COMPLEX WARFIGHTING

EXECUTIVE SUMMARY

- This document, the Future Land Operational Concept (FLOC) analyses the environment of contemporary conflict, in order to determine how land forces (the Army and those elements of the Navy and Air Force that support land operations) must operate in order to succeed in this environment.

- The FLOC identifies the contemporary conflict environment as complex, diverse, diffuse and highly lethal. In this environment, land forces will be required to undertake an extremely wide range of tasks simultaneously within the same geographical area, at short notice and in complex, urbanised terrain.

- To operate in this environment, land forces must be versatile, agile and able to orchestrate effects in a precise and discriminating fashion. This demands modular, highly educated and skilled forces with a capacity for network-enabled operations, optimised for close combat in combined arms teams. These teams will be small, semi-autonomous and highly networked, incorporating traditional elements of the combined arms team as well as non-traditional elements such as civil affairs, intelligence and psychological warfare capabilities. They will have a capacity for protracted independent operations within a joint interagency framework.

PURPOSE OF THIS DOCUMENT

This document represents the Australian Army's **best estimate** of the likely future operating environment, and **a possible response**. The response articulated is not the only possible response, and **is not authoritative doctrine**. Rather, this is a detailed hypothesis for testing, field trials and further development. This concept is a start point for further analysis, experimentation and force design, leading to capability development – it does not represent an endstate in itself.

Future Land Warfare Branch leads the work that defines the Army of the future. It does this through the production of concepts that underpin Army's concept-led and capability-based approach to modernisation. Army's future concepts provide the start point for experimentation and force design within the framework of the Army Continuous Modernisation Process. Future Land Warfare Branch actively encourages feedback and comment from Army and the broader Defence Organisation.

Future Land Operating Concept   *Complex Warfighting*

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INTRODUCTION

Background

1. This document, *Complex Warfighting,* is the Australian Army's Future Land Operational Concept (FLOC). It examines 21st century conflict from the perspective of land forces (the Army and those elements of the RAN and RAAF that support land operations).

2. The FLOC conforms to the ADF Future Warfighting Concept (FWC), which states that 'the challenges of complex environments reinforce our view that warfare is *multidimensional.* We view conflict not just in space and time, but also in context – a context created by the physical, political, cultural and informational environments where conflicts are fought.'[1] The concept states how land forces execute the FWC concept of *Multi-Dimensional Manoeuvre* at the operational and tactical level. The concept guides subordinate Land concepts including Manoeuvre Operations in the Littoral Environment (MOLE), Protective Security on Australian Territory (PSAT) and Contribution to Coalition Operations Worldwide (CCOW).

3. The FLOC sets the context for these documents, integrates subordinate concepts into a coherent approach to land operations, and states parameters for capability development. The FLOC states the key operational effects that land forces bring to joint operations. It describes the features that are common to all types of land force operational environments, tasks and capability requirements. The relationship between the FLOC and other Joint and Army concepts is described in more detail at Annex A.

Concept Structure

4. The FLOC is in two parts:

    a.   **Part 1 – The Environment** analyses the environment of 21st century conflict;

    b.   **Part 2 – The Response** articulates:

        (1)   an **operational concept** that describes land operations in this environment;

        (2)   a **capability concept** that describes how land forces must be structured, organised, trained and equipped for mission success; and

        (3)   The **Chief of Army's Development Intent** (CADI), which describes the design rules that will allow the Army to develop from its current position towards a capability for Complex Warfighting.

PART 1: THE ENVIRONMENT

The key driver is Globalisation

5. The key influence on contemporary conflict is Globalisation. A widely accepted definition of Globalisation is 'a process of increasing connectivity, where ideas, capital, goods, services, information and people are transferred in near-real time across national borders'.[2]

6. Globalisation, during the last decades of the twentieth century, has created winners and losers. A global economy and an embryonic global culture are developing, but this has not been universally beneficial. Poverty, disease and inequality remain major problems for much of the world, and the global economy has been seen as favouring the West while failing developing nations. The developing global culture is perceived as a form of Anglo-Saxon

cultural imperialism: corroding religious beliefs, eroding the fabric of traditional societies, and leading to social, spiritual and cultural dislocation. This has created a class of actors – often non-state actors – who oppose Globalisation, its beneficiaries (the developed nations of the 'West') and, particularly, the US.

7. Globalisation has created enemies of the West, and given them unprecedented tools to further their cause. Globalised media, satellite communications, international travel and commerce, and the Internet facilitate the coordination of diffuse movements that oppose Western dominance. The free flow of capital, people and ideas allows the spread of movements inimical to Globalisation, and provides them the means to further develop.

8. Moreover, Globalisation is not fully controllable by governments. Multi-national corporations, trans-national organisations, and non-government actors are key players in Globalisation. Indeed, this is one reason why inequalities and problems have developed: in many cases, forces other than conscious national policy drive the process of Globalisation. This hampers an effective response to the opposition provoked by Globalisation.

9. Finally, national security, like almost all of national life, has become globalised. Under Globalisation, a nation's security interests no longer equate to its territory. Indeed, the Government's 2003 foreign policy White Paper emphasised this, stating that 'Australia's interests are global in scope and not solely defined by geography'[3]. National security concepts based on geographical theories such as the 'sea-air gap' or the concentric circles of the 1980s 'defence in depth' concept are hence not applicable to Australia's circumstances. Such geographical determinism assumes Australia will automatically be secure if we keep an adversary out of our physical space. However today, Australia's economic, political, technological, and industrial interdependence with the rest of the world means that our interests and sovereignty can be seriously threatened without an attack upon our territory.

United States Military Dominance

10. Due to its economic and technological superiority, partly resulting from Globalisation, the US has unprecedented dominance in conventional military power. All actors – state or non-state – whether they wish the US well or ill, must take account of this military power, which renders the US essentially invincible in a conventional, force-on-force military confrontation. Conventional wars therefore tend to be brief, intense, and one-sided, resulting in rapid victory for the US, its allies, or the side in a conflict which best approximates US capabilities.

11. This has meant that conventional war has ceased to be the primary arena for military confrontation. US dominance has led to asymmetric 'avoidance behaviour' by its opponents. These opponents cannot defeat the US in conventional war: direct military confrontation against US Forces is essentially un-winnable. Thus actors such as Al Qa'eda have adopted an asymmetric grand strategy in which they seek arenas other than conventional military operations in which to confront the US. They have also adopted an asymmetric theatre strategy, which seeks to draw the West into increasing, protracted and exhausting confrontation with the rest of the world, particularly the Islamic world. At the operational and tactical level this strategy is executed through unconventional means – terrorism, insurgency, subversion and information operations – making decisive military responses problematic.

12. Hence, victory in conventional battle may no longer be decisive. If the opponent seeks to confront us in an arena other than conventional military conflict, then a strategic decision may remain elusive regardless of how effectively our forces perform in actual combat. In these circumstances, military success is essential to set the conditions for success. But it is not decisive: other elements of national power must be applied – on a Whole-of-Government basis – to resolve the conflict. The war in Iraq is an example. Military success against the

Ba'athist regime was an essential prerequisite to achieve the US war aim of 'regime change': regime change would have been impossible without removing the threat of the Iraqi Army and government. Thus military success in conventional combat operations was essential, to set the conditions for regime change. However, once major combat operations ended on 1 May 2003, this was the beginning, rather than the end of the strategically decisive phase. Other elements of national power, supported by military security and nation-building operations, became decisive in achieving US war aims.

13. For Australia, US dominance has both positive and negative effects. On the positive side, the risk of conventional military attack against Australia has receded even further. Australia's partnership with the US makes direct conventional attack upon Australia an extremely foolhardy course of action for any adversary. This does not mean it is impossible – war, although often serving rational policy objectives, contains elements of irrationality and blind chance which may lead an opponent to attack (say, for domestic political reasons or in error) regardless of the likelihood of defeat. But such an attack is highly unlikely. On the negative side, however, the adoption of asymmetric strategies and unconventional means by our enemies exposes Australia to diverse, complex and ambiguous threats that may demand a military response.

14. Globalisation and the related factor of US military dominance create a *complex*, *diverse*, *diffuse* and *lethal* environment. The next section describes this environment in detail.

The Conflict Environment

15. Although some elements in the environment are new, there are continuities between previous forms of warfare and the types of conflict now emerging. These represent long-standing trends within warfare – complexity, diversity, diffusion and lethality. Globalisation and technological progress have caused these long-standing trends to interact in a mutually reinforcing, real-time fashion. Together, these trends generate an escalating complexity that is greater than the sum of its parts, creating new challenges for military forces and governments.

16. To describe the conflict environment and its effects, the FLOC examines each trend. However, what is new about the contemporary situation resides in the unpredictable,

> **Continuity – A *Small Wars* Perspective**
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> There are continuities between previous forms of warfare and the types of conflict now emerging.
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> C.E. Callwell's 1896 classic *Small Wars: Their Principles and Practice* describes, from a British viewpoint, a late-19th century conflict environment of imperial policing, nation-building, and internal security operations that closely resembles current circumstances. Callwell defines small wars as 'all campaigns other than those in which both sides comprise regular troops' – a definition which encompasses most contemporary conflicts.
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> Similarly, the US Marine Corps *Small Wars Manual* 1940 analyses the USMC experience in 'small wars' during the first half of the 20th century, including operations in the Philippines, China and the Caribbean. The *Manual* identifies many of the same issues and factors that apply to contemporary conflict, and recommends an approach broadly similar to the approach advocated in this concept.

ambiguous and highly complex manner in which the trends interact, not in each trend itself.

Complexity

17. Armed forces today must deal with many adversaries beyond their traditional opponents, the regular armed forces of nation states. These include insurgents, terrorists, organised criminals and many other elements. Events in Iraq today reflect this reality, but all our conflicts since the end of the Cold War have seen the ADF simultaneously confronting a variety of opponents. This creates a multilateral and ambiguous environment.

18.   Further, military forces operate within complex groupings of friendly elements. These include allies, coalition partners, law enforcement, intelligence services, other government agencies and the national population. Political will, public opinion and Whole-of-Government national power are thus central features of military operations. These elements interact with military forces in different ways and to different degrees, which complicates planning, decision-making and execution, making warfighting extremely complex. This has always been so, but advances in communications technology mean that this interaction occurs in near-real time, with immediate complicating effects on current operations.

Real-Time Public Opinion and Political Will

Political will and public opinion have always influenced conflict. But globalised media and communications have changed the nature of this influence. Two examples show this: the Alma (1854) and Mogadishu (1993).

The battle of the Alma, the first Anglo-French victory in the Crimean War, was won at high cost in lives. The war correspondent Alfred Russell, of the *Times*, dispatched an account of the battle by telegram, and news of the victory reached London and Paris within days, generating support for the war. The high casualty figures, based on dispatches sent by post, were only published several weeks later and, although they led to serious popular concern over the cost of the war, this was a 'delayed action' effect that took months to emerge.

The battle of Mogadishu is discussed in detail below. It was (narrowly defined) a US tactical victory, but at a high cost in US and Somali casualties. News of the battle arrived immediately in the US, along with video footage of US casualties. This led to serious popular and political concern over the Somalia operation which, rather than being a 'delayed action' effect, occurred in real-time and led to a rapid disengagement by the US.

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19.   Moreover, globalised communications generate numerous onlookers, neutral elements, commentators and critics. International news media are the most prominent, but business interests, international organisations such as the UN, environmental groups, legal agencies, neutral forces and populations, and the adversary's populace itself are also key players.

20.   In addition, the terrain where forces operate is highly complex. This 'complex terrain' includes complex physical terrain, complex human terrain and complex informational terrain:

    a.   **Complex Physical Terrain.** Examples of complex physical terrain include urbanised areas, littoral regions, crop cultivation, swamps and estuaries, jungles and mountains.[4]   Notably, more than 75% of the world's population lives in complex physical terrain. Such terrain typically comprises a mosaic of open spaces (acting as manoeuvre corridors, killing areas or compartments) and patches of restricted terrain which prevent movement and deny observation. This means forces can be drawn into close combat more readily. In open terrain, a force might detect the enemy from standoff distance and avoid it, or engage it only on overwhelmingly favourable terms. In complex terrain the ability to detect the enemy from standoff range is much reduced, meaning that forces can find themselves in close combat without warning.

    b.   **Complex Human Terrain.** Complex human terrain is where numerous population groups coexist in the same physical space – often a city or other urbanised area. These might include ethno-linguistic groups, political factions, tribes or clans, religious sects, or ideological movements. These groups may coexist peacefully, ignore each other, or compete (with or without violence). When military forces operate in this terrain, distinguishing between population groups is extremely difficult and requires sophisticated cultural and linguistic understanding. When one or more groups are hostile, extreme difficulty arises in preventing harm to non-combatants or bystanders. Applying physical force in this environment accepts a high risk of counter-productive unintended consequences.

Anticipating the second- or third-order effects of using force in complex human terrain is therefore important but difficult.

c. **Complex Informational Terrain.** Complex informational terrain is when *multiple sources or transmission paths for communications, data or information (including news media) exist in an operating environment.* A force operating in such an environment will be unable to control information flow in its area of operations. Again, this most often occurs in urbanised terrain, where all sides in a conflict may use the same mobile phone transponders or satellite relays, and gain tactical information from news media operating in the same physical area.

21. Complex terrain is thus composed of physical, human and informational elements which interact in a mutually-reinforcing fashion, leading to extremely high-density operating environments and enormous friction upon military operations. Thus, such operations tend to rapidly become 'bogged down' and stalemated.

Precision warfare creates a demand for operations in complex terrain

For nations with capable navies and air forces that can destroy an enemy using precision assets, land operations in complex terrain are *more likely* and *more necessary.*

This is because, when enemy in open terrain can be reliably targeted and destroyed by air and maritime stand-off weapons, the enemy's only refuge is to operate in close proximity to complex terrain, 'hugging' population groups and urban clutter that allow them to survive against precision assets. This was seen in the Iraq war, where most combat engagements by land forces occurred in, or on the edges of, urbanised areas.

Hence, Australian land forces, which operates in conjunction with capable air and maritime forces, must develop the capacity to conduct close combat in complex terrain – because this is where the enemy will be.

ISTAR Thresholds

22.   In complex terrain, many operations occur at or below the 'Intelligence, Surveillance, Target Acquisition and Reconnaissance (ISTAR) threshold' for deployed forces. A force's ISTAR threshold is the level of enemy activity it can detect in a given environment. This is driven by ISTAR capability, including organic capabilities possessed by the force itself, and ISTAR feeds that the force can access from higher agencies. The more complex the terrain, the higher the level of enemy activity that can occur without detection: terrain 'clutter' tends to prevent the force from detecting enemy activity until close combat is already under way.

23. Therefore, in complex environments, land forces must allocate greater resources to organic, unit-level ISTAR so that deployed forces can avoid being surprised or wrong-footed by unexpected enemy actions. Moreover, the accuracy and responsiveness of higher-level ISTAR feeds must be as great as possible. This requires a conscious effort to equip, train and structure land forces so as to improve ISTAR thresholds to an acceptable level of risk.

24. However, land forces must also be prepared to fight 'below the ISTAR threshold' – in circumstances where the adversary is not detected until the combat action commences, and where battles develop as a series of surprise, fleeting encounter battles. This requires versatile land forces that undertake a wide variety of tasks, transition in an agile manner between tasks, and orchestrate effects in a complex environment. Even more importantly, it requires a command culture and a tactical decision-making approach that allows commanders to operate effectively in ambiguous, multilateral, rapidly changing, chaotic situations.

Approaches to Complexity

25.   As noted, the trend toward complexity is long-standing. However, in the 20th century, a series of wars that threatened to destroy entire states and cultures (the World Wars and the

Cold War) dominated perceptions, obscuring the more enduring reality of limited conflicts or 'Small Wars'. The industrial technology available to 20th century nation-states, combined with the severe consequences of defeat and even of warfare itself, led many states to adopt an industrial approach to the application of force. They focused on combat operations against the armed forces of enemy nation-states, and left the rest of the conflict environment alone. This approach regarded war primarily as an engineering problem rather than a human one.

26. A more recent approach is known as 'Three Block War'. This idea, advanced by US Marine General Charles Krulak in 1998 and since refined by the US Marine Corps, states that in modern war 'on one city block, a marine will be engaged in combat operations. On another, marines will be providing humanitarian assistance while on a third they will be engaged in counterinsurgency'. This approach acknowledges the need to conduct many tasks simultaneously, and seeks to manage the complexity by doing these tasks at different times, with different forces or in different places in an overall Area of Operations (AO).

27. The industrial-age approach is inadequate for the current environment. Instead, in an extension of 'three-block war', forces must conduct diverse tasks with the same elements, at the same time, in the same place. This 'diversity' is the next key element of the environment.

Diversity

28. The conflict environment has always included terrorists, rural guerrillas, bandits, tribal fighters and mercenaries. But today it also includes drug traffickers, multinational corporations, private military companies, unarmed protesters, environmental groups, computer hackers, rioters, militias, people smugglers, pirates, religious sects, urban guerrillas, media and diplomatic alliances. Many of these groups are not 'threats' in the sense of armed opposition, and applying military force against many of them would be problematic in legal, moral and technical terms. Today's most prominent threat is trans-national terrorists with Weapons of Mass Destruction. But the other threats – including nation-state armed forces – remain and must be addressed simultaneously.

29. By contrast, the ADF is the legally constituted armed forces of a sovereign, democratic nation state, a responsible member of the international community. ADF actions will be characterised by civil supremacy, rule of law, democratic values, respect for human life and dignity, and the need to defend an open society. This means the ADF will differ markedly from its adversaries, and from some coalition partners. In certain areas (such as Rules of Engagement) there may also be differences between the ADF and its traditional allies.

30. Along with the asymmetric 'avoidance behaviour' described earlier, diversity is a major cause of 'Asymmetric Warfare'. Because there are numerous different actors, diversity creates asymmetry – a mismatch of capabilities, cultures, technology, objectives, or will. Asymmetry, in turn, exploits a mis-match in 'defeat threshold' – how much one must damage a force to defeat it. Western forces tend to have high tactical defeat thresholds: they are hard to defeat in actual battle. However, their strategic defeat threshold may be lower than their tactical threshold – they may be vulnerable to changes in public opinion, political will and (perceived or actual) casualty-aversion. Conversely, many potential adversaries have low tactical defeat thresholds: they are easily beaten in combat. But because they are often small, non-state, semi-autonomous groups they are relatively invulnerable to changes in political will, community support or public opinion: they have higher strategic defeat thresholds. This means that how forces operate is as important as winning individual battles, because a minor tactical failure or significant loss of life may have a disproportionate strategic effect. In turn, this means that raising forces' strategic defeat thresholds is critical in preparing for contemporary conflict

> ### Defeat Thresholds – Mogadishu 1993
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> The Mogadishu battle of 3-4 October 1993 is an example of defeat threshold mismatch. US forces displayed impressive tactical superiority. They achieved their mission, retained possession of the field, and killed more than 1000 Somalis for the loss of only 17 Americans. In purely tactical terms, this was a US victory. But strategically, the loss of American life, the casualties among the Somali civilian population in what was ostensibly a peace operation, and the negative media perception of US performance, generated a strategic loss of control for the US – which withdrew almost immediately from Somalia. As will be seen later, these three elements – control, populations and perceptions – are key elements in contemporary conflict.

31.   One key element in dealing with diversity, and the resulting defeat threshold mismatch, is mastering diffusion – the next factor examined.

Diffusion

32.   The globalised environment has seen a diffusion of conflict, so that it no fits traditional conceptual boundaries. Examples are as follows:

   a.   **Levels of War.** Combat has diffused across the strategic, operational and tactical levels of war so that actions at one level have a direct effect at another. This has always been possible, but is now the norm. The actions of junior leaders in combat, or the demeanour of individual soldiers in humanitarian operations, can be broadcast by international media and affect the course of an operation within minutes. The effect on Australia-Indonesia relations of television footage showing the engagement at Motaain, East Timor, in October 1999 is an example of this. This means that the strategic, operational and tactical levels of war are being compressed. Indeed, the operational level of war may be disappearing, 'squeezed out' by the direct interaction of tactical actions with strategic outcomes.

   b.   **State/Non-State Actors.** Non-state actors have always been part of warfare. However, the characteristics of state and non-state actors are becoming increasingly similar. Non-state actors now operate sophisticated weapons systems, may control territories and populations, and possess lethality and technological sophistication that was once the preserve of states and their regular armed forces.

   c.   **Conventional/Special Operations.** Capabilities that once resided exclusively in Special Operations forces are proliferating to the combat force. Every soldier in contemporary conflict requires capabilities such as individual initiative, cultural sensitivity, linguistic competence, mastery of sophisticated weapons and sensors, and a capacity for small group independent operations – characteristics traditionally associated with Special Forces. Meanwhile, Special Operations forces are conducting conventional tasks such as screening, defence and large-scale assault, and simultaneously developing more unconventional skills. Special and conventional operations are becoming increasingly integrated, occurring on the same terrain and relying upon intimate cooperation between combat forces, special operations forces and inter-agency elements. Moreover, although Combat Force tasks are different from Special Operations tasks, all soldiers require flexibility, physical and mental toughness, self-reliance and technical skills that allow them to be highly effective across a wider array of missions.

   d.   **Virtual Theatres.** During the Afghan war in 2002, CIA operatives in Langley Virginia flew Predator remotely piloted aircraft, armed with Hellfire missiles, against Taliban targets. By the traditional definition, Virginia is not part of the Afghan theatre. But with globalised communications, an operator in Langley can

participate in operations as effectively as can a soldier in Kabul. Langley is thus 'virtually' in theatre – the Predator operator needs some form of command and control relationship with the theatre commander, contributes significant combat power to the operation, and might be considered a legitimate Taliban target (hence requiring force protection. Hence, an 'Area of Operations' is now an area where the effects of an operation are felt, not necessarily an area where the forces conducting an operation are physically located. Forces contributing to effects, but not physically within theatre, constitute part of a *Virtual Theatre*. This means the ADF may need to deploy anywhere in the world, in order to achieve effects in our immediate neighbourhood or within Australia itself.

Implications of 'Virtual Theatres'

Virtual theatres arise from globalised communications systems, allowing distributed command and control over vast distances. These systems, many of which are commercially available, benefit our enemies as well as us. For example, the Al Qa'eda leader Hambali directed activity in our region while physically located in Central Asia, and later in Cambodia. While located outside the region, he controlled a 'virtual theatre' including Bali and mainland Australia.

Therefore, areas outside Australia's traditional, geographically defined 'Area of Direct Military Interest' may be used by an adversary as bases or conduits for attacks upon Australia or our critical interests.

Defeating or preventing such attacks may require land forces to operate in a wide variety of terrain and climatic types, geographical zones and tactical modes, to generate effects felt in Australia or the immediate neighbourhood. Configuring land forces purely for operations inside Australia or the immediate region is therefore unviable, as it leaves us vulnerable to attacks from 'virtual theatres'.

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e.   **Home Front/Battlefront.** The home front is now the battlefront. Many actions are taken not for local tactical advantage, but to directly achieve strategic effects in the home front. For Australia, with a lower strategic defeat threshold than some adversaries, this is a key concern. As forces are deployed to achieve an effect in a theatre of operations, their effect on the home front is just as vital. Similarly, the more we apply 'whole of nation' effects, the more our adversaries are likely to consider our whole nation as a legitimate target.

f.   **Combatant/Non-Combatant.** The distinction between combatants and non-combatants is eroding. The use of contractors in the battlespace, and the application of the national effects-based approach (NEBA) to warfighting, has meant that civilians who do not directly engage the enemy nevertheless generate critical war-winning effects. The enemies against whom we are currently engaged clearly regard these 'non-combatants' as legitimate targets. In any case, the traditional distinction between combatants and non-combatants is blurring.

g.   **Wartime/Peacetime.** War has diffused into 'peacetime'. Nations do not formally declare war, nor do ideas like 'total war' apply to most contemporary conflicts. Has Australia been continuously at war since the Prime Minister invoked the ANZUS treaty on 13 September 2001? Or have we fought two separate wars in Afghanistan and Iraq? Or is the nation at peace while the ADF sends expeditionary forces overseas? Whatever the answer, the distinction between peace and war (although still legally significant) is arguably of little practical relevance for the conduct of operations.

h.   **Elements of National Power.** Traditionally, national strength was defined in terms of Political, Military, Economic, Social, Informational and Industrial power, and the military's job was to provide the 'Military' aspect of national power and (in a democracy) studiously ignore the rest. This no longer applies – all elements of national power are being coordinated and integrated by government into a

single national 'Whole of Government' or 'Whole of Nation' effort. Military forces no longer 'own' war, rather they are one component in a national response.

i. **Disaggregated Battlespace.** In complex terrain, in the face of multiple adaptive threats, the traditional notion of 'battlespace' needs refinement. It is more accurate to describe a force's 'mission space' within which 'battle spaces' will irrupt with little warning. Even against a more conventional enemy, the effect of complex terrain will be to create a series of 'mini-battles' between individuals or small semi-autonomous teams. The geographical space between these battlespaces is not empty: it contains non-combatants and uncommitted potential combatants, as well as key infrastructure for population support. This means individual and small team combat capabilities are increasingly important. It is not enough for the overall force to possess key capabilities – it must be able to bring them to bear at the critical place (a small team engagement in complex terrain) and time (a fleeting, unexpected encounter). In a disaggregated battlespace, this factor generates a necessity to proliferate capabilities and control to individuals, smaller teams and sub-units.

j. **Strategic Geography v Tactical Topography.** Strategic geography, in contemporary conflict, has become less important than tactical topography. This has arisen partly because of the phenomenon of 'virtual theatres'. Strategic geography is still important in allocating priorities to threats, but is less influential in determining where Australia's armed forces operate. In a world where terrorists have inter-continental reach, and severe damage can be inflicted on a nation without any conventional invasion, geographical barriers provide little protection. Consequently, given a base level of strategic mobility, the tactical effect of a complex environment is more important the continent on which that complex environment happens to be located.

Lethality

33. Traditionally, Defence forces focused on conventional weapons fielded by regular armed forces. Today, a vast array of new, highly lethal weapons is proliferating. These include eye damage lasers, chemical weapons, biological weapons, nuclear and radiological weapons, thermobarics, electronic and computer network attack, directed energy weapons, and many more. Meanwhile, at least three guerrilla groups in our wider region operate some form of armoured vehicle, while many regional forces have multiple-launch rocket systems, capable anti-aircraft missiles and sophisticated anti-tank weapons. The most prominent lethality issue remains the threat of global terrorists armed with weapons of mass destruction.

34. Importantly, many of these weapons can be carried, concealed and operated by one person. This means 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.

Individualised Lethality – Examples

Anti Armour Weapons

Modern anti-armour weapons, such as the RPG-29 (above) are lightweight, concealable, and sophisticated. The RPG-29 has a range of 800 metres and can penetrate more than 750mm of armour, 1.5 metres of reinforced concrete or brick, and 3.7 metres of logs and earth. It weighs 11.5 kg, breaks into two concealable loads, and can be fitted with laser sights, night optics and thermal sensors. It is lethal against armoured and soft-skinned vehicles, helicopters, strongpoints and buildings

Anti Materiel Rifles

Anti-materiel rifles, such as the Denel PMP 20/14.5 (above) provide accurate, extremely long-range fire against hard targets, key personnel and infrastructure, vehicles, aircraft and troops. The PMP provides a high rate of accurate 20mm fire out to 1300 metres, breaks down into two backpack loads of 12-15 kg, and is concealable in an echelon bag, building, or small vehicle.

Source: *Jane's Infantry Weapons* 2005-2006

Thermobaric weapons

Conventional explosives deliver short-lived, intense blast waves, while thermobarics like the RPO-A (above) deliver a prolonged blast of heat and pressure. The blast characteristics allow it to propagate around corners and through apertures, making it extremely lethal in confined spaces such as buildings. The RPO-A is cheap, light (11 kg), can be operated by one person, and can be easily concealed in a sports bag.

35. The traditional conflict spectrum ranged from humanitarian operations, through peacekeeping and counterinsurgency to limited conflict and major war. The 'low-intensity' end of the spectrum required limited combat power, while the high-intensity end required warfighting capabilities. This is no longer applicable. The 'intensity level' of an operation now describes how often forces encounter high lethality, not whether they encounter it. In high intensity warfare, use of lethal force is frequent or continuous. In low intensity operations it is less frequent but the absolute level of lethality is still extremely high. Because individuals with concealable high lethality have little tactical signature and can be encountered in a range of scenarios, predicting the level of lethality likely to be encountered during operations becomes problematic. This has major implications because it means that each individual engagement – even in a supposedly 'low-intensity' operation – can produce a mass-casualty situation with strategic implications.

36. Notions such as 'reach-back' for combat power, platforms 'fitted for but not with' weapons, and 'warning time' are inappropriate in this context. In a single engagement, one well-armed individual enemy may inflict a strategic defeat unless our land forces can survive a surprise first strike and hit back effectively to overmatch the enemy. Situational awareness and signature management at the small team level are also critical in avoiding surprise engagement in the first place. Thus protection, firepower and mobility plus situational awareness and stealth are critical for land forces in the current lethality environment.

37. Increasing lethality has contributed to a reduction in force density on the battlefield. This trend has been apparent since the industrial revolution, but is now accelerating. Lighter, cheaper and more lethal weapons allow smaller, more dispersed teams to generate battlefield effects that once required large numbers of troops. Companies now perform the same tasks, and have equivalent lethality, to the battalions of fifty years ago or the brigades of the early 20th century. Conversely, the increased risk to deployed forces creates an imperative to limit

the number of troops exposed, lowering force density on the battlefield. Moreover, the range and reach of weapon systems has expanded, increasing the area that can be dominated by a given number of deployed troops, and further reducing force density.

Summary

38. The contemporary conflict environment reflects the consequences of Globalisation, which has created and empowered a diverse range of enemies of the West; and US dominance, which has caused those adversaries to seek asymmetric arenas and unconventional means to confront the West. This renders Australia less likely to suffer a conventional military attack, but more likely to face ambiguous and asymmetric threats, including terrorism. These factors have produced a complex, diverse, diffuse and lethal environment. There are numerous stakeholders; the terrain (in physical, human and informational terms) is complex; the range of threats is diverse; traditional conceptual distinctions have diffused, and individuals now have the capability to inflict strategic defeat through high-lethality weapons.

Deductions from the environment

39. Key deductions from this survey of the conflict environment are as follows:

   a.   From **complexity**, we deduce that land forces must become better at orchestrating effects in an agile, whole-of-government manner across the full range of military operations in complex terrain.

   b.   From **diversity**, we deduce that there is a requirement to raise the strategic defeat threshold for deployed land forces, and become more adaptable and agile in performing, and transitioning between, a wide range of tasks and environments.

   c.   From **lethality**, we deduce the need to improve force protection through instantaneous access to firepower, protection and mobility, improved situational awareness and stealth.

   d.   From **diffusion**, we deduce the need to prepare individuals and small teams for a disaggregated, ambiguous, lethal and highly complex battlespace.

40. This, then, is the environment of contemporary conflict. Part 2 describes land forces' response to this environment. It outlines how land forces operate in complex warfighting, and the capabilities needed to ensure mission success.

PART 2 – THE RESPONSE

HOW LAND FORCES OPERATE IN CONTEMPORARY CONFLICT

Army's Philosophy of War

41. Humans use philosophy to make sense of reality, as a framework for interpreting complex events. There is evidence that a military force's warfighting philosophy reflects its mental 'image of war' and affects all aspects of organisation, deployment and employment. Therefore, the Army's philosophy of war is the start point in describing how land forces must operate in the environment outlined above.

42. The Australian Army's philosophy of war views warfare as fundamentally a human, societal activity, rather than a technical or engineering problem. 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. As described in Land Warfare Doctrine 1, *The Fundamentals of Land Warfare,* war has enduring features but manifests itself differently in different historical periods or objective conditions. The enduring features of war include friction, danger and uncertainty. Further, although conflicts differ, these differences arise from a small number of variables including human interaction, the physical domain, innovation and chance.

43. A past manifestation of war's enduring features was the inter-state conflict of the 19th and 20th centuries. These wars took the form of a dialectical clash of wills, between two opponents (or groups of opponents), expressed in violent conflict between the armed forces of nation-states. Disarming or defeating the enemy's will through battle was the central, decisive activity of this form of war. This assumed the enemy was a rational actor, who could recognise loss, apply a cost-benefit calculus, and ultimately accept defeat. Clearly, this past manifestation does not fully describe the contemporary conflict environment.

44. As described above, US conventional military dominance has generated asymmetric 'avoidance behaviour' by adversaries seeking an alternative arena in which to confront the West. This has led to a manifestation of war 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. Control of populations and perceptions is the central and decisive activity of this form of war, and battle (if it occurs) is a means to that end, never an end in itself. Military forces are only one component within an integrated Whole-of-Government effort, that applies all elements of national power in a coordinated manner.

Quality People are Central

45. If war is fundamentally a human activity, and if the current manifestation is based on controlling people and their perceptions, then it follows that warfare in the land environment is 'human-centric'. This means that (regardless of technological advances, reducing force density on the battlefield, virtual theatres and improvements in communications) 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 in land warfare. It also follows that quality of people is the key determinant of success – a larger number of poorer troops, in a high-lethality complex environment, will simply produce more casualties without improving combat performance.

46. Conversely, because controlling people and their perceptions is a fundamentally human activity which requires personal contact, proximity and enduring presence, land forces cannot use technology to compensate entirely for lack of personnel numbers. There is a minimum force density below which, regardless of technology, land forces cannot effectively control an area of operations. This means that, into the future, the Army will remain the most personnel-intensive service of the ADF, and a balance must be struck between having enough people to do a task, and sufficiently high-quality people to do the task well.

47. It also means that every soldier, regardless of specialisation, must be primarily an operator – with a warfighting focus and a high level of combat skill. Every soldier must be able to work and fight effectively, without relying on others to provide force protection. This philosophy underpins the Complex Warfighting operational concept.

Complex Warfighting – Operating Concept

48. The operating concept for land forces in complex warfighting is as follows:

> *Complex Warfighting operations demand the application of precise and discriminating force, in a whole of government framework, to influence and control populations and perceptions.*

This demands land forces that can conduct close combat in complex (probably littoral and urbanised) terrain, in small but capable teams with high lethality, mobility, protection and situational awareness. They must be able to perform an extremely wide range of operations and transition between them in an agile manner. Success does not depend upon the destruction (even the precision destruction) of platforms and targets. Such destruction may still occur, but it is always a means to the end of controlling populations and perceptions. Military forces provide one element in a coordinated campaign applying all elements of national power.

49. Importantly, as already described the compression of the conventional, operational battlespace that has resulted from US dominance means that combat operations may no longer be decisive. Military forces must be able reliably to deliver success in battle, but combat success alone will not result in victory unless combined with effective actions in the decisive arenas of confrontation – political, economic, ideological or social.

50. **Combined Joint Interagency Task Forces.** Complex Warfighting operations will be conducted by Combined Joint Interagency Task Forces (JIATFs). These task forces incorporate all elements of national power in an integrated framework, tailored and scaled to the requirements of a specific mission. JIATFs are, in effect, a combined joint interagency form of combined arms team. JIATFs are described in more detail at Annex B.

51. **Integrated Campaigns.** JIATFs execute integrated campaigns specifically tailored to the operational environment. Such integrated campaigns interlock military actions with a national effects-based approach (NEBA) in order to control the perceptions and behaviours of specific population groups. In this sense, an adversary group (including a regular military opponent) would form one of several populations simultaneously or concurrently targeted with military and non-military effects seeking to generate a desired outcome. Integrated campaigns are described in more detail in Annex C.

Close combat remains key

52. Although battle does not in itself guarantee success, close combat capability remains the essential, critical element on which success is based. Close combat capability and, through it, success in battle, is a necessary but not sufficient condition for overall campaign success. The reasons for this are as follows:

a. Although simply a means to an end, battle actually occurs more frequently and less predictably in complex physical, human and informational environments. This is because complex terrain denies advance warning of enemy presence, which might allow battle to be avoided – in complex terrain; a static enemy almost always remains undetected until the moment of first contact.

b. When battle occurs, close combat predominates. This is because of the requirement to control population groups and perceptions, which demands that land forces are in close proximity to populations in complex terrain, and hence in close proximity to an enemy force when battle begins. Combined with the individualised lethality of modern weapons, and the disaggregated battlespace, this means that in contemporary conflict land forces will encounter more lethal enemies, with less warning, in close combat, in complex terrain.

    c.   The ability of land forces to control population groups and execute non-combat functions such as peace support or nation building depends upon close combat capability. Without a capability for close combat, land forces cannot generate the credibility and authority needed to deter enemy action and conduct non-combat tasks peacefully. This does not mean that non-combat capabilities (such as civil-military affairs, humanitarian relief, and infrastructure support or refugee control) are not essential: they are. But they can only be brought to bear when backed by a demonstrated close combat capability.

53. Close combat therefore enables success in battle, while a demonstrated capability for success in battle enables control over population groups and perceptions. Thus, while only a means to an end, close combat is the base-level capability that allows land forces to function effectively in Complex Warfighting.

Close combat demands combined arms teams

54. The Combined Arms Team has been a critical element in successful land force operations for many decades. Combined arms teams are essential in generating the orchestration of effects, task versatility and mission agility that are necessary for effective Complex Warfighting. However, the nature of 21st century combined arms teams will be significantly different from the industrial-age combined arms teams familiar to 20th century soldiers.

55. A combined arms team is a case-by-case mix of combat, combat support and logistics elements, scaled and tailored to perform a specific mission in a given environment. The combined arms philosophy institutionalises versatility, agility and orchestration: it accustoms individuals and teams to tailored, task-specific, agile mission groups that can be rapidly reorganised, regrouped and re-tasked as a situation develops. The principles of combined arms are *complementarity,* where the strengths of each arm cover the vulnerabilities of the others; and *dilemma,* where in avoiding one arm, the enemy is exposed to another.

56. Combined arms operations are one of the purest forms of Effects Based Operations. Their principles are applicable to joint and interagency effects as well as within Army. Indeed, the Wehrmacht's stunning success in 1940 derived largely from the application of combined arms philosophy to cooperation between fast-moving armoured columns and air power. Similarly, the success of Special Forces working with Afghan ground forces and US airpower in Operation Enduring Freedom was an example of joint combined arms.

57. Because of the need to conduct 'mini-battles' in a disaggregated battlespace, combined arms teams in complex warfighting are smaller than the traditional 'battlegroups' or 'combat teams' of 20th century warfare. This is because they must be capable of agile manoeuvre in restricted terrain, and because enhanced situational awareness allows a small team to perform missions previously that required larger units. Such teams regroup rapidly as the situation develops, and are networked with other 'miniature battlegroups' operating in the same area or on the same task. Although the infantry-armour team will remain the core of the combined arms team, non-traditional elements (including assets from other agencies) may frequently form part of the team. Commanders from other arms may frequently command the overall team (depending on the task) and must be highly competent at applying the effects of all arms. Critically, these teams require the capability to generate, or access, combined arms effects right down to the small-team, or sometimes the individual level.

Combined arms teams in complex warfighting

58. Combined arms teams conducting close combat under Complex Warfighting conditions have the following characteristics:

a. **Small, semi-autonomous teams.** Combined arms teams operate in small, semi-autonomous groups. These groups generate the key combined arms effects including manoeuvre, firepower, situational awareness, command and control, and can access remotely generated offensive fires, logistics and mobility support to supplement their organic capabilities. These teams function semi-autonomously in a linked, mutually supporting fashion. Such miniature battlegroups may include infantry, armour, assault engineers, artillery observers, snipers and heavy weapons teams. Aviation, information operations, CIMIC, intelligence teams or a range of other supporting assets may directly support them. In a disaggregated battlespace, these teams have the advantage of flexibility, low tactical signature and the ability to bring relevant weapons systems to bear in compartmented, complex terrain.

b. **Modular organisations**. In order to generate numerous small semi-autonomous teams working to broad central direction, unit organisations must be modular and flexible, so that the same organisation can be configured in numerous different ways. Individual soldiers achieve cohesion, motivation and support through belonging to a small team that lives and trains together, generating a close-knit 'family unit'. This team operates with other small teams to form battlegroups in a variety of configurations. Close habitual training relationships, and practice in regrouping, allow units to become proficient at task-organising subordinate elements down to low levels (potentially as low as intra-platoon or intra-section regrouping) without loss of cohesion or control. This system resembles that currently adopted by Special Operations forces worldwide, but forces optimised for Complex Warfighting tend to adopt a similar system.

c. **Swarming Tactics**. Tactics adopted by a modular unit organised in semi-autonomous teams resemble 'swarming' – the teams cooperate through a few simple decision rules, shared situational awareness, and self-protection by accessing joint combined arms effects. The unit headquarters acts as a clearinghouse for offensive support, logistics, ISTAR feeds and reinforcements. It applies mission command to give broad direction to subordinate commanders, telling them what to achieve and why (rather than what to do and how). Team commanders, in turn, are expected to exert themselves fully in command – cooperating with flanking teams, mutually supporting each other during movement and assault, and combining forces to generate local superiority over the enemy when necessary. These tactics are optimised for precise application of firepower in localised intense engagements, for control of populations and dominance over key areas, rather than for the occupation of terrain as such.

d. **Suppression**. Unlike larger, more traditional combined arms teams optimised for open warfare, these teams do not require the blanket suppression of wide areas of terrain in order to manoeuvre. In a built-up and heavily populated environment, the indiscriminate use of firepower to suppress an area, allowing a large force to manoeuvre, generates collateral damage, civilian resentment and loss of situational awareness. Instead, these teams apply sensors, organic weapons, offensive support, and electronic attack (EA) to generate a localised, tightly defined envelope in which the small team can manoeuvre and operate while detecting and suppressing opposition, without causing unnecessary damage to the broader area. By applying swarming tactics and working in a cooperative fashion with other teams under centralised mission command, several small teams can dominate a wide area without loss of precision or discrimination.

e.   **Separation of Command from Control.** In traditional military hierarchies, the functions of command and control tend to go together. A commander of superior rank, commanding a larger unit, tends to take over control of the battle from junior commanders as soon as feasible. Junior commanders may carry the initial stage of the engagement but then hand over as soon as their superiors arrive. In a force optimised for Complex Warfighting, the functions of command and control are separate. The on-scene commander (regardless of worn rank) is trained and developed so that he can control the application of combat power in the battle area, even though the majority of forces engaged under his control may not be part of his own command. Unit commanders, on arriving in a battle area, place their forces under control of the 'battle controller', often a more junior commander with better situational awareness who has been on the scene since the start of the engagement. Unit commanders assume control of the battle when a tactical pause allows or through a process of 'battle handover' with the on-scene commander. This method of operating is familiar to emergency services, para-medical and police forces that habitually operate in complex environments, as well as Special Forces. Forces optimised for Complex Warfighting adopt a similar approach and (importantly) equip their junior commanders to operate effectively in a system of battle control rather than unit command.

f.   **Integration of Kinetic and Non-Kinetic Effects**. From formation level down to small-team level, commanders in a force optimised for Complex Warfighting can access a range of kinetic and non-kinetic effects. Kinetic effects include direct and indirect weapons effects and the manoeuvre of troops. Non-kinetic effects include electronic attack, sensor feeds, electronic warfare, psychological operations, information operations, CIMIC, and intelligence effects. Commanders are practiced at integrating kinetic and non-kinetic effects, employing both organic and remotely-generated effects, using the strengths of each to cover weaknesses in the force's protective posture, while posing dilemmas for the enemy.

g.   **Precise, Discriminating, Tailored Application of Effects**. These integrated effects are applied in a precise and discriminating manner, based on flexible but robust rules of engagement. Commanders are practiced in applying these rules of engagement with discretion and judgement. Targets are not engaged merely because the rules of engagement allow them to be, but only if the commander is sure that engaging them will further his immediate tactical mission without creating negative side-effects (such as through civilian casualties or property damage). Similarly, when the decision is made to engage a target the commander has access to a graduated variety of means, allowing a tailored engagement. Achieving this level of precision demands reliable, accurate weapons and sensors – although it does not translate into a reliance on precision munitions or terminal guidance. But it also demands excellent situational awareness, well-developed judgement by commanders and individual soldiers, and the ability to see beyond immediate engagements to the wider implications of a given course of action.

h.   **Devolved Situational Awareness**. Forces optimised for Complex Warfighting have the ability to devolve situational awareness down to the necessary level. For example, in a disaggregated battlespace it may not matter that the formation commander has excellent situational awareness, if individual small-team leaders on the ground do not share this awareness. Information, like firepower, must be brought to bear at the critical time and place. Tailored sensor feeds, locally-integrated information flows, a common operating picture that provides visibility for all commanders of their own forces and other friendly forces, precision

navigation, combat identification and good communications are essential in achieving devolved situational awareness.

i.   **Decision Superiority.** Devolved situational awareness generates decision superiority in close combat. Some methods emphasise higher-level situational awareness and hence favour 'information superiority' in which a force knows more than the enemy and acts on the basis of superior knowledge about a situation. By contrast, the 'decision superiority' approach emphasises a general understanding of the environment, a pattern-recognition capability allowing local commanders to detect sensitive changes in the environment, and a decision-making culture that encourages commanders to act quickly but correctly on the basis of incomplete information plus recognition of situational patterns.

j.   **Robustness.** All the above characteristics generate an extremely demanding environment in which small-team leadership, cohesion, physical and intellectual performance, and the application of precision effects are critical. This means that, in order to be effective in this environment, forces must be inured to hardship, exertion, ambiguity and stress. The more austere a force is – the more it is able to rely upon its own resources without recourse to large or sophisticated support systems – the better its robustness and hence its combat performance.

59. Complex warfighting therefore demands a specific approach to close combat – an approach which acknowledges that while combat does not itself guarantee victory, close combat remains an essential prerequisite for mission success. To be effective, forces must be organised into agile mission packages – combined arms teams – which are consciously optimised for close combat under conditions of Complex Warfighting.

Capability Concept: Optimising Land Forces for Complex Warfighting

60. The 21st century environment, combined with the operating concept for Complex Warfighting, demands a new approach to capability development. This was recognised in the 2003 Defence Update in which the Government stated that 'the new strategic environment requires a more flexible and mobile force, with sufficient levels of readiness and sustainability to meet the challenges of these uncertain times'[5]

61. A traditional approach to capability development seeks to analyse the external strategic environment, then optimise the ADF to operate in that environment. This approach is unworkable in current circumstances. Because of its complexity, diffusion and diversity, the external strategic environment is virtually impossible to understand in sufficient detail to predict 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 rapid, unpredictable change that an 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 away from capability development approaches that seek to optimise the force for a given snapshot of the environment (or, more correctly, the subset of the environment that can be understood). The environment is too complex, diverse, and rapidly changing for this approach to work.

62. Instead, the capability concept for Complex Warfighting is as follows:

Complex Warfighting Capability Concept

> *Land Forces for complex warfighting must be optimised for versatility, agility and orchestration 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.*

63. This generates a balanced force capable of agile reaction to a wide range of circumstances, removing the need to predict the future strategic environment, which Defence has historically been unable to do and which is increasingly difficult because of growing complexity.

The Three 'Force Multipliers'

64. In implementing this approach of optimising the force for balance and adaptability in their own right, three key 'force multipliers' apply, the same factors previously identified (at the end of Part 1) as deductions from the environment – Versatility, Agility and Orchestration.

65. **Versatility** is the ability to execute a broader range of tasks to a higher standard. This maximises land forces' utility across the full conflict spectrum, and allows rapid adaptation to change or to unexpected operational circumstances. Versatility is a key element of balance.

66. **Agility** is the ability to transition between tasks quickly, smoothly, with greater stealth and better protection. This is essential in Complex Warfighting with its requirement to perform multiple tasks at the same time, in the same place, with the same forces. It also allows the force to control operational tempo, a critical advantage in complex environments.

67. **Orchestration** is the ability to synchronise and coordinate effects to achieve precise, discriminating application of force. Orchestration occurs within Army through battle grouping into combined arms teams. It also occurs within the ADF and with other government agencies through JIATFs. Orchestration with coalition partners occurs through Combined Joint Task Forces. Capabilities for network-enabled warfighting, as described in the Network Centric Warfare concept (see Annex A), are central to effective orchestration.

The combat functions

68. The 'force multipliers' are best understood through their application to the six Combat Functions identified in *Land Warfare Doctrine 1: The Fundamentals of Land Warfare*. These functions describe the range of actions that forces must be able to undertake to apply land power, and include the functions Know, Shape, Strike, Shield, Adapt and Sustain.

69. **Know**. To *know* is to possess the capacity to predict, detect, recognise and understand the strengths, vulnerabilities and opportunities available within the battlespace. Knowledge is the 'master function' which links the other combat functions. In complex warfighting environments, knowledge – of micro-terrain, key personalities, local politics, ethnic and cultural characteristics, and the position of enemy and own forces – is both critically important and extremely difficult to acquire. Land forces operate in an opaque environment, often at or below the ISTAR threshold, meaning that commanders must exert enormous effort to generate actionable battlefield information, in a timely fashion. Paradoxically, because such information is so difficult to generate, commanders must develop the ability to operate effectively in ambiguous situations, with insufficient or doubtful information. In terms of force multipliers, this will require:

a. **Versatility** – forces must be capable of 'fighting for information', conducting their own local ISTAR as required, to supplement higher-level intelligence which will often be late, inaccurate or lacking in detail;

b. **Agility** – forces must be able to react quickly to rapidly changing situations, transition between widely different activities, and position themselves to exploit fleeting opportunities through smaller, more agile mission groupings and a fuller use of Mission Command down to the lowest levels; and

c. **Orchestration** – forces must be able to integrate, process, disseminate and display key battlefield information (including combat identification and friendly force status information) in order to generate a common, relevant operating picture (CROP) for all engaged forces.

70. **Shape**. To *shape* is to engage in actions that enhance the friendly force's position, delay the enemy's response, or lead the enemy into an inadequate or inappropriate response in order to set the conditions for decisive action. In a complex warfighting environment, shaping actions are complicated by the multiplicity of 'key players' who must be shaped. Actions that are appropriate for shaping a regular military opponent may have negative effects on other stakeholders, or may require careful balance and control in order to be effective. An effects-based approach to shaping is essential, but very difficult in a multilateral, ambiguous and diffuse threat environment. Effective shaping, in terms of the force multipliers, will require:

a. **Versatility** – forces must be capable of an extremely wide range of shaping tasks, including humanitarian support, ISR activities, public relations, CIMIC, conventional and unconventional manoeuvre;

b. **Agility** – forces must be able to master an unpredictable and rapidly changing situation, through small-team mastery, personal maturity and a level of military education that allows commanders to take shaping actions appropriate to both the immediate tactical situation and the broader operational, strategic and political context; and

c. **Orchestration** – forces must be able to tailor and integrate shaping effects, including kinetic effects (traditional 'fires') and non-kinetic effects (electronic attack, ISR activity, CIMIC activity, PSYOPS and Information Operations) in order to shape the adversary, the mission environment, neutral populations and friendly forces.

71. **Strike**. To *strike* is to apply tailored effects in a timely fashion, requiring the precise integration and application of force at selected points in the battlespace to achieve specific outcomes. In a complex warfighting environment, effective strike requires precision: the ability to generate the exact effect required, in the exact target set, with minimal collateral damage or unintended consequences. This implies a localised, tailored effect but does not necessary imply a reliance upon precision munitions or terminal guidance. Effective strike also requires discrimination: the ability to distinguish appropriate from inappropriate targets, while retaining the freedom to engage or not depending upon the situation. In force multiplier terms, this requires:

a. **Versatility** – forces must be capable of discriminating precision strike against the widest possible variety of targets, which in turn demands a range of weapon systems that can bring both kinetic and non-kinetic effects (including less-lethal, highly localised or non-lethal effects) to bear at the critical time and place;

b. **Agility** – forces must be able to work effectively within flexible rules of engagement, transition between different threat environments and appropriate levels of lethal force, and exploit fleeting opportunities through responsive and precise target acquisition, weapons systems and battle damage assessment; and

c. **Orchestration** – forces must be able to target and deliver kinetic and non-kinetic strike that is integrated in three dimensions: integrating strike actions themselves, integrating agencies that deliver effects, and integrating strike actions with broader operational and tactical effects. .

72. **Shield**. To *shield* is to protect friendly forces and infrastructure, through avoiding detection, and protection against physical or electronic attack. In a complex warfighting environment shielding requires that all deployed force elements, including logistics assets, be given sufficient protection, mobility and firepower to survive a surprise attack and respond effectively. It also requires that forces be given an appropriate degree of stealth and situational awareness. In terms of the force multipliers, this requires:

a. **Versatility** – forces must be prepared to deal with highly lethal threats regardless of the type of operation on which they are deployed, and must be provided with flexible multi-purpose mobility, weapons and sensor platforms that can be used in a range of operational scenarios in complex, probably urbanised terrain;

b. **Agility** – forces must be given the highest possible degree of protected mobility, ideally with every soldier allocated to a seat in a protected, mobile, situationally aware mobility platform – an armoured platform in the case of medium-weight forces, or an air or sea platform in the case of light forces; and

c. **Orchestration** – forces must be able to be flexibly scaled and tailored so that combined arms teams, containing a mix of capabilities appropriate to a given situation, can be easily configured. This will require all elements of the combined arms team to be organised, trained and equipped to work at the small-team level with the other elements.

73. **Adapt**. To *adapt* is to respond effectively changing situations or tasks that arise from the dynamic, chaotic and interactive nature of warfighting. In a complex warfighting situation, land forces must adapt quickly to changes in the environment, modify their tactical and operational approach to match developing threats, and react rapidly to seize fleeting opportunities. In force multiplier terms, this requires:

a. **Versatility** – forces must be structured, trained and equipped for balance, with standardised groupings, common SOPs and robust logistics, so that minimal changes are necessary as the force reacts to changed circumstances;

b. **Agility** – forces must be able to work effectively within flexible, often non-traditional groupings, transition rapidly between phases of an operation, and maintain small-unit cohesion despite the requirement to regroup frequently; and

c. **Orchestration** – all elements across the force must be given commensurate protection, mobility and situational awareness, as well as common procedures and a high level of small-team skills, allowing them to regroup forces and re-configure effects without becoming bogged down in the complexity of their environment.

74. **Sustain**. To *sustain* is to provide appropriate and timely support to all forces through deployment, conduct of the mission and redeployment. Sustainment is a critical factor in

complex warfighting, because the complexity of the environment makes it extremely difficult for logistics planners to anticipate likely requirements. Thus there is a demand for stockpiling, forward dumping or 'push' logistics which is incompatible with the need to optimise the force's logistic footprint in a given theatre. Sea-based logistics, air resupply, and other techniques can help to resolve this dilemma, but a much greater degree of austerity will be essential to ensure that demand does not create targetable vulnerabilities that an adversary can exploit. In force multiplier terms, this requires:

a. **Versatility** – in order to operate in a versatile fashion across a wide range of complex warfighting tasks, as force's CSS assets (including people, installations, plant and equipment) must be provided with equivalent protection, mobility and situational awareness to the combat force.

b. **Agility** – logistics agility demands situational awareness both in terms of the tactical and administrative situation, and in terms of the distribution system. This will require combat ID for all CSS elements; the ability to generate modularised, deployable logistics packages; and a ruthless economy of effort across all combat, combat support and CSS functions.

c. **Orchestration** – orchestration demands the ability to coordinate tactical requirements with CSS in a more precise and tailored fashion. This demands a high degree of austerity and improvisation from combat units, and the ability to track critical supply items at key points of the distribution chain. Network-enabled logistics will provide technological solutions to some orchestration problems, but the need for organisational and tactical solutions to consider sustainment (including personnel sustainment) at all stages is central.

75. **Capability gap analysis.** Based on this indicative analysis, it is clear that a significant range of capability enhancements will be required if land forces are to be capable of Complex Warfighting. Force Development Group is responsible to carry out detailed capability gap analysis, drawn from this concept paper, in order to formulate a capability development roadmap that will produce such capable land forces.

CHIEF OF ARMY'S DEVELOPMENT INTENT

76. Having described the environment, and articulated both an operational response and a capability response to that environment, it is now possible to state a clear intent for Army development. This Chief of Army's Development Intent (CADI) states, at the Army program level, the design rules that will allow concept, development and acquisition staffs to generate an Army that is capable of performing effectively in Complex Warfighting.

> *Chief of Army's Development Intent is to develop a **Hardened and Networked Army** that is capable of Complex Warfighting, using combined arms effect at the small team level to generate a capability for close combat in complex terrain.*

77. The Hardened and Networked Army is to conform to the following design rules:

a. It is to be optimised for close combat in complex, predominantly urbanised terrain, as part of a joint inter-agency task force.

b. It is to capable of being adapted to other tasks, up to and including medium-intensity warfighting in a coalition setting, and down to peace support operations and peacetime national tasks.

c.   All elements of the deployed force are to be provided with protected mobility, firepower, situational awareness and stealth to enable them to perform their missions without undue risk.

d.   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 & individuals across the force.

e.   All elements in 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.

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

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

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

i.   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.

j.   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 Hardened Army.

k.   The Army is to embody a philosophy of Robustness, in regard to CSS support, training, facilities, personnel processes and headquarters staffs.

Functional Concepts

78. A number of Functional Concepts are being developed to support the application of Complex Warfighting approach across the specific campaign types (MOLE, PSAT and CCOW) that Army may need to conduct. In essence, the requirements outlined in these concepts are as follows:

a.   **Control Operations.** The control operations concept describes in detail the tactical-level application of complex warfighting techniques to close combat operations in complex, predominantly urbanised terrain.

b.   **Special Operations.** The special operations concept outlines the role of Special Operations forces in complex warfighting, providing more detail on their key roles of whole-of-government shaping, unconventional and asymmetric operations, and the integration of special and combat forces in the complex warfighting battlespace.

c.   **Effects based operations.** Effects-based operations (EBO) are embodied in the approach to orchestration, the use of inter-agency task forces and integrated campaigns, and the development of modular small-team structures. The Land EBO concept describes these capabilities in greater detail.

    d.   **Network Centric Warfare.** The NCW concept further develops the notions of network-enabled operations and battle control. It describes a concept for networked fires, supporting communications and C2 architecture, and the development of a federated network to enable complex operations.
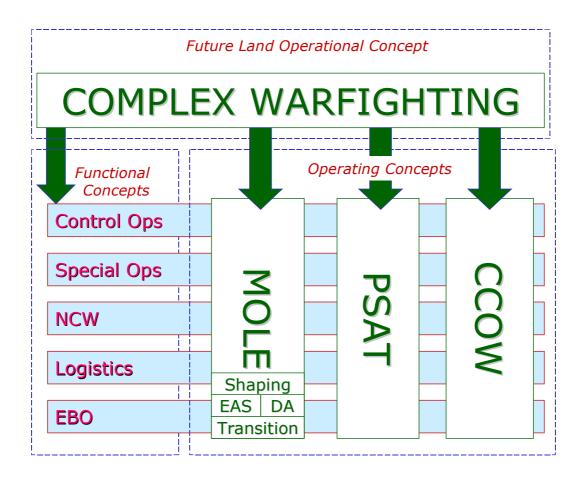
CONCLUSION

79. This document, Complex Warfighting, describes the reality of contemporary conflict. It forms the Future Land Operational Concept, and guides all other Army concepts.

80. The concept has analysed the contemporary warfare environment and described how the ADF's land forces must operate in this environment. As has been shown, the process of Globalisation and US dominance of conventional warfare has led its enemies to seek alternate, asymmetric means and arenas for confrontation. This has generated a complex, diverse, diffuse and lethal environment. To succeed, military forces must apply discriminating force to support whole of government efforts, in order to control populations and perceptions. This requires versatility, agility and orchestration, which in turn requires a human-centric philosophy of warfare, an ability to conduct integrated whole-of-government campaigns using JIATFs, and an ability to conduct integrated campaigns in complex environments. In turn, controlling populations and perceptions demands that land forces operate in close proximity to potentially hostile elements, in complex physical, human and informational terrain. This means that close combat remains the key to Complex Warfighting – in itself, it is not enough to guarantee victory, but it provides the means to control and influence populations and perceptions, by enabling proximity, precision and discrimination in the application of force.

81. Optimising forces for Complex Warfighting requires a specific approach to command, organisation, training, tactics and capability development. This approach is articulated in the Chief of Army's Development Intent, which provides design rules for a Hardened and Networked Army. Generating such optimised forces for the 21st century conflict environment is the key development challenge facing the Australian Army.

Annexes:

A.   Relationship of *Complex Warfighting* to other Army and Joint concepts

B.   Joint Interagency Task Forces

C.   Integrated Campaigns

RELATIONSHIP OF *COMPLEX WARFIGHTING* TO OTHER ARMY AND JOINT CONCEPTS
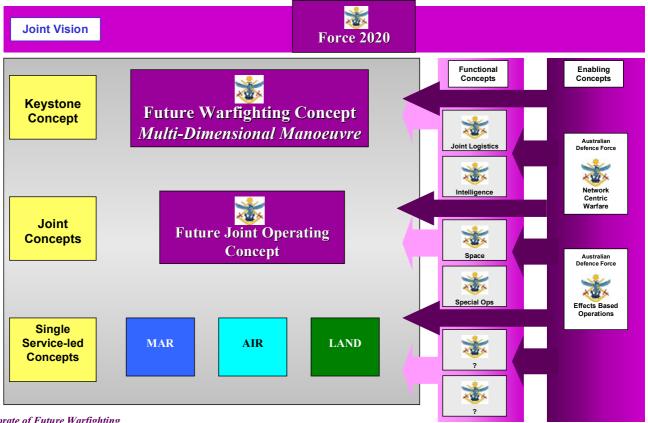

Relationship to Army Concepts

82. *Complex Warfighting* is the Future Land Operational Concept. It describes the features that link, or are common to, all types of land force operational environments, tasks and capability requirements. The FLOC sets the parameters for all other Army concepts. In addition, as a concept for land forces (the Army and those elements of the RAAF and RAN that support the Army) it forms the lowest rung of the joint concept hierarchy. In the joint framework, it sits under the Future Warfighting Concept at the strategic level and the Future Joint Operational Concept at the operational level.

83. The three Operating Concepts sitting under the FLOC are *Manoeuvre Operations in the Littoral Environment* (MOLE), *Protective Security Operations on Australian Territory* (PSAT) and *Contribution to Coalition Operations Worldwide* (CCOW). These concepts describe the features that distinguish, or are specific to, the different environments, tasks and capability requirements for specific land force operations.

84. The functional concepts illustrated are not yet written and are **indicative only.** These concepts when completed will describe the functional techniques (primarily at the tactical level) that occur in specific variations across all types of operating environments.

Relationship to Joint Concepts

Directorate of Future Warfighting

85. The Joint Future concepts framework follows a similar structure to the Army conceptual framework. The lead concept, *Force 2020,* articulates a joint vision for the ADF for the 2020 timeframe, and informs all subordinate concepts. The Future Warfighting Concept sets out, primarily at the strategic level, the concept of *Multi-Dimensional Manoeuvre* which underpins the ADF approach to future warfighting. The Future Joint Operational Concept draws together the common features of subordinate operating concepts and articulates an operational level concept – hence, the FJOC performs a similar function in the Joint framework to that performed by the FLOC in the Army conceptual framework.

86. Below the FJOC are service-led operational concepts: the Future Maritime Operations Concept (FMOC), Future Air Operations Concept (FAOC) and the Future Land Operations Concept (FLOC) – this document, *Complex Warfighting.*

87. *Complex Warfighting*, as the FLOC, therefore sits in both the Joint and Army concept framework. It is both the top-level Army concept and the Army's contribution to the Joint concepts framework.

JOINT INTERAGENCY TASK FORCES

1. Although every JIATF will be different, all are likely to incorporate at least some of the following elements:

   a. **Headquarters**, comprising military commanders and senior policy officials, personal staff, advisers, and a command, control and communications (C3) package enabling the flexible command of diverse force elements. Depending on the type and phase of an operation, the JIATF commander may be a military officer or, alternatively, a senior official from another government agency.

   b. **Joint Task Forces** comprising land, maritime and aerospace forces. Unlike at present, these are organised to reflect the dimension in which their operational effects are generated, rather than the environment where their forces are physically located. The component units within JTFs are structured for rapid regrouping to another JTF as the operational focus shifts.

   c. A **Joint CSS Component** comprising two generic groupings of sustainment assets. The first group, structured as a JTF Logistics, exists to support and sustain the JIATF itself. The second group, structured as a National Support Component, exists to generate operational effects – such as humanitarian assistance – that achieve campaign objectives in the wider battlespace rather than primarily through sustaining friendly forces.

   d. A **National Effects Component** comprising staffs and operational elements from other government (and potentially non-government) agencies within the JIATF. These might include a National Targeting Team, National Intelligence, Surveillance and Reconnaissance Support Team, National Humanitarian Assistance Team, National Policy Team, and National Information Operations Team. These elements execute whole of government actions, support JIATF planning, and liaise through JIATF headquarters, using its C3 package, to coordinate support from parent organisations in Australia.

2. Using this approach tailored, scaled JIATFs are established for specific campaigns. Operation Anode, the 2003 Australian-led deployment to the Solomon Islands, is an example of a coalition JIATF.

INTEGRATED CAMPAIGNS

1.   In Complex Warfighting, JIATFs execute integrated campaigns specifically tailored to the operational environment.   Such integrated campaigns inter-lock military actions with a national effects-based approach (NEBA) in order to control the perceptions and behaviours of specific population groups. In this sense, an adversary group (including a regular military opponent) would form one of several populations simultaneously or concurrently targeted with military and non-military effects seeking to generate a desired outcome. Integrated campaigns may include some or all of the following generic elements, which may occur sequentially or concurrently, representing lines of operation in the traditional campaigning sense:

  a.   **Information Operations (IO).** In Complex Warfighting, IO is a whole-of-nation activity focussed on identifying and exploiting influence and pressure points in the informational environment. Actions in this campaign incorporate offensive IO, defensive IO and IO support operations. The IO dimension underpins the entire integrated campaign and is critical to its success in controlling populations and perceptions.   It is coordinated by a National IO Team within the JIATF but is interlocked with strategic IO conducted by Australia-based agencies, and with tactical IO actions at JTF level.   This implies a much greater role for IO, and a much greater IO capability, than the ADF currently possesses.

  b.   **Manoeuvre Operations.** Manoeuvre operations in Complex Warfighting are combat operations targeted against the main military adversary – for example, the enemy's regular armed forces, if present.   If no major conventional threat exists in a given theatre (for example, the current Solomon Islands operation), this element of a campaign might not be required. Conversely, in medium or high-intensity conflict it might be the pre-eminent element of a campaign. Manoeuvre operations are conducted primarily to establish control over key population groups, implying the need to defeat the main enemy force in order to control terrain, infrastructure and population centres. This, in turn, implies a very high likelihood of close combat in complex terrain. Manoeuvre operations vary depending on the operational scenario and are covered in detail in subordinate Army concepts including MOLE, PSAT and CCOW.   Importantly, while manoeuvre sets the conditions for successful Complex Warfighting, it is not an end in itself.   Hence, success in the manoeuvre phase of a campaign does not automatically equate to overall mission success.

  c.   **Protective Security Framework.** Controlling populations implies the need to protect non-combatants, civilians and population groups. Protective security framework operations provide this protection, allowing the force to influence the behaviour and perceptions of neutral and non-combatant groups. Second only to manoeuvre operations, these 'framework operations' absorb the bulk of deployed military forces in Complex Warfighting. They are also the main focus of non-military agencies within the JIATF and external to it. These operations also incorporate a large proportion of human intelligence (HUMINT) and Civil Military Cooperation (CIMIC) efforts. The ability to develop and employ local indigenous allies and auxiliary forces, including indigenous judicial and law-enforcement agencies, is critical in achieving an effective security framework.

Importantly, the framework exists not only to protect the population from enemy elements, but also to ensure that friendly military operations create the minimum possible disruption or collateral damage within the broader population. Forces such as armed CIMIC teams, training and advisory groups, local security forces and quick reaction forces are potential elements of this framework.

d. **Mobile Security Operations.** Manoeuvre Operations and the Protective Security Framework create the conditions for mobile security operations. These are combat operations targeting threats other than an adversary's regular armed forces. Guerrilla groups, bandits, rioters, armed factions and urban insurgents are examples of the types of threat groups against which these operations might be conducted. While the protective security framework focuses on providing security to the population, mobile security operations target irregular forces and prevent them from interfering with the progress of the campaign. To be successful, such operations must be controlled carefully to meet IO objectives, and interlocked carefully with protective security operations to prevent collateral civilian losses or damage.

e. **Unconventional and Asymmetric Operations.** Within the framework of the other lines of operation, unconventional and asymmetric operations may be conducted against specific threats such as terrorists, hostile intelligence services, organised crime or other small and elusive adversary elements. These operations – which may or may not involve lethal force – would be conducted in accordance with the rule of law and Australian democratic values, and would not always be required or appropriate. In any case, such operations can only succeed if conducted within strict operational guidelines, in accordance with IO objectives, and in coordination with whole-of-government efforts.

Campaign Components

2. There are three campaign components within any complex warfighting campaign, whether conducted within Australian territory or offshore. These components are MOLE, PSAT and CCOW, and equate to Army concepts within the Army Conceptual Framework (ACF). Each component represents a form of Complex Warfighting and is governed by the principles outlined in this concept. The subordinate concepts are described in detail in the respective concept papers. Their characteristics in outline are as follows:

a. **PSAT.** Protective security operations on Australian territory provide a secure, firm base area for all military campaigns. PSAT activities will always occur, during any type of campaign, because the need to secure Australia is paramount and because without effective PSAT no other form of military operation can be successfully conducted. The aim of PSAT is to provide protective security to key infrastructure, national interests and population centres. PSAT includes Counter Terrorism (CT), response force and vital asset protection (VAP) operations. PSAT is the core business of the Army Reserve, operating as a JIATF with other government agencies and assisted by such elements of the Regular land forces as are available. PSAT is a subset of Complex Warfighting because it involves military operations in close proximity to the Australian population, often in areas of complex terrain and requiring complex interaction with other Australian government agencies.

b. **MOLE**. Manoeuvre operations in the littoral environment are the most demanding form of land force campaign. Because of its complex land-sea-air environment, most operations in Australia's immediate neighbourhood will be conducted as MOLE operations. These will include shaping, entry from air and sea (EAS), decisive action and transition actions. MOLE is a subset of complex warfighting because once the entry and decisive actions are conducted, MOLE campaigns rapidly devolve into stabilisation and transition actions conducted in complex physical, human and informational terrain. MOLE operations are the core business of Regular land forces, including both Conventional and Special Forces, assisted by key elements of the Reserves. They are conducted by JIATFs drawn from all services and other whole-of-government agencies.

c. **CCOW.** Contributions to coalition operations worldwide represent the most diverse form of land force campaign. PSAT will always occur as a supporting action and, depending on the type of campaign, MOLE operations may also occur. Land forces for CCOW will be selected on the basis of strategic weight, operational utility and tactical success. These forces will be drawn from Reserve and Regular components of both Conventional and Special forces, and tailored to a specific mission. CCOW include operations that are Australian-led, as well as operations in which Australia contributes forces to a coalition led by another country. The Australian contribution to such operations will comprise a JIATF. CCOW is a form of Complex Warfighting because of the requirement to operate offshore in a coalition setting, and because conventional warfighting operations rapidly devolve into stabilisation and transition actions conducted in complex terrain.

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[1] Department of Defence 2002, ADF *Future Warfighting Concept*

[2] There is no official ADF definition of globalisation. This definition is not authoritative, but is a descriptive statement based on a compilation of academic and analytical sources.

[3] Department of Foreign Affairs and Trade White Paper, *Advancing the National Interest*, 2003

[4] Complex terrain, in the physical sense, is defined by DSTO as terrain where weapon range exceeds sensor range – hence, forces cannot achieve unobstructed situational awareness to the maximum effective range of their weapons.

[5] Department of Defence, *Defence Update*, 2003