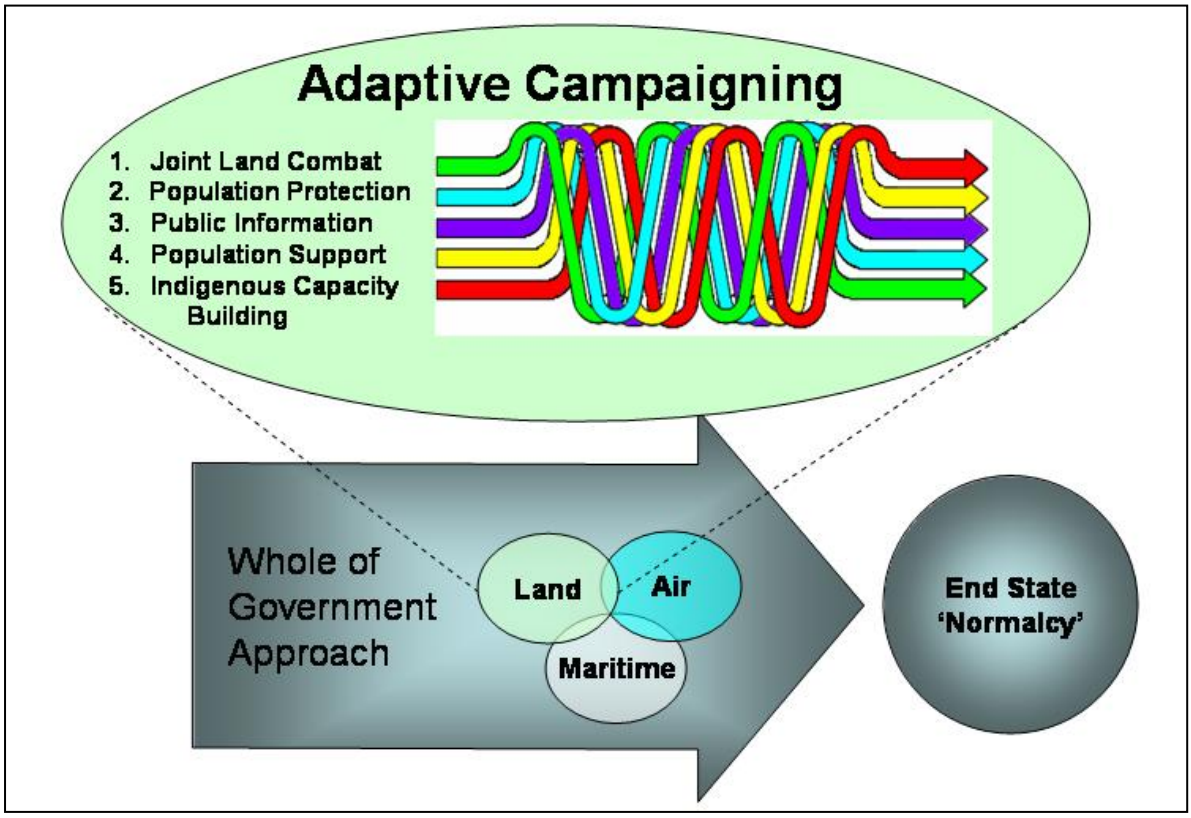

Figure 1. Adaptive Campaigning - Lines of Operations

[3] Normality is defined as an acceptable level of political activity, a pattern of social interaction normal for that culture and society, and viable economic processes (FLOC).

8. Historically, these lines of operation have been a component of all wars; however, *Adaptive Campaigning* emphasises a comprehensive approach to campaigning that focuses on the interdependence of each of the lines of operation. Operational experience demonstrates that tactical actions taken along one line of operation will likely impact on one or more of the other lines of operation. Consequently, a key to success will lie in the Land Force's ability to effectively orchestrate effort across all five lines of operation. The remainder of this paper will discuss the key components of *Adaptive Campaigning* in response to the challenges posed by the complex operating environment and each of the five lines of operation in further detail. Key implications for force development will be highlighted in the discussion of each line of operation.

The Complex Operating Environment

9. The complex operating environment impacts across all five lines of operation and is characterised by complexity, diversity, diffusion and lethality. This characterisation is premised on three connected and enduring warfare trends. These trends are:

a. **Evolving Lethality**. The lethality of battlefield weapons has been improving steadily since prehistory. These advances have both substantially increased the lethality of the battlespace and imposed a number of tactical adaptations. Napoleon described 'the interchangeability of shell and bayonet'. In this he recognised that large amounts of offensive support can reduce the demand for manoeuvre forces and vice-versa. The lethality of modern offensive support has altered the balance point in favour of fires. Additionally, unprecedented levels of lethality are now available to individuals rather than larger organisations. Hence, the highest levels of lethality are no longer restricted to nation states and regular armed forces. Moreover, high lethality does not necessarily come with a detectable 'tactical signature'. This means land forces can encounter individuals with extremely high lethality, without warning, in any type of operation.

b. **Emptying of the Battlespace**. Driven largely by increasing lethality and enabled by improved communications force densities have continuously diminished. Rapidly improving ISTAR capabilities have further accelerated this trend by forcing ground forces to manoeuvre in force packages that are small enough to shelter from detection in micro-terrain. This is referred to as manoeuvre below the discrimination threshold.[4] Conversely, the same technological trends, properly harnessed, have enabled individuals and small groups to develop significant increases in combat power. As a result, the modern battlespace is becoming disaggregated and largely devoid of any identifiable framework.

c. **Retreat into Complex Terrain**. As ISTAR technologies continue to improve the shelter provided by micro-terrain will be progressively reduced. In the mid-term the only terrain that will offer shelter to manoeuvre is urban terrain which is likely to remain substantially opaque to technological ISTAR for the foreseeable future. Urban terrain also affords manoeuvre forces protection through the proximity of non-combatants and critical infrastructure which will tend to constrain the application of

[4] The power of the combination of modern sensors, communications and weapons means that the exposure of manoeuvre elements, HQ or CSS nodes will lead to their rapid destruction. To avoid this, land forces are forced to either avoid detection or, if that is impossible, make discrimination between targets and non-targets so difficult that stand-off engagement is not practicable. This type of approach is called manoeuvre below the threshold of discrimination. Against irregular enemies it is imposed only on the irregular side. Against technological peers, both sides are forced to manoeuvre in this way.

even very accurate stand-off weapons. The humanitarian consequences of operations fought amongst populations will create an environment ripe for the exploitation of propaganda and will tend to further constrain the range of actions available to manoeuvre forces.

10. Complex war includes the potential for state on state conflict; however, it will more likely see a mixture of conventional and unconventional forces using a mixture of violence and non-violence. It will include conventional manoeuvre, abductions and assassinations, subversion and insurgency. It will entail attacks on infrastructure to produce economic paralysis, but also against military targets to induce exhaustion or provoke overreaction leading to the killing or abuse of civilians. Resistance will also include popular mobilisation and protest, social services and legitimate political activity and propaganda. Resistance will mean Molotov cocktails and roadside bombs combined with latest generation artillery and antitank missiles; it will also include the distribution of alms to the destitute and running for elective office. Clausewitz argued that war needed to be viewed as a whole rather than as a sum of its parts. Complex war demands such a comprehensive approach. In complex war everything is connected to everything else and little separates the tactical from the strategic.

11. **Operational Uncertainty**. By its nature complex war generates high levels of operational uncertainty. Operational uncertainty refers to the likelihood and intensity of spikes in the level of violence. As an example, a high level of operational uncertainty would see the possibility of rapid and large variations in the extent and severity of violence. Although land forces have traditionally focused on warfighting, as a result of operational uncertainty early in a campaign they are likely to be required to take leading action in all lines of operation. This is because the Land Force is more able to cope with operational uncertainty than are Other Government Agencies (OGA) and Non-Government Organisations (NGOs). The effects of operational uncertainty are further compounded by the adaptive nature of the threat which will attempt to exploit land force capability gaps and/or limitations. This concept of uncertainty is diagrammatically represented at Figure 2.

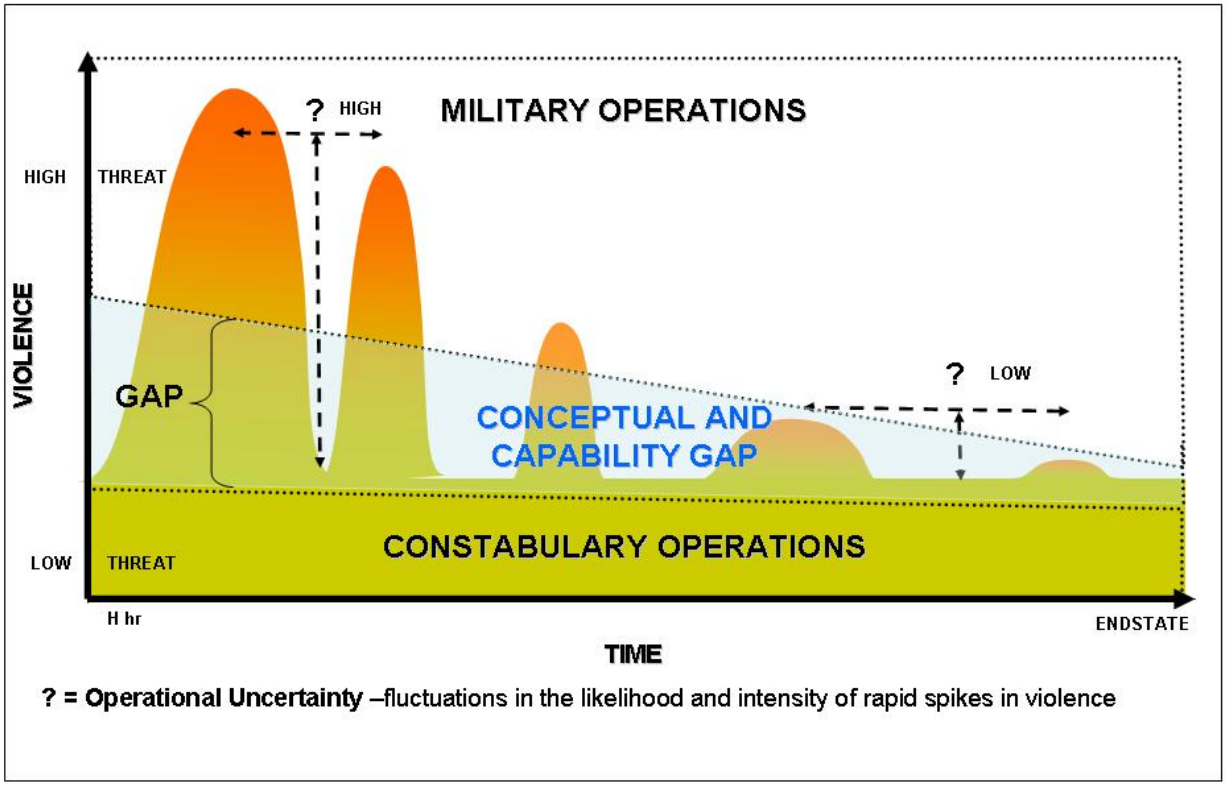

Figure 2. Operational Uncertainty

Dealing With Complexity

> There *have been literally hundreds of unexpected events – incidents that you would not encounter in your wildest dreams. That is when we all fall back on training and adaptability*. Brigadier Michael Slater, Timor Leste 2006

12. The interplay between multiple diverse actors, all competing to influence the allegiances and behaviours of societies, creates a complex adaptive system that is constantly evolving, both at the individual and collective level. The complexities of this system are such that it cannot be understood by remote analysis alone; rather, detailed situational understanding will only flow from physical interaction with the problem and success will only be achieved by learning from this interaction. In response, land force action will be characterised by the Adaption Cycle; depicted at Figure 3.

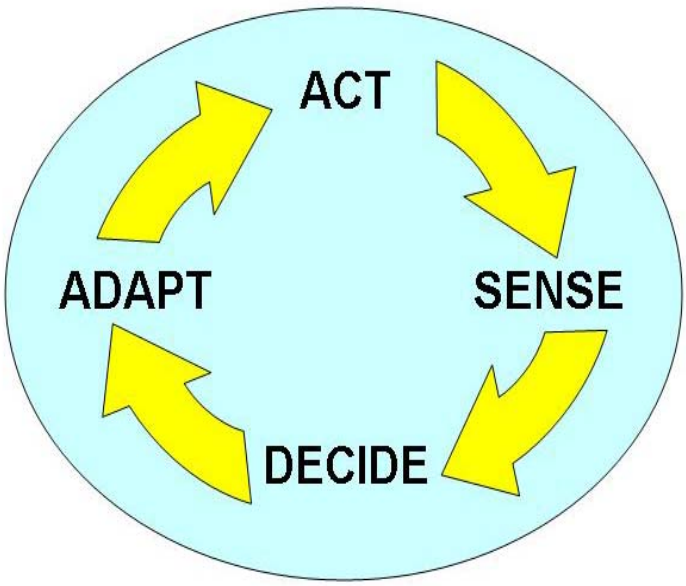

Figure 3. The Adaption Cycle

13. In this construct the Land Force is required to take action in order to stimulate a response by an enemy that is attempting to operate below the Land Force's discrimination threshold. That response, carefully scrutinised, provides a partial view of the actual tactical situation. As a result of that partial information, the Land Force's plans or postures are adjusted as necessary before the next action is taken. Frequent iterations of this cycle enable the Land Force to gradually develop a more complete picture of the tactical problem. In order to gain and retain the initiative the Land Force must be constantly and rapidly adapting to the emerging situation. This makes complex war a **continuous meeting engagement**. The reality of contemporary and future conflict is that threat groups will continually attempt to adapt their techniques, tactics and procedures faster than their adversary to exploit perceived weaknesses whilst simultaneously attempting to gain allegiances, or at least acquiescence, from societies. Complex war is therefore a **competitive learning environment**.

14. **The key to success.** Noting the complexities of the environment and the likelihood of operational uncertainty, the key to the Land Force's success will be its ability to effectively orchestrate effort across the five lines of operation. As a result, the Land Force must have an inherent ability to quickly shift its main effort within a line of operation, and across the five lines of operation, in response to and in anticipation of a rapidly changing environment. This ability is

predicated on timely feedback and sufficient understanding to interpret it properly. The ability to focus appropriate effort at the right time and place is founded on the following key capabilities:

a. **Operational Flexibility.** Operational Flexibility is the ability to maintain effectiveness across a range of tasks, situations and conditions. For example, the structure and capability of the force can be reconfigured in different ways to do different tasks, under different sets of conditions.

b. **Operational Agility**. Operationally Agility is the ability to dynamically manage the balance and weight of effort across all lines of operation in space and time.

c. **Operational Resilience**. Operational Resilience is the capacity to sustain loss, damage and setbacks and still maintain essential levels of capability across core functions.

d. **Operational Responsiveness**. Operational Responsiveness is the ability to rapidly identify then appropriately respond to new threats and opportunities within a line of operation.

> *So a military force has no constant formation, water has no constant shape: the ability to gain victory by changing and adapting according to the opponent is called genius*.
>
> Sun Tzu, *The Art of War*.

15. Conventionally land forces have been organised to generate large scale effects against similarly structured adversaries. To achieve these effects land forces have been organised to fight homogenously as brigades, divisions and corps which in turn has demanded a relatively high degree of central control. As a consequence, land forces lack the ability to adapt at the same rate as a smaller more agile adversary. Therefore an alternative approach is required to position the Land Force to learn and adapt more quickly than its adversaries, both at the individual and collective level. Such an approach is described by the two complementary philosophies of 'Adaptive Action' and 'Mission Command'.

16. **Adaptive Action**. Adaptive Action describes an alternate approach to land force operations that accounts for the dynamic nature of the complex battle space. Traditionally the Land Force has conducted deliberate planning with the aim of arriving at a solution prior to interacting with a problem. This approach is based on the belief that the more time spent planning prior to an operation the greater the likelihood of success. Unfortunately, this approach fails to account for the complexities and adaptive nature of the environment. Alternatively, Adaptive Action views deliberate planning as a means to arriving at a start point with a mental model of the problem and how it is likely to adapt, appropriate resources and time to allow a solution to be properly developed in contact. In order to embrace this philosophy it is essential that the Land Force, before committing to a course of action, develops and tests its understanding of the interactions that exist between actors and observers involved in the conflict, their respective objectives or goals, and how they are likely to react and adapt over time. Additionally, all levels of the Land Force need to understand what constitutes success at their particular level, how to measure success, and how that success correlates to the measures of success at the operational and strategic levels of the campaign.

17. Adaptive Action is an iterative process that combines the process of discovery (the problem is 'unknowable' until we prod it) and learning. We learn, therefore we change our behaviour. Therefore Adaptive Action is about doing 'context appropriate behaviour'. It is manifested within the Adaption Cycle as follows:

a. **Act**. The Land Force acts to stimulate a response. Its actions are characterised as:

(1) **Probing Actions** – To test or confirm its understanding of the battlespace the Land Force conducts probing actions. As an example, before committing to an attack on a defensive position small teams may go forward and probe the defences of that position.

(2) **Decisive Action** – Having confirmed its understanding of the battle space, normally by cycling through at least one iteration of the Adaption Cycle, the Land Force may elect to conduct decisive action. In committing to decisive action the Land Force acknowledges that further modifications to its course of action are likely based on a better understanding of the problem developed by interacting with it.

(3) **Modifying Actions** – In response to land force actions adaption in the battlespace will occur. As a result, the Land Force will be required to modify its actions, including modifying its ISR collection plans, Probing Actions and or Decisive Action.

b. **Sense**. Reactions to land force actions need to be observed and interpreted; consequently the Land Force needs to:

(1) **Learn to see what is important** – To ensure the Land Force is able to adapt to change it needs to develop a plan for observing the reactions and adaptations of threat and population groups alike. This plan must include a strategy for refining the plan over time.

(2) **Learn to measure what is important** – Equally as important as learning to see what is important is the requirement to develop a plan for measuring the effectiveness of land force actions across all five lines of operation.

c. **Decide**. Key to deciding when and how to adapt is:

(1) **Understanding what the response means –** Having acted to stimulate a response, and sensed the response, the key is to understand what that response means.

(2) **Understanding what should be done –** Having understood what the response means, understanding what should be done is therefore vital. Once we have understood, we can decide what is happening and decide what should be done.

d. **Adapt**. It is inevitable that as a consequence of land force actions the environment and adversary will adapt. As a result, the Land Force must be able to accommodate this change and if required, adapt at a quicker rate than its adversaries. Therefore the Land Force must:

(1) **Learn how to Learn** – Small teams will often discover successful strategies for dealing with a problem that are unknown to other teams. Therefore it is necessary to promote the spread of successful strategies between teams to improve the overall effectiveness of the force. Often the most important lessons will come from early identification of people's mistakes. Consequently the Land Force needs to move away from a 'zero defects mentality' in favour of a culture that embraces learning from mistakes.

(2) **Know when to change** – An important aspect of learning is knowing what to learn and its relevance to the future. In particular, what lessons are likely to assist individuals and teams in reacting to or countering adaptation that will occur within the complex operating environment – to threat and population groups alike. Having identified what lessons are important to prepare for the future it is important to identify when to change. To be effective this change needs to permeate throughout the force.

(3) **Challenge understanding and perceptions** – Success breeds complacency and the more success individuals or organisations enjoy the less responsive they become to change. In essence, the very thing that we are striving for by adopting Adaptive Action may, if not guarded against, make us less responsive. As a consequence, individuals and the commanders at all levels must be encouraged to constantly challenge their understanding and perceptions or they risk being deceived by their foes.

Mission Command

18. Fundamental to Adaptive Action is the command philosophy of Mission Command. Mission Command is an essential component of complex warfighting because it promotes a faster and more effective learning cycle and therefore lends itself to greater levels of adaptation. Mission Command recognises the importance of individual judgement and tactical exertion when dealing with operational uncertainty. Higher commanders issue a general intent, telling subordinate leaders what to achieve and why, rather than what to do and how. The subordinate then exercises tactical judgement in achieving the commander's intent, regardless of changing situations. Subordinate commanders are also expected to exert themselves in command, seeking opportunities to proactively further the commander's intent without waiting for formal orders.

19. Mission Command is predicated on the assumption that combat is frequently so complex and dynamic that every level of command must be empowered to conduct independent Adaption Cycles unified by pursuit of a higher commander's broad intent. Importantly, a commander's plan and intent will need to be responsive to change and based on an interactive mutual understanding of the problem as developed by both commanders and their subordinates. Accordingly, the production of long written operations orders is antithetical to Mission Command. Mission Command sets the framework for Adaptive Action and promotes decision superiority.

Helmuth von Moltke (1800-1891) was appointed Chief of the Prussian (later German) General Staff in 1857. One of the important concepts promulgated by Moltke was Auftragstaktik (literally, "mission tactics"); a command method stressing decentralised initiative within an overall strategic framework. Moltke understood that, as war progressed, its uncertainties diminished the value of any detailed planning that might have been done beforehand. He believed that, beyond calculating the initial mobilization and concentration of forces"…no plan of operations extends with any degree of certainty beyond the first encounter with the main enemy force." He believed that, throughout a campaign, commanders had to make decisions based on a fluid, constantly evolving situation. For Moltke, each major encounter had consequences that created a new situation, which became the basis for new measures. Auftragstaktik encouraged commanders to be flexible and react immediately to changes in the situation as they developed. It replaced detailed planning with delegation of decision making authority to subordinate commanders within the context of the higher commander's intent. Moltke realized that tactical decisions had to be made on the spot; therefore, great care was taken to encourage initiative by commanders at all levels.

> Moltke believed that commanders should issue only the most essential orders. These would provide only general instructions outlining the principal objective and specific missions. Tactical details were left to subordinates. For Moltke, "The advantage which a commander thinks he can attain through continued personal intervention is largely illusory. By engaging in it he assumes a task that really belongs to others, whose effectiveness he thus destroys. He also multiplies his own tasks to a point where he can no longer fulfil the whole of them."
>
> Moltke on the Art of War: Selected Writings

20. The contemporary commander acknowledges that uncertainty can never be completely eliminated and that commanders at every level must be able to operate effectively in uncertain environments. The best method for doing this is through decentralised execution where the impact of operational uncertainty is mitigated by simply reducing the amount of certainty needed to act. In essence commanders hold a 'loose rein', allowing subordinates the freedom of action to exercise initiative and take action. The command operates more on the basis of self-discipline rather than imposed discipline.

21. The key to Mission Command is creating the bond of trust and mutual understanding between superiors and subordinates. This is more than just control: commanders must establish a command climate of trust and mutual understanding that encourages subordinates to exercise initiative, Adaptive Action and battlefield cunning.

LINES OF OPERATION

Joint Land Combat

22. Joint Land Combat describes close combat under contemporary conditions in complex, and particularly urban, terrain. The purpose of Joint Land Combat is to remove organised resistance in order to enable effective interaction with the population. Joint Land Combat therefore sets the conditions for the other lines of operation. Because of operational uncertainty Joint Land Combat can be both the precursor to, and contemporaneous with, the other lines of operation and is equally applicable against both conventional and unconventional enemies. Joint Land Combat is the core business of the Land Force, and is the Land Force's unique and irreplaceable contribution to Government.

23. Traditionally, military forces have defined success based on the outcome of combat. Today and in the future, how the Land Force conducts combat operations may be just as important as the outcome. In essence, short term tactical successes can be overwhelmed by the strategic implications of the consequences of combat and, in particular, the effects military actions have on the perceptions of the population. The impact of tactical actions must be considered in relation to their potential second and third order effects when waging war.

> *...An individual casualty is like a pebble dropped in water. Each may make only a brief hole, but rings of sorrow widen out from them.*
>
> T.E. Lawrence'The Science of Guerrilla Warfare' 1929

24. Joint Land Combat recognises that to achieve a **persistent**, **pervasive** and **proportionate** presence in urban terrain it will be necessary to break down into relatively large numbers of relatively small combined arms teams. Importantly, Joint Land Combat seeks to harness the synergies that come from combining precision fires and manoeuvre elements into small, agile combined arms teams that 'burrow' into complex terrain to detect, identify and kill or capture the enemy with precision, discrimination and an understanding of the second and third order consequences that may arise.

25. Joint Land Combat is predicated on the effective application of the Adaption Cycle at the minor tactical level and recognises that, especially at this level, complex war is a continuous meeting engagement. Therefore, manoeuvre elements must be prepared to cope with an enemy who will often fire the first shot. As a result the Land Force must be prepared to absorb that shot, survive and then develop the battle in contact. To be effective in this environment combined arms teams will need to be highly mobile, survivable and be part of a joint communications architecture that enables responsive joint fires to rapidly reinforce them. Joint Land Combat describes how these combined arms teams will fight. Fully developed Joint Land Combat represents a step function improvement in the Land Force's ability to defeat, in combat, both regular and irregular enemies.

26. To conduct Joint Land Combat purpose designed combined arms teams focus on the defeat of an enemy through the application of recon-strike and recon-fire complexes and tactical swarming.

27. **Recon-Strike Complexes**. Recon-Strike complexes represent the traditional land force approach to warfare - Combined Arms Teams combining fires and manoeuvre. Recon Strike complexes are characterised by pre-engineered connectivity between joint fires[5], ground force manoeuvre and ISR. However, the disaggregation of the battlespace, operational uncertainty and the need to form a relatively large number of relatively small combined arms teams means that this traditional 'supply chain' approach is no longer as useful. In response the Land Force needs to move to a 'demand network' approach which can cope with great variations across time and geographic space in the demand for fire. This new approach is based on the creation of Recon-Fire Complexes.

28. **Recon-Fire Complexes**. Recon-Fire complexes are ad-hoc joint combined arms teams in which joint fires become a temporary but essential component of the team. Recon-Fire complexes are the response to the demands of the contemporary environment which requires extremely close coupling of fires and manoeuvre. Recon-Fire complexes are characterised by:

a. Cooperative connectivity is established between joint fires, ground force manoeuvre and ISR capabilities to provide mutual support to ground forces and enhance the combat power of small combined arms teams in complex terrain.

b. Land actions cause the target to present an identifiable signature; the ISR system, of which the Land Force is a part, then detects, identifies and locates the enemy and provides the target data.

c. The soldier is **a key** sensor – utilising joint fires to enhance the combat power of their combined arms team.

d. Responsive joint fires provide the majority of the firepower but are closely coupled with ground manoeuvre elements in an ongoing Adaption Cycle.

29. Recon-Fire Complexes are a logical extension of the combined arms thinking demonstrated in the "All Arms Call for Fire" process and are based on devolving authority for engagements to the lowest tactical level. The formation of Recon-Fire Complexes shapes as the key enabling technique of Joint Land Combat. To work, the fires provided will need to have prescribed levels of the following six characteristics:

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[5] Joint Fires – for the purpose of this paper joint fires includes organic fires and force level offensive support.

a. **Responsiveness**. The action is in time and on time.[6]

b. **Appropriateness**. Actions achieve the desired outcomes.

c. **Precision**. Actions hit the intended target.

d. **Orchestration**. Actions are coordinated and integrated with ground manoeuvre and do not constrain or hamper it. Actions do not generate outcomes which are at odds with the other lines of operation.

e. **Discrimination**. The target can be differentiated from its surroundings.

f. **Assurance.** The fires will be available when needed despite enemy action or weather.

30. In Recon-Strike complexes responsiveness of joint fires is normally simplified by pre-arranged coordination procedures and the allocation of resources to units. Ideally this means that joint assets are cued or are on station to support dedicated land actions. Given the diffuse, disaggregated nature of the battle space and the requirement to operate in large numbers of small teams there will never be enough joint fire assets to apportion to all teams. In contrast, Recon-Fire complexes seek to ensure joint fires are apportioned to those teams that require it when they require it by enabling both the sensor and shooter to explore 'ad-hoc' connectivity and control arrangements. Importantly, the ground element of the Recon-Fire complex must have sufficient levels of protection to enable them to survive contact with the enemy until fires become effective.

31. **Swarming**. While evolving lethality and the nature of urban terrain requires the Land Force to split into small combined arms teams to achieve a **persistence** and **pervasive** presence, the Land Force will and must retain the ability to rapidly aggregate these teams to achieve larger scale effects. However, a different approach to the current is required – swarming.

32. While internationally there are many different definitions of swarming, for the purpose of this paper swarming is the seemingly amorphous, but deliberately structured and rapidly coordinated concentration of forces and or fires to enable strike from multiple directions. Importantly, swarming seeks to achieve a greater effect than the sum of the individual components by overwhelming an adversary – undermining its defences by fracturing its cohesion. Examples of swarming can be found throughout history, but it is only now able to emerge as a concept in its own right. This is largely because swarming depends on the devolution of power to small units and a capacity to network these units.

> The Mongols were the absolute masters of swarming. They combined the mobility of the horse with the rapid, long range fire of their horn bows to create an imposing ability to swarm either fire or forces. To this capability they added a decentralized organisational structure that gave great leeway to local commanders. Finally their arrow riders assured the swift flows of important information, allowing an overall commander to have a very clear idea of just what his widely distributed swarming forces were up to.
>
> More recent examples of swarming include the U-boat war in World War II where German submarines deployed in widely dispersed fashion, coming

[6] 'Critical Time (t_{crit})'. Critical time is a measure of responsiveness. It is the time after which provision of fire will no longer meet their primary purpose which, in the case of recon-fire complexes, is either to prevent friendly casualties by providing mutual support or to effectively engage a time sensitive target before it retreats back below the Land Force's discrimination threshold.

> together to swarm convoys that were spotted trying to make passage across the Atlantic, only to dissolve away in preparation for later attacks.
>
> RAND Paper - Swarming and the Future of Conflict
>
> The more recent example of swarming is evident in the tactics used by the Hezbollah against the Israeli forces in Southern Lebanon in August 2006.
>
> After action reviews of the 2006 Lebanon Campaign

33. Swarming has two fundamental requirements. First, to be able to strike at an adversary from multiple directions there must be large numbers of small manoeuvre units that are tightly networked. The second requirement is that the 'swarm force' must not only engage in strike operations, but also must form part of a 'sensory organisation' providing whole force situational awareness. These two fundamental requirements necessitate the creation of new command and control systems and cultures or at the very least adaptation of the current.

34. The manoeuvre concept of swarming acknowledges that the small team commander in contact is initially best placed to coordinate the reinforcing actions of other small teams until a suitable opportunity presents itself to conduct a battle handover. Swarming relies on teams cooperating through a few simple decision rules, shared situational awareness and a common understanding of the commander's intent. Importantly, small teams must ensure that the commander is given a clear understanding of the situation thereby enabling 'topsight'. This creates the notion of a command element that 'knows' a great deal but intervenes only sparingly and when necessary.

35. The concept of swarming is just as applicable against non-conventional adversaries as it is against conventional forces; however, it relies on the Land Force being able to achieve a decisive concentration of effects faster than its adversary. Therefore, to be successful the Land Force must be more proficient at employing the concept of swarming than its adversaries.

Functional Analysis of Joint Land Combat

36. Joint Land Combat is predicated on six basic demands:

a. **C3ISR -** the ability to understand, direct and measure the effects of actions within the complex environment;

b. **Protection** - the ability to manoeuvre and survive in complex terrain;

c. **Adaption -** the ability to rapidly adapt land force actions to the evolving challenges of the battlespace;

d. **Joint Fires -** the ability to access responsive joint fires;

e. **Protected Logistics -** access to sufficient protected logistics; and

f. **Rapid Regrouping** - the ability to dynamically reorganise.

37. **C3ISR.** The ability to command, control and coordinate land force actions that pierce the veil of uncertainty, generate actionable intelligence and update the shared common operating picture across the Land Force is essential. The foundation of the common operating picture is based on the ability to dynamically map the complex operating environment and disseminate this information in a time critical manner to the lowest practical level. This ability is intrinsically linked to the Land Force's ISR capabilities and is predicated on the fusion of technical and

human intelligence. Underpinning this approach is the concept 'every soldier is an ISR collector'.

38. **Protection**. Individualised lethality of modern weapons and the disaggregated battlespace means that in complex war land forces will encounter more lethal enemies, with less warning, in close combat, in complex terrain. Therefore all deployed land force elements will need to be given sufficient levels of protection, mobility and firepower to conduct sustained close combat within the complex battlespace. Importantly, the Land Force will need to survive first contact with the enemy and react accordingly. Additionally, the Land Force will need the capacity to conduct rapid route clearance and gap crossing, maintain essential lines of communication and operate within a contaminated environment.

39. **Adaption**. The Land Force must be capable of planning and conducting operations in uncertain, volatile, complex and ambiguous settings. This is critically enabled by the ability to identify the need, modify and respond to threats and/or react rapidly to exploit fleeting opportunities. This capability will only be achieved by creating a culture of adaptation with an emphasis on education, training within complex and ambiguous environments and the ability to rapidly incorporate lessons learned into tactics, techniques and procedures.

40. **Joint Fires.** The complex operating environment demands greater numbers of small combined arms teams operating within the battlespace each able to orchestrate precision joint fires within critical time. Consequently, there is an increased demand for joint fires. The current paradigm that sees joint fires centrally controlled and coordinated by a few through a supply chain approach will no longer meet these demands. The effect of these limitations is that the joint land force is currently unable to realise cooperative connectivity between sensor and shooter, within critical time, while achieving both precision and discrimination. To address these requirements the Land Force needs enhanced access to scalable precision joint fires within critical time. This capability is manifest in the ability to realise Recon Fire complexes throughout the Land Force.

41. **Protected Logistics**. The requirement to operate in large numbers of small combined arms teams is likely to increase the pressure upon land force logistic capacity. However, whilst being essential to success, land force logistic elements have tended not to be as well protected as the remainder of the force. Consequently, they are often targeted by the enemy. Therefore logistic nodes and modes will require access to greater levels of protection than has previously been the case.

42. **Rapid regrouping**. Land forces must be versatile, agile and able to orchestrate effects in a precise and discriminating fashion. Therefore elements in the Land Force need to have modular flexible structures that allow for rapid regrouping and the development of combined arms outcomes at the small team level. Modularity requires highly educated and skilled forces with a capacity for network-enabled operations, optimised for close combat.

> *The threat environment … demands more than greater protection and firepower to ensure that our forces prevail. We will need pervasive situational awareness, seamless access to joint effects and the ability to match the agility of our irregular foes through the creation of small, tailored combined arms teams. This will permit us to be more discriminate in the application of effects.* LTGEN Peter Leahy AO

Population Support

43. Population Support includes actions to provide essential services to effected communities. The purpose of these actions is to relieve immediate suffering and positively influence the population and their perceptions. By necessity, actions taken along this line of operation are closely aligned to Public Information. The aim of Population Support is to conduct integrated civil operations that:

a. Reduce the likelihood of humanitarian crises;

b. Mitigate the effects of the damage to key infrastructure as a result of combat;

c. Reduce the internal displacement of populations;

d. Encourage a return to normalcy within communities; and

e. Build confidence in the viability and effectiveness of the governance arrangements that are in place.

44. Population Support operations are integrated actions involving military forces, OGA and NGOs. At least initially, military forces have the greatest capacity to respond to a crisis and therefore are likely to be required to provide the majority of the effort for this line of operation. As the campaign progresses, the military role is likely to contract as OGA, and NGO capacity builds. From a whole of government perspective, Department of Foreign Affairs and Trade, through AusAID, is likely to assume responsibility for this role. Regardless, the Land Force must continue to monitor Population Support actions throughout the campaign to ensure synergy with the other lines of operation. Actions in this line of operation may include:

a. Air lift or air drop of supplies of food, medicine and temporary shelter into austere locations from bases on land and at sea;

b. Delivery and operation of water purification and electrical power generation equipment in devastated regions;

c. The provision of timely emergency medical treatment and prophylaxis to affected populations;

d. The requirement to rapidly erect temporary shelter for displaced persons; and

e. The provision of flexible and agile medical personnel and facilities capable of conducting sustained operations in multiple locations.

45. Often the urgency of the situation will demand an immediate response where basic provisions like food, potable water, clothing and blankets, shelter, power and sanitation will be central to establishing effective governance and influence over the population. However, the Land Force must have relevant measures of effectiveness to ensure false dependencies and unrealistic expectations are not created.

46. While traditionally this may not be seen as a military responsibility, the risk of not completing such tasks creates opportunities for adversaries to gain influence over the population or to seek to profit from a destabilised situation. Actions by OGA and NGOs to support this line of operation are often impossible without the provision of adequate security by the Land Force. In the longer term, failure to establish a permissive environment undermines the ability to develop indigenous capacity.

47. Population Support operations will only be effective if approached within the context of a holistic campaign that appropriately addresses the other lines of operation. For example, if a nation or developing state is unable to meet the people's needs, it is also unlikely to be able maintain law and order. If examined through a lens using Maslow's 'hierarchy of needs', some will see 'security' not in terms of personal safety, but also as having power, water, sanitation, employment, schooling or access to medical facilities. In simplistic terms, the disorder or chaos created by a security vacuum will often paralyse the indigenous infrastructure's capacity to meet the people's basic needs.

48. To achieve synergy across the other lines of operation, areas of responsibility should be aligned with territorial committees at district, sub-district and regional levels. These committees, once mature, will have multi-agency representation from the Land Force, police, intelligence, government, aid, development and public affairs agencies. Their role is to plan and execute integrated essential services development through these committee structures across their respective areas of responsibility. Indigenous representation on such committees is essential, and must be a priority from the outset. This approach supports the next line of operation - Indigenous Capability Building.

Functional Analysis of Population Support

49. Population Support operations are predicated on three basic demands:

a. **Capacity** - the capacity to respond and meet basic requirements;

b. **Interagency Integration Mechanisms** - the ability to understand and effectively prioritise the needs of the environment and integrate effort across both agencies and indigenous communities; and

c. **Transition** - the ability to transition responsibility to appropriate agencies as soon as practical.

50. **Capacity**. Traditionally land force logistic capacity has been designed to sustain the force and assigned elements. This capacity, although it can be stretched to meet surge requirements, needs to be enhanced to adequately cope with the additional demands of Population Support Operations. An important component of this capability is the ability to distribute aid within a theatre of operations. This requires the Land Force to be able to operate from and deliver aid to austere and remote locations within the context of a joint force.

51. **Interagency Integration Mechanisms**. The Land Force requires the creation of both formal and informal mechanisms at all levels of command including working levels of government to ensure effective and efficient delivery of aid. While these mechanisms exist at the strategic level in the form of Interdepartmental Working Committees similar mechanisms need to be replicated at the operational and tactical levels. Thereby ensuring a coordinated Whole of Government response to the crises.

52. **Transition**. Successful transition to other legitimate agencies is facilitated through the provision of security by Joint Land Combat and Population Protection operations. Successful transition is dependent on being able to measure the effectiveness of the aid being delivered by other agencies and its effect on the population by comparison to that offered by the Land Force. The Land Force needs to continue to monitor the effectiveness or otherwise of the aid being delivered in order to allow it to rapidly respond to changes if required.

Indigenous Capacity Building

> *If you presume on the orderliness of government and fail to provide for the comfort of the governed, thus creating much resentment, disorder is certain to arise.* Li Quan to Sun Tzu, The Art of War

53. Indigenous Capacity Building includes actions taken by the Land Force to assist in the development of effective indigenous government, security, police, legal, financial and administrative systems.[7] It sets the conditions for transition to indigenous governance and as such is fundamental to shaping the Land Force exit strategy. Although the Land Force contribution to this line of operation will predominantly be limited to Security Sector Reform there is a likelihood that early in a campaign the Land Force may be required to take the lead in other non-traditional areas of responsibility. Consequently, early joint interagency planning along this line of operation is necessary to ensure key OGA input into the development of attainable objectives and a realistic plan for transition of responsibility. Early and comprehensive planning, in concert with purposefully designed measures of effectiveness that are continuously analysed for relevance throughout the campaign, will assist in preventing the creation of false expectations or unsustainable dependencies.

54. Where war is waged amongst the people, actions that support the establishment of functional legitimate governance send powerful messages that impact on the perceptions of the people and help sell the political proposition of the intervening authority. Central to effective Indigenous Capacity Building will be identifying and empowering indigenous leaders who are not only competent but also acceptable to the majority of the local population. Putting an accepted local face on indigenous governance, as early as possible, will contribute significantly to winning the competition for governance. Additionally, and noting the importance of cultural sensitivities, any effort to develop indigenous capacity must resist the temptation to impose a Westernised template to a problem instead of looking to empower traditional structures.

55. The speed and effectiveness of Security Sector Reform will often dictate the pace of recovery in other areas within this line of operation. As such this line of operation is heavily dependent on the success of Joint Land Combat and Population Protection. Consequently, conduct of this line of operation will become more prominent during the steady state period of the campaign.

56. When planning Indigenous Capacity Building operations the Land Force should, where possible, localise actions in partnership with local and district leaders. This approach energises key relationships and enhances the military response by:

a. Creating synergies and alignment with the other lines of operation;

b. Enabling local leaders to communicate and have a hand in solving the true needs of the people.

c. Creating economies of scale that allow land forces to accommodate other priorities;

d. Promoting a long-term approach to the restoration of law, order and stability;

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[7] For the Land Force, a logical main effort within this line of operation will be Security Sector Reform. The Security Sector includes all those organizations that have the authority to use, or order the use of, force or threat of force, to protect the state and its citizens, as well as those civilian structures that are responsible for their management and oversight.

e. Enhancing the likelihood of qualitative HUMINT; and

f. Setting conditions for the transition.

57. By its nature, Indigenous Capacity Building requires an incremental approach that is long term in perspective despite the fact that immediate and visible improvements to local and national governance will be expected by both local and international audiences. Constant holistic assessment will be required to ensure that actions taken within this line of operation are harmonised with actions taken in the other lines of operation and that expectations of success are managed across the joint interagency task force.

> A recent example of Indigenous Capacity Building as a line of operation was the Regional Assistance Mission Solomon Islands (RAMSI). During RAMSI, Indigenous Capacity Building was founded on three governance pillars. **Economic development** comprised economic management, financial stability, and improvements to the enabling environment for the private sector. **Machinery of Government** comprised more effective cabinet and parliamentary processes, reform of the public service, the development of accountability mechanisms, and electoral and civic education. **Law and Justice** comprised reform of the indigenous police force, a stronger judicial sector and improved prison services.
>
> DFAT Paper - Regional Assistance Mission Solomon Islands

Functional Analysis of Indigenous Capacity Building

58. Indigenous Capacity Building is predicated on four basic requirements:

a. **Understand** - the ability to understand the unique governance and civil service requirements of the environment;

b. **Capacity** - capacity to supply specialist staff to assist with development;

c. **Enable** - the ability to enable the creation of effective solutions through a whole of government approach; and

d. **Engage and Monitor** - the ability to engage and monitor developments to ensure alignment across all lines of operation.

59. **Understand.** Understanding the machinery of governance, the economic system, political dimension, and the legal apparatus that either exists or is absent within the assigned environment is critical to this line of operation. To truly analyse the nature of the problem, the Land Force requires an accurate appreciation of normalcy patterns[8]; an approach broader than the traditional military Intelligence Preparation of the Battlefield (IPB). Key land force personnel will need to be broadly educated in the basics of civil governance, town planning, economic and political systems and anthropology. To ensure the Land Force is adequately prepared to conduct Indigenous

[8] Normality is defined in Complex Warfighting as an acceptable level of political violence, a pattern of social interaction normal for that culture and society, viable economic processes.

Capacity Building the force needs to understand how to manage a population and restore and rebuild a city at least as much as it needs to understand how to conduct combat.

60. **Capacity**. While traditionally this may not be seen as a military responsibility, the risk of not completing such tasks creates opportunity for adversary elements to gain influence over the population. Consequently the Land Force will need to have the capacity to initially supply specialist staff to provide these functions until relieved by other legitimate agencies. Land force capacity can be reinforced by developing reach back capabilities to allow operational and tactical commanders and their staff to remotely access expert technical advice and or assistance.

61. **Enable.** When conducting this line of operation the guiding principle must be to empower appropriate indigenous structures as soon as possible. While ideal, this approach will not always be possible and the Land Force may need to assume lead roles in establishing required levels of governance and civil service function. As a result, key personnel within the force require suitable training and credentials to fulfil the functions of town mayors, legal appointments, through to civil service responsibilities.

62. **Engage and monitor.** The Land Force must remain engaged in all aspects of Indigenous Capacity Building to ensure alignment across all lines of operation within the campaign. The Land Force requires the ability to monitor the effectiveness of services provided and their impact on the population. This will be enhanced by fostering the continued development of coordination mechanisms between the force, indigenous groups, OGAs and NGOs.

Population Protection

63. Population Protection operations include actions to provide immediate security to threatened populations in order to control residence, identity, movement, assembly and the distribution of commodities, therefore setting the conditions for the re-establishment of law and order. Population Protection operations have an immediate and a longer term purpose. In the first instance, Population Protection operations are designed to defuse widespread civil unrest and restore a degree of order to daily life. In the longer term, Population Protection operations are conducted in concert with Indigenous Capacity Building to re-establish legitimate law and order and return the affected societies to an acceptable level of normality.

64. The types of actions taken in Population Protection operations include, but are not limited to:

a. Security of threatened populations;

b. Constabulary functions including arrest, investigation, processing and detention of criminals;

c. Crowd control/ riot control;

d. Vehicle and personnel movement control;

e. Special Recovery Operations and Close Personal Protection for selected dignitaries;

f. Physical security of key points;

g. Patrolling;

h. Covert surveillance;

i. Cordon and search;

j. Arms control, including disarmament, accountability, audits and destruction;

k. Explosive Ordnance Disposal and hazardous material management;

l. Assistance in the registration of residents;

m. Inspection of identity documents/passes;

n. Restriction of movement / supervision of curfews; and

o. Protection of the production, storage, and distribution of foodstuffs.

65. In most cases, military operations will be conducted under a specific agreement with either a host nation or multinational organisation. At least initially it is possible that the military will be required to fulfil some roles normally associated with law enforcement agencies. Failure to do this may create a security vacuum that could be exploited by a variety of interest groups that may or may not be parties to the conflict. Therefore, the need for Population Protection operations and the authority to conduct necessary actions needs to be anticipated in planning and provided for in the implementing agreements.

66. By their nature Population Protection operations requires large scale collective action. Therefore the capacity for Population Protection rests in the following capabilities:

a. Organisation;

b. Command, control, communications, intelligence and surveillance;

c. Logistics;

d. Tactics, techniques and procedures; and

e. Training.

67. The size and nature of any operational deployment and the relative balance between law enforcement agencies and military contributions will be driven by a consideration of the above factors and will be shaped by the operational uncertainty that exists within the theatre of operations. Traditionally police forces are optimised for law enforcement operations in a permissive to low threat environment. In contrast, military forces, whilst being able to operate throughout the threat spectrum, are optimised for combat operations in medium to high threat environments. Consequently, operations that occur at the junction between law enforcement and military operations and/or those operations that involve a high level of operational uncertainty pose a particular challenge in that neither the police nor the military are optimised for these types of operations.

68. Recent operational experiences and future warfighting trends indicate an increased likelihood of operations occurring at the boundary between traditional military and policing operations. These operations are also likely to encompass high levels of operational uncertainty. Therefore there is a need to address this capability gap.

69. Given police limitations in terms of capacity, force protection, deployability, logistics and work practices it is unlikely that the police could be expected to expand to fill the capability gap on their own. While it is acknowledged that the police are capable of conducting large scale

security operations on mainland Australia, they remain limited in their ability to project and sustain a similar capability offshore. These limitations are further exacerbated in uncertain or high threat environments. In contrast, the Land Force would be capable of expanding its capabilities to fill the identified capability gap; however, in isolation this would represent a costly and sub optimal solution to the current problem with the potential to detract from the Land Force's primary roles.

Functional Analysis of Population Protection

70. By enhancing the capabilities and interoperability of both the police and the ADF simultaneously, the resultant product is a collective capability more prepared for paramilitary type operations. This approach seeks to combine the comparative strengths of both, thereby compensating for their respective weaknesses. This approach is dependant on the following:

a. **Coordination**;

b. **Doctrine and Training**;

c. **Non Lethal Capabilities**;

d. **Military Police Capabilities**;

e. **Enhanced Police Capabilities**;

f. **Linguistic and Cultural Sensitivity and Positive Perceptions**; and

g. **Logistics**.

71. **Coordination**. A Joint Interagency coordination mechanism comprising representation from AFP, DFAT and the ADF would need to be established to identify, define and address capability gaps. This includes joint and interagency planning tools and intelligence sharing mechanisms that enable early engagement of other government agencies during the strategic, operational and tactical planning processes.

72. **Doctrine and Training**. Frequent joint and combined exercises that involve AFP and land force combined arms teams operating together within realistic training scenarios will stimulate the development of robust TTPs and combined doctrine.

73. **Non Lethal Capability.** The Land Force's non-lethal capability is embryonic in nature and is currently limited in terms of depth and weapon array. This limits the Land Force's ability to effect crowds at distance. The Land Force's non-lethal capacity needs to be improved to enable it to project non-lethal effects, at distance, to shape and influence crowds. An important aspect of enhancing the current non-lethal capability is instilling in the Land Force a culture and an ROE which reflects a graduated response between non-lethal and lethal force.

74. **Military Police**. The ADF's Military Policing capacity, specifically focusing on their deployable investigation, processing and detention capabilities, needs to be enhanced.

75. **Police**. It is likely that the capacity and readiness levels of the police would need to be increased. In addition, police would need access to commensurate levels of protection, mobility and communications.

76. **Linguistic and cultural sensitivity**. An important aspect of Population Protection operations is developing the trust of the population through a combination of intimacy and

affinity. This enables the force to understand local behaviours and population normalcy. This requires that a base level of linguistic and cultural skills exist throughout the deployed force.

77. **Positive Perceptions**. Most Third World populations are intimidated by the presence of a military force. This stigma has the potential to limit the ADF's ability to get close to and develop intimacy with the population. Therefore, the ADF needs the capability to produce and disseminate public information in printed and electronic media in order to explain their actions and intentions, advise the public on what they should, and should not, do and counter enemy propaganda. The production of this type of material is fundamental to shaping the perceptions of the population and critically important to the success of the other lines of operation.

78. **Logistics**. The ADF needs to have the logistics capacity to support large contingents of other government agencies on operations.

Public Information

> *The success or failure of a military mission can often rest with the willingness of the public to support the government in the conduct of military operations. Therefore, the ability to accurately inform the government and the public in a timely and relevant manner during military operations remains critical to the success of the operation.* General Peter Cosgrove

79. Public Information is a collection of capabilities brought together and focused to inform and shape the perceptions, attitudes, behaviour and understanding of targeted population groups in order to reinforce actions within the other lines of operation. Public Information underpins every element of Adaptive Campaigning and is an essential prerequisite for success. Public Information may be either defensive or offensive in nature:

a. Defensive Public Information is concerned with either reacting to antagonist propaganda or pre-empting it.

b. Offensive Public Information is designed to take the initiative. It will aim to justify the government's aims and methods, promote the credibility and legitimacy of the security forces and their operations and isolate the antagonists from their local community and international support. Target audiences include local indigenous, domestic and foreign population groups. Simultaneously, Public Information will be directed towards fostering links and loyalties between the security forces and the local population.

80. The pervasiveness of the media combined with the effects of globalisation and technology has resulted in events, almost anywhere in the world, being able to be reported on instantly. Consequently, the contest to tell one's story before the opposition is becoming ever more influential in the final outcome of conflict.

81. In conflict today, antagonists aim to promote their cause and rally support for it, create an impression of effectiveness and inevitable victory, discredit their opposition and its forces, and destroy public morale. An antagonist's messages will be principally directed at the uncommitted, disadvantaged minorities, political factions which may be persuaded, vulnerable elements of the apposing force and the media. Consequently, the Land Force must have the capabilities and capacity to strengthen the support of the loyal, gain support of the uncommitted and undermine an enemy's will to fight - the ability to accurately tell its story while being able to discredit the lies and propaganda of its adversaries.

82. Land forces cannot exclusively use technology as a compensator in this line of operation, because influencing people and their perceptions is fundamentally a human activity that requires personal contact, proximity and enduring presence. This means that the ability to put high-quality individuals and teams into an area of operations, in close proximity to the enemy and the population, is critical. Therefore at the lowest level, every member of the force must be capable of acting as a tactical ambassador and achieving intimacy with the population.

83. This means all personnel in theatre (including interagency elements) must be trained in basic media skills, cultural and linguistic skills and country knowledge. They must be regularly briefed on information objectives for media coverage and interaction with the local population. Most importantly, they must be imbued with a sense of the fundamental importance of perception management in the operation, so that – in thousands of daily interactions – their actions support the mission by avoiding dissonant actions and seizing fleeting chances to advance informational objectives.

Functional Analysis of Public Information

84. Public Information operations is predicated on four basic requirements:

a. **Assess** - the ability to understand the social, cultural and values framework of target populations;

b. **Plan and Integrate** - the ability to effectively plan and integrate effort across the Land Force and between OGA and NGOs;

c. **Disseminate** - the capacity to disseminate key information messages to targeted population groups; and

d. **Monitor** - the ability to measure the effectiveness of the message and adapt it if required.

85. **Assess**. Every society has a structure of ideas, attitudes and customs instilled by its culture, spiritual beliefs and social systems. Some of the sociological mores and patterns of thought are so firmly entrenched that they cannot be altered. Other attitudes can be modified but only slowly and carefully. It is essential to distinguish between those attitudes which are malleable and those which are not. To harness this approach, the Land Force requires greater access to detailed cultural and anthropological information on target population groups.

86. **Plan and Integrate**. Public Information operations must be planned and coordinated across the force from the outset. The Land Force needs to adopt a planning culture that places greater emphasis on the planning and conduct of Public Information. These operations must be seen as central to a campaign rather than as an afterthought. Planning must embrace a joint-interagency approach that enrols support from key OGA and NGOs. Just as there is a whole of government approach to campaigning, there needs to be a whole of government approach to the development of Public Information objectives and themes.

87. **Disseminate**. Combined arms teams need the ability to create and disseminate information, in accordance with campaign themes, which explain their actions or intentions and informs the public on how to avoid or counter enemy propaganda. This form of influence is one of marketing rather than one of propaganda. Capabilities required include responsive access to media products, leaflets, mass printing facilities and broadcasting facilities. Additionally, the Land Force must have the ability to test, disseminate and evaluate messages and themes prior to mass

dissemination. Finally, responsibility for disseminating agreed messages must be devolved wherever possible to the lowest practical level.

88. **Monitor**. Managing the perceptions of people is a continuous cycle that requires constant feedback, assessment and adaptation. This process needs to occur across all levels of an operation, consequently formal coordination mechanisms at the tactical, operational and strategic level need to exist.

IMPLICATIONS FOR FORCE MODERNISATION

89. Examination of *Adaptive Campaigning* cannot occur along individual lines. The Land Force's ability to influence and shape the perceptions, allegiances and actions of a population is predicated on the ability to apply orchestrated actions simultaneously across all lines of operation. Therefore the Land Force must be optimised as a flexible, agile, resilient and responsive force ready to win the land battle regardless of the dynamic challenges.

> To wage *Adaptive Campaigning* the Land Force must be optimised for flexibility, agility, resilience, and responsiveness as key enablers in their own right, independent of specific scenarios, allowing the force to generate a wider range of capabilities and transition between them more readily.

90. A traditional approach to capability development seeks to analyse the external strategic environment, then optimise the ADF to operate in that environment. Because of its complexity and operational uncertainty, the external strategic environment is virtually impossible to understand in sufficient detail to confidently predict all the capabilities likely to be required in the ADF, particularly over the long lead-times required for capability development and acquisition. In any case, ADF threat and mission profiles are subject to such change that any understanding of the environment, at a given moment, only represents a 'snapshot' of a rapidly changing situation. Hence, to be effective in contemporary conflict, there is a need to move toward a capability development approach that seeks to provide a balanced force that is able to rapidly adapt to change.

Chief of Army's Development Intent

91. The defence of Australia and its interests from armed attack remains the highest national priority. The Chief of Army's Development Intent (CADI) provides a framework to generate a balanced force with the agility to react to a wide range of circumstances including the Defence of Australia, its people and their interests. The CADI, at the Army program level, details design rules that will allow concept development and force modernisation staffs to generate an Army that is capable of performing effectively across all lines of operation.

> Chief of Army's Development Intent is to develop an Army that is, if necessary, able to operate simultaneously across all lines of operation, in particular through the conduct of sustained close combat in order to win the land battle.

92. The Army is to conform to the following design rules:

a. Force Modernisation is to be predicated on the abilities of Fighting – Learning – Adapting – Winning.

b. The Army is to be optimised for sustained close combat, predominantly in urbanised terrain, as part of a joint inter-agency task force.

c. The Land Force is to be capable of planing, integrating, balancing and executing actions across all five lines of operation at the individual, Combined Arms Team, Battle Group and Joint Interagency Task Force level.

d. The Army is to maintain a high level of interoperability with its key allies.

e. Every soldier is to have appropriate access to protected mobility, firepower, situational awareness and stealth to enable them to perform their missions without undue risk.

f. All elements of the force are to be provided with devolved situational awareness, including a common relevant operating picture, access to key intelligence products, and logistics situational awareness.

g. Access to responsive joint fires (including organic fires and force-level offensive support) is to be devolved to, or accessible to, small teams & individuals across the force.

h. Elements in the combat force are to have a modular, flexible structure which allows rapid regrouping and application of precision combined arms effects at the small team level.

i. Elements in the combat force are to have a devolved capacity for unit or small-team ISR.

j. The Army is to develop a comprehensive array of non-lethal capabilities throughout the force both at the individual and collective level.

k. The Army is to apply a command philosophy, training & education system that empowers junior leaders for complex, unpredictable tasks.

l. The Army is to regard linguistic and cultural capability as a combat capability in its own right, and is to train, organise and employ combat linguists and regional specialists accordingly.

m. The Army is to build into its structure a high degree of organisational redundancy and the ability to rotate and replace forces in theatre, hence there should be no 'single-shot' or single-element capabilities in the inventory of land force capabilities. The Army is to move from an Army of 'twos' to an Army of 'threes'.

n. The Army is to exhibit a philosophy of physical and organisational robustness, in regard to CSS support, training, facilities, personnel processes and headquarters staffs.

SUMMARY

93. This document outlines the Land Force response to the Future Land Operational Concept - *Complex Warfighting*, as part of the military contribution to a Whole of Government approach to resolving conflict. Complex Warfighting described war as fundamentally a human, societal activity, rather than a technical or engineering problem. In essence, War is '*conflict using both violent and non-violent means, between multiple diverse actors and influences competing for control over the perceptions, behaviour and allegiances of human societies*'. The interplay between multiple diverse actors all competing for the allegiances and behaviours of societies creates a complex system that is capable of learning and then adapting, both at the individual and collective level – a *complex adaptive system*. As a result, a new approach to the planning and design of operations is required.

94. The Land Force response to these challenges is defined as *Adaptive Campaigning.* The purpose of *Adaptive Campaigning* is to influence and shape the perceptions, allegiances and actions of a target population to allow peaceful political discourse and a return to normality. *Adaptive Campaigning* comprises five interdependent and mutually reinforcing lines of operation: *Joint Land Combat*, *Population Support*, *Indigenous Capacity Building*, *Public Information*; and *Population Protection.*

95. The complex tactical environment impacts across all five lines of operation and is characterised by complexity, diversity, diffusion and lethality. This characterisation is premised on three connected and enduring warfare trends; evolving lethality which promotes an emptying of the battlespace which in turn has caused a retreat into complex terrain. The result of these trends is that operations against both regular and irregular enemies will have a number of characteristics in common, specifically:

a. Operations will increasingly take place in urban terrain as adversaries try to shelter below the Land Force's discrimination threshold;

b. Land forces will normally find themselves fighting for, and not necessarily with, all of the information they would like;

c. The Land Force will be required to operate in a larger number of smaller manoeuvre elements to dominate the ground and generate actionable intelligence;

d. Mutual support will be increasingly reliant on offensive support – joint fires[9];

e. Small ad-hoc joint combined arms teams, in which joint fires become a temporary but essential component of the team, will be the basic manoeuvre element;

f. Individuals and combined arms teams must be able to survive first contact with the enemy; and

g. Survivability will rely on enhanced levels of individual and vehicle protection and increased responsiveness of joint fires.

96. As a consequence of having to fight for, and not necessarily with, information situational understanding will flow from physical interaction with the problem rather than from remote analysis. In response land force action will be characterised by the Adaption Cycle (Act-Sense-Decide-Adapt). Iterations of this cycle will enable the Land Force to develop a more complete picture of the tactical problem. To gain and retain the initiative the Land Force must be capable of rapidly adapting to the emerging situation.

97. Given the complexities of the battlespace the key to the Land Force's success will be its ability to effectively orchestrate effort across the five lines of operation:

a. **Joint Land Combat**. Joint Land Combat includes actions to remove organised resistance and set the conditions for the other lines of operation. Joint Land Combat is the core business of the Land Force and represents its unique contribution to government. Joint Land Combat is predicated on six basic demands: the ability to understand and direct actions within the complex environment; the ability to manoeuvre and survive in complex terrain; the ability to adapt to the evolving

[9] Joint Fires includes organic fires and force level offensive support

challenges of the battlespace; the ability to access responsive joint fires; protected logistics and the ability to rapidly task organise.

b. **Population Protection**. Population Protection includes actions to provide immediate security to threatened populations. Population Protection predicated on increased coordination between the police and the military, enhanced non lethal capabilities; increased military police capacity and enhanced logistical support, linguistic and cultural sensitivity and positive perceptions.

c. **Public Information**. Public Information is a collection of capabilities brought together and focused to inform and shape the perceptions, attitudes, behaviour and understanding, of targeted population groups to reinforce actions in the other lines of operation. They are predicated on four basic requirements: the ability to understand the social, cultural and values framework of target population; the ability to effectively plan and integrate effort across land force and between OGA and NGOs; the capacity to disseminate key information messages to targeted population groups; and the ability to measure the effectiveness of the message and adapt it if required.

d. **Population Support**. Population Support includes actions to provide essential services to affected communities. Population Support operations are integrated actions involving military forces, OGA and NGOs. These operations are predicated on three basic demands: the ability to understand and prioritise the needs of the environment and effectively integrate effort across both agencies and indigenous communities; the capacity to respond and meet the basic essential requirements; and the ability to transition responsibility to the appropriate agencies to include indigenous structures.

e. **Indigenous Capacity Building**. Indigenous Capacity Building includes actions taken by the Land Force to assist in the development of effective indigenous government, security, police, legal, financial and administrative systems. These operations are predicated on four basic requirements: the ability to understand the unique governance and civil service requirements of the environment; the capacity to at least initially supply specialist staff to assist with development; the ability enable the creation of effective solutions through a whole of government approach; and the ability to engage and monitor developments to ensure alignment across all lines of operation.

98. This document provides conceptual and force modernisation direction to Army to ensure it remains postured to meet the demands of the future operating environment. It emphasises that influencing people and their perceptions is fundamentally a human activity which requires personal contact, proximity and an enduring presence. This means that regardless of technological advances, reducing force density on the battlefield, virtual theatres and improvements in communications, the ability to conduct sustained close combat with the enemy and amongst the population is critical. As such, the Chief of Army's Development Intent is to develop an Army that is able to operate simultaneously across all lines of operation, in particular through the conduct of sustained close combat, in order to win the land battle. Therefore, every soldier, regardless of specialisation, must have a warfighting focus and a high level of combat skill.