



FUTURE WARFIGHTING CONCEPT



FOREWORD

The Australian Defence Force has come a long way in recent years. In my view, we have positioned ourselves as a modern, professional military organisation through the quality of our work. People in other countries are taking notice of our ideas and our operations.

We know that we are living in very uncertain times, and we are currently experiencing a hectic operational tempo as a result. We know that our Defence Organisation, and our Defence Force in particular, will need to be agile enough to adjust to the ever-increasing and diverse demands of the future. These conditions pose real challenges to our plans to modernise the ADF: but we simply cannot take our eye off the future while we are working to achieve our current tasks.



Future Warfighting Concept is a further step towards addressing the challenges and uncertainty of the future operating environment. It is the culmination of a substantial body of work that has been subjected to nearly three years of wide consultation and collective intellectual effort. Yet it is also the start of a process to refine the concept and develop a force to meet our nation's future needs. *Future Warfighting Concept* provides a foundation for experimentation, wargaming, and deeper analysis of some alternative ways of protecting Australia and its interests well into this new century. Our success in this challenge will be directly dependent upon the intellect and hard work of our people. I urge you to take a personal interest in making this concept stronger, by participating in experimental activities and expanding on the concepts – or criticising them – through our journals.

I am excited by the opportunities that lie ahead. *Future Warfighting Concept* is fully supported by the three Service Chiefs and the Secretary of Defence. We commend this publication to you and, once again, encourage your active participation in this work.

P.J. COSGROVE AC MC
General
Chief of the Defence Force
Canberra
2003



FUTURE WARFIGHTING CONCEPT

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INTRODUCTION

WHAT IS THE PURPOSE OF
'FUTURE WARFIGHTING CONCEPT'?

The Chief of Defence Force's vision for the Australian Defence Force (ADF), *Force 2020*, outlined three major concepts – the Seamless Force, effects-based operations and network-centric warfare – that define our ambition for the future. *Force 2020* also explains the central role of concept development and experimentation in 'turning the vision into reality'.

Future Warfighting Concept expands on the ideas contained in *Force 2020*. Its purpose is to guide joint and single-service concept development and provide a basis for experimentation, in order to shape capability development decisions. This booklet is not a policy document like *Defence 2000*: it presents a concept that describes how we aspire to fight in the future, and a way to develop new ideas about future capability.

The future warfighting concept (FWC)¹, which is consistent with the idea of effects-based operations,² is called *Multidimensional Manoeuvre*. Our future adversaries will come in different forms, have different goals and employ different methods, but they all have a common thread: the will to fight. Where necessary, the ADF fights to change that will and protect our national interests. Multidimensional Manoeuvre is based on the Manoeuvrist Approach, which is already present in our current warfighting doctrine. This approach seeks to apply strength against weakness. It values surprise and deception. It requires an ability to act fast, to reach out to the critical place at the right time, and create simultaneous problems that an adversary cannot resolve. In order to fight this way, the ADF will need the ability to be deployed and sustained at home and at a distance. The force will also need people who have been trained to cope with the danger and complexity of battle. Relevant and protected information is essential to helping our people to fight and win.



*The Joint Strike Fighter (JSF),
a contender for the Air 6000 project.
Picture: Lockheed Martin Corporation*

¹ *Future Warfighting Concept* refers to the booklet, while the term 'future warfighting concept' (FWC) refers to the concept of Multidimensional Manoeuvre.

² The idea of effects-based operations concentrates our thinking on the adversary, and the effects that we want to achieve, before we consider the platforms or tools that we might use. Effects-based operations are described further in Section 2.

The FWC is built on some enduring ideas and some that are new. In addition to the manoeuvrist approach and the continued importance of well-trained and motivated people mentioned above, other ideas including the focus on warfighting, decision-action cycles and the need to fight as part of a coalition are not new. However, we should not mistake the degree of continuity as 'situation: no change'. Other ideas such as network-centricity, an effects-based approach, taking a systems view of the adversary and ourselves, and concept development and experimentation are only beginning to emerge in the ADF's thinking about conflict and capability development. We should not underestimate the degree of change that these ideas will bring, nor the time that it will take to develop and integrate these initiatives into our capability through doctrine and structural changes to the force. We expect to need ten to fifteen years to realise the FWC.

Future Warfighting Concept is supported by a number of single-service and subordinate joint concepts. The single-service concepts include the Navy's *Future Maritime Operational Concept*, Army's *Future Land Operational Concepts* (of which *Manoeuvre Operations in the Littoral Environment* is currently the most developed), and the Air Force's *Future Aerospace Warfare Concept*. Subordinate joint concepts will be progressively developed over the next few years. Of these, *Future Joint Logistic Concept* has been published, while *Network-centric Warfare* and *Effects-based Operations* will be produced in 2003. This family of concepts, led by the FWC, will unify the ADF's capability development efforts over the next decade or more.

This publication is divided into two parts. Part I, 'Looking to the Future', describes the factors that currently influence our view of future warfighting, establishes the contribution of warfighting to a national effects-based approach, and draws implications for the ADF, including a set of benchmarks for the FWC. Part II, 'Positioning for the Future', describes Multidimensional Manoeuvre, and the plan for further concept development and experimentation.³

Future Warfighting Concept is a 'stake in the ground' for ADF concept development. We will refine the future warfighting concept through experimentation and analysis.

The FWC is, above all, about creating a warfighting advantage over any potential rival. The FWC will be reviewed as part of the Defence Experimental Framework within a three-year cycle to ensure that it remains useful and relevant. This timeframe will also allow the experimentation process to run a full course, providing meaningful outcomes that can be used to revisit and update the concept in later editions.

³ Detailed benchmarks and warfighting functions will be released in a separate annex.



PART I

LOOKING TO THE FUTURE



The ADF is a highly flexible organisation that can be used to meet national objectives in many ways. However, nations maintain armed forces primarily to conduct *warfighting*, which is the *application of organised force in combat*.⁴ Warfighting therefore remains the ADF's unique contribution to national security.

The ADF aims to conduct warfighting better than any potential adversary by developing an effective and versatile force. The key to creating this advantage is the ability to adapt to change rapidly. However, this focus on adaptability does not preclude us from taking decisions that actually shape the future of warfighting; in most cases we will need to anticipate the likely consequences of change in time to take steps to retain our warfighting advantage. We should plan on being surprised by some major developments over the next decade or so. The potential for surprise makes it important to apply strategic planning techniques and professional judgment to ensure that we are in a position to make informed judgments about the future in a timely manner.

But what will warfighting contribute to national security in this globalised world? How will warfighting – in particular the nature of conflict, the types of combatants and their methods, and the application of technology – change over the next five to twenty years? Part I draws on recent work within Defence to identify the key factors and assumptions about the future strategic environment and future conflict.⁵ Section 1 identifies aspects of change and continuity that influence warfighting, such as the strategic environment, security threats and adversaries, the battlespace, technology and Australia's approach to warfare. Section 2 provides the strategic context for warfighting by examining the contribution of warfighting to national security. Section 3 outlines the implications of these issues that have a direct bearing on the ADF, and describes the benchmarks to which we aspire for the *Future Warfighting Concept*.



⁴ The term 'warfighting' has been used because it is an inherently joint term that embraces the ideas of engagements and combat.

⁵ Most of these issues are covered in Defence publications, including *Defence 2000*, *The Australian Approach to Warfare* and *Force 2020*. The leading service doctrine publications – *Australian Maritime Doctrine*, *The Fundamentals of Land Warfare*, and *Fundamentals of Australian Aerospace Power* – also discuss these issues in general, and how they specifically influence each service. Some work that is not publicly available – such as *Future Maritime Operational Concept* and *Future Land Operational Concepts*, and unpublished work including *Asia-Pacific 2022* and *Air Force 2015* – has also been consulted.

SECTION 1

WARFIGHTING IN
A GLOBALISED WORLD

What factors do we expect to endure, and what factors do we expect to change, in warfighting?

Australia's approach to warfighting will continue to be shaped by two interrelated factors: the international system, with the strategic pre-eminence of the United States, globalisation, and the increasing role of non-state actors being the major issues; and the nature of the future battlespace. We also expect some enduring factors – such as the chaos and uncertainty of war and the values of Australia's approach to warfare – to influence future warfighting. It is important to note that many of these forces are not new: some have clear historical precedents, while others are part of our recent experience. While the product of these forces will be difficult to predict, we are sure that warfighting will remain relevant in this globalised world.

The international system and globalisation

Within the international system, the United States will continue to be the most powerful political, economic and military state for the foreseeable future. In addition, other like-minded countries will continue to be very important because of their political support of common goals, and as partners in coalitions. We should anticipate conducting operations as part of coalitions. The importance of coalition operations makes a close understanding of our allies' and likely coalition partners' warfighting concepts important to our own thinking, and interoperability – adapted to different circumstances – important to our capability development.

The complex relationships between the major powers in the Asia-Pacific will dominate the region's future. While lately these countries have been able to resolve their problems without war, a number of potentially serious 'flashpoints' remain, based on unresolved territorial disputes, historical or ideological rivalries, and internal problems. Also, new or renewed problems arising from issues such as resources and clashes in trade routes could lead to violence. Therefore inter-state conflict may not be as common as in the past, but it will not disappear. War between states will remain a feature of the international system in a 'globalised' world.

Globalisation describes the trend towards increasing economic, political and possibly cultural connections between societies across national borders. In security terms, it has also led to 'interconnectedness' between different issues at the local, national and global levels; such that existing issues like terrorism, crime and unregulated people movement have broader – and more unpredictable – effects than before. Despite having some positive effects, globalisation will not be economically and culturally beneficial to everyone: some people will win, while others will perceive themselves as worse off.

Some states and groups will be unable to cope with globalisation or the forces that work against it, such as parochialism. Paradoxically, interconnectedness may cause them to dissolve into local conflicts that threaten their neighbours and regional stability. Already tense situations may become fully fledged conflicts as growing populations or environmental degradation create further grievances and disparities. These conflicts will often be clashes between neighbouring groups who use relatively unsophisticated means for destructive purposes.

Out of a total of 108 armed conflicts between 1989 and 1998, 92 took place within the boundaries of single countries.

Other 'transnational' issues – such as smuggling, piracy, drugs, and illegal fishing – may not result in armed conflict between nations, but they will have direct impacts on our national interests. Such issues are not always military problems, but military resources may prove useful to monitoring, controlling or recovering from them.

Most conflicts, particularly intra-state ones, will be marked by the presence of non-state actors. These actors will play many roles: some will help to resolve conflict or lessen its effects, while others could be combatants. These actors will influence warfighting in a number of ways. In line with our recent experience, armed forces may be required to coordinate their operations with humanitarian relief organisations. At other times, some non-state actors might be dangerous adversaries for state-based armed forces. These non-state adversaries may not be uniformed and disciplined forces; we should not expect them to think, act or be organised like us. They could have a wide and largely unpredictable range of capabilities that may not require huge financial, material or technological bases.

The term ‘**non-state actor**’ refers to any person or group of people who act independently of formal governments. They include all private, multinational, and non-governmental organisations, from human rights and environmental interest groups, to private military companies, through to criminal syndicates, terrorists, and separatist movements.

Technology, warfighting and the future battlespace

Changes in technology – and importantly how that technology is applied – and the enduring character of war will continue to shape and reshape the non-linear battlespace to the point where the ‘conventional’ and ‘unconventional’ aspects of conflict will be difficult to separate. These factors will influence the tactics, and possibly the strategy, employed by the ADF and potential adversaries.

While states will continue to be the main owners of more complex technologies, we should not discount the ability of other actors to obtain – legally or illegally – parts of sophisticated systems, such as shoulder-launched anti-aircraft missiles, satellite imagery, and communications intercept equipment. This will give important military capabilities to some relatively small groups. Of course new technologies will be developed, often through commercial development programs, and marketed quickly. Consequently, it is important to consider the imaginative ways that technology could be adapted for military purposes, and to anticipate the unintended effects of technological developments.

The **battlespace** changes the linear concept of ‘battlefield’ to encompass a broader range of environments – including maritime, aerospace, land, electromagnetic, and information – and the temporal, social and political dimensions where conflict is fought.

The **non-linear** nature of the battlespace is seen in the way that seemingly small changes can have a huge impact on events – and vice versa. It also reflects the different and unconventional means that adversaries will adopt to achieve their aims.

The non-linear battlespace is also **non-contiguous**: operations could occur in any part of the world, and might not necessarily be confined to adjoining theatres. Also, there could be a significant time-lag between operations.

Technology will also influence the view of geography in our security planning. We have already seen how international terrorism, using a mix of technologies ranging from fertiliser bombs to encrypted communications, can circumvent borders and distance to attack our national interests. Other technological developments, such as offensive information warfare capabilities, space-based sensors and communications, weapons of mass effect, and long-range weapons such as ballistic and cruise missiles have the potential to reach targets that were previously difficult to strike.

Littoral areas and cities will be important sites of future conflict, and both have characteristics that make them more complex than the high seas, open areas of northern Australia or deserts.⁶ We will expect adversaries to exploit these complex environments to degrade our technological advantages, for example, by using cities for concealment, deception, and intermingling. Given the presence of many islands in our region and the close proximity of many cities to coastlines, an ability to fight in the littoral will be important.

We expect that some aspects of the battlespace will endure, regardless of the changes to technology or strategic factors. War will remain chaotic. This chaos – which is produced by the complex way that friction and the fog of war interact can only ever be managed by the determined application of human will and intellect.⁷ This is why our people remain the most important element of ADF capability

Friction and the fog of war are concepts that describe the character of war. Friction – which is produced by danger, physical exertion and chance – is the force that ‘makes the simplest things difficult’. The fog of war is a metaphor that describes how the real situation is often obscured from decision-makers.

While modern technology may help to clear some of the fog, it will never be fully dissipated because it exists primarily in the minds of combatants.

Some changes that we are already seeing, such as fast and continuous operations based on information and rapid movement, will continue to influence the way we fight. Recent operations have reminded us that sustainment – supporting forces to achieve their missions – is an essential component of warfighting. Consequently, deployable logistics and rotation forces are integral to sustaining our future force.

⁶ The ‘littoral’ is defined as the domain in which the maritime, land and air environments can directly influence each other.

⁷ This view of conflict is explained further in *The Fundamentals of Land Warfare (LWD1)*, Land Warfare Development Centre, Puckapunyal, 2002, pp. 35-7; and *Fundamentals of Australian Aerospace Power*, Royal Australian Air Force, Fairbairn, 2002, Ch 4.

Continuity and change for the ADF

These broad changes, and changes within Australian society, will influence our approach to warfighting. While the *Australian Approach to Warfare* has discussed these issues, some are worth highlighting here.

One aspect that we expect to endure is our broad alignment to the Western approach to warfare, where the Manoeuvrist Approach has emerged over the past few decades as the major basis for thinking about modern war (see section 4). This approach is based on excellent leadership; intelligent sailors, soldiers and airmen and airwomen; and a commitment to professional excellence.



Avionic technicians work side by side in a cockpit of an F111G at 501 Wing RAAF Amberley.

These influences have also led the ADF to develop a unique character. We are renowned for being aggressive, fair and tough. Our people show initiative, and act with courage. Teamwork, often expressed as mateship, is a hallmark of our approach to warfighting. We are a total force, where full-time, part-time and civilian members all make valuable contributions to the ADF and the nation. We will carry these qualities forward into the future.

Another major issue for the future ADF is that of Australia's demographics and evolving community expectations about employment. The population is ageing, and the nation is becoming more ethnically diverse. Also, employment patterns are changing, and people have greater access to education. The ADF will need to adapt to this situation by making the most of the people available. We will need to consider how part-time members and units can be employed to best effect, and how government agencies and industry can join with the ADF in a whole-of-nation approach to security.

Whole-of-nation approach to security seeks to unify and coordinate every element of the nation – from the government and its agencies, industry and the private sector, and the people at large.

SECTION 2

WARFIGHTING IN AUSTRALIA'S SECURITY

What does warfighting contribute to Australia's national security?

Force 2020 has described the emerging concepts of a *national effects-based approach*, and its operational component, *effects-based operations*. While these concepts are described in separate papers, it is important to briefly outline each concept in order to understand the role of warfighting in Australia's security.

Effects are the physical, functional or psychological outcome, event or consequence that results from specific military or non-military actions at the tactical, operational and strategic level.

A national effects-based approach represents a basic idea for thinking about Australia's security in a new century. This approach involves taking a whole-of-nation view of security to find the most appropriate tool to achieve national objectives. These tools will be drawn from the elements of national power, and provide diplomatic, economic, information and military options. In deciding which tool to apply, the Government is likely to consider the interests involved and the preferred way to affect the adversary's will. We should also consider the goals and capabilities of our coalition partners in planning. Therefore Defence is not the only – and sometimes will not be the leading – agency for dealing with security problems.

The essence of **national power** is for a country to maximise the ability to pursue national interests without external constraints, especially coercion. The main elements of national power are demography, geography, national resource base, physical infrastructure, industrial and commercial base, education and scientific capacity, social cohesion and culture, political leadership and international relations, information, and military power.

Australian Defence Doctrine Publication – Doctrine (2002)

The national effects-based approach uses systems thinking (see Section 4) to understand the adversary, the environment and ourselves. Systems thinking allows us to consider our actions in terms of their immediate impact, as well as the 'lower order' or consequential effects that our actions might produce. We need to understand the adversary well enough to see the costs and benefits of a particular course from their perspective, and not think of this perspective as a mirror of our own. Contributions from our allies and coalition partners will help to achieve this understanding.

Net assessment is an emerging concept for planning at the strategic level. This concept will contribute to a national effects-based approach by creating a process to analyse the total situation, including the adversary, ourselves, the environment, and the adversary's perceptions of us. It focuses on helping decision-makers to identify the right effects needed to achieve national objectives. This ongoing process uses the nation's intellectual capital – including government agencies, intelligence organisations, selected coalition partners and particular individuals from organisations such as academia or industry. The knowledge produced in this collaborative environment will help identify which parts of the adversary's system are important to its leaders and their strategy, and the tools that we can use to affect their will.

Effects-based operations

The national effects-based approach is applied through effects-based operations (EBO). EBO is defined as the application of military and non-military capabilities to realise specific and desired strategic and operational outcomes in peace, tension, conflict and post-conflict situations. From the military perspective, effects-based operations is more than just targeting and destroying an adversary's capacity to fight, but it also includes these aspects of warfare. It is important to understand that effects-based operations is more about a way of thinking and planning, and therefore about training our people, than about technology alone.

Defence and the ADF contribute to effects-based operations by shaping Australia's strategic environment to avoid conflict using deterrence, regional engagement, intelligence, military operations other than conventional war, and warfighting. While the ADF must be ready, at any time, to contribute to any of these effects, warfighting remains our focus for concepts and force development.

It is difficult to specify when or where future Australian Governments will use the ADF in warfighting. Generally, Australia uses warfighting as a last resort, often to reinforce the nation's commitment to collective security or in support of humanitarian objectives. Other governments, however, have used force to terminate developing conflicts, or used limited military operations as a signal of their intent and ability to fight against challenges. Regardless, we can be certain that Australia will use warfighting in accordance with international law, and we will probably be reacting to clear provocation. The difficulty in making judgments about exactly how, where or against whom the ADF might have to fight makes the principle of flexibility – through versatile and well-trained forces, a good understanding of the situation and preparedness – even more valid.



*A scene of devastation in Grozny, Chechnya.
Picture: Reuters*

SECTION 3

IMPLICATIONS FOR THE ADF

What benchmarks does the ADF set for itself to meet the challenges of future warfighting?

Sections 1 and 2 indicate that the ADF's most important future challenges will include coalition operations, the role of non-state actors, the adaptation of new commercial technology for military purposes, and the adoption of effects-based operations into our thinking. Since we cannot be certain how these changes will materialise at the time we are called upon to fight, a set of benchmarks – which describe our aspirations for the FWC – will be used to ensure that the concept meets the demands of future conflict.

Future Challenges for the ADF

The ADF will need to continue to prepare for operations against a broad range of actors: from irregular or transnational threats, to the organised forces of traditional states, through to hybrid wars involving both types of actors. In some cases, we will act as the peacekeeper or the peace enforcer. In others, we could be fighting to defend the nation or our allies. In all cases, the ADF will be the only element that the Australian Government can employ as an organised, armed force to protect Australia and its interests against external threats.

Regardless of what might change in the future, only a disciplined armed force capable of warfighting has the necessary skills and equipment to contribute to the full range of possible operational contingencies and peacetime tasks. Warfighting must therefore remain at the core of our preparation and training because it will remain a dangerous and difficult task that requires specialist training to master and significant personal risk to apply.

With this in mind, we must consider several other implications of the way armed conflict will be conducted in the future:

- The source of threats to Australia's national security will continue to widen beyond those from states to include non-state actors such as terrorists and criminals. The ADF must therefore expect to operate as part of a whole-of-nation response to any crisis. We must be ready to apply warfighting, but we might also be required to adapt our combat potential to carry out – either concurrently or separately – other types of operations, such as conducting evacuations, providing humanitarian relief or peacekeeping. We will need to ensure that we develop appropriate doctrine and conduct training so that we can adapt quickly.
- The other side of this issue is that non-military capabilities are likely to become integral to success at the operational level, and perhaps at the tactical. For example, police are likely to be important partners in establishing a secure environment in war-torn nations. Also, military forces may be tasked to provide logistic support to humanitarian agencies while the force is conducting combat operations to subdue or separate rival forces.
- We expect to operate with coalition partners, under a United Nations or international mandate, in the vast majority of circumstances. Some of these operations will involve interventions in collapsed states or intrastate conflicts that cannot be settled peacefully.
- New actors, new technology, and 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 information environments where conflicts are fought. The multidimensional nature of conflict will be reinforced by its ability to be conventional and unconventional at the same time.
- The ability to succeed in complex environments – including littoral and urban environments – is essential to future warfighting and needs to be considered in capability development.

- If threatened with direct military attack, Australia will act decisively against that threat in its maritime approaches. However, this is not the only way Australia could be threatened. Our national interests are truly global, and actions far removed from our immediate neighbourhood can have a direct impact on our citizens, trade and national life. Australia's security also rests on its ability to protect its citizens and infrastructure at home. Attacks by terrorist groups, or the activities of transnational criminals, could come to be seen as attacks on Australia. The ADF's ability to project power within Australia and its adjacent air and sea space remains vital; but the need to be capable of deploying forces overseas – generally as part of a coalition – remains important.
- The ability to obtain the right information at the right time will provide a significant warfighting advantage. This simple idea hides a danger: we may be swamped by information, or be paralysed while we wait for more information. Combining doctrine, training and technology to manage that information in *network-centric warfare* (described in section 4) will be an essential feature of our future warfighting concept.

Our preference for the manoeuvrist approach fits these emerging conditions and the enduring features of war. We continue to view our people as the main advantage in this approach, and we must develop our concepts and training to make the most of this valuable and scarce resource.



Coalition partners: Members of the ADF walk side by side with their U.S. counterparts.

Benchmarks for the FWC

These implications do not provide us with a clear-cut adversary, type of operation, or specific location where we will fight in the future. Consequently, we will adopt a series of benchmarks to describe our aspiration for the FWC. We will test the concept, through experimentation, against external and internal benchmarks.

External Benchmarks. These benchmarks are designed to ensure that the ADF can meet its responsibilities to Government in a national effects-based approach. The external benchmarks are:

- *Warfighting advantage.* Using the FWC, the ADF must generate a clear warfighting advantage over potential rivals. The ADF will gain this advantage through our ability to understand the battlespace better than our adversary, and then act decisively in a way that undermines the adversary's strategy. The FWC must be adaptable to all situations, including those where the application of force is not paramount.
- *Cultural relevance.* The FWC will build upon the ADF's strong culture and remain consistent with national values. The FWC will help the ADF towards seamlessness, while incorporating new ideas about national security.

The **seamless force** is the CDF's vision for the future ADF. This concept goes beyond the 'joint force', and envisages a force that is seamlessly integrated on two levels: where the single-services are integrated operationally with each other, and externally – or cross functionally – with the range of supporting (or supported) agencies.

Force 2020

Affordability. The ADF must implement the FWC within its actual and projected financial allocations.

Interoperability. The FWC must allow the ADF to fight alongside, and in some cases lead, our coalition partners. The FWC must also allow the ADF to work with other Australian Government agencies and cooperate with local and international agencies where required.

Internal benchmarks. These benchmarks describe the way we want to fight, as a seamless force, in the future. The prime determinant of our success will be the ability to apply *tailored effects*, which is the ability to achieve the right effect, at the right time and place. These effects must be consistent with other national actions. Tailored effects also implies the ability to respond to adverse developments, and to regain and retain the initiative. Tailored effects are produced when the following warfighting functions are conducted effectively:

- *Force application* uses military capability to defeat or deter the adversary. Military force will be applied to create physical and non-physical effects within complex environments. It will be delivered by appropriate platforms and weapon systems, and tailored to specific missions, while minimising unnecessary casualties and damage.
- *Force deployment* capabilities will position the ADF to conduct operations within Australia and offshore. Forces will be deployed in a timely manner, with optimal presence.
- *Force protection* capabilities will provide the necessary protection of forces and bases to ensure that the commander's plan is not jeopardised by the adversary's actions or the environment. Force protection will incorporate active and passive means to achieve the required effect.
- *Force generation and sustainment* capabilities will provide effective forces appropriate to the campaign plan. Force will be sustained on operations within Australia and offshore. Host nation support should not be assumed for overseas deployments, while the deployed force should be prepared to cooperate with coalition partners. Force generation and sustainment will integrate commercial and military logistic elements to anticipate demands, survive against adversary action, and reflect national coordination systems.
- *Command and control* capabilities will provide effective decision-making at all levels to synchronise assigned forces in a multidimensional campaign. This will involve balancing hierarchical command responsibilities with decentralised and concurrent actions in joint, combined and coalition situations.



A conceptual drawing of a futuristic catamaran.

- *Information superiority and support* capabilities will be created following a network-centric approach, in order to ensure that relevant, responsive and secure information will be available for commanders and their staff to help with the development of plans and the conduct of operations. Information superiority and support will also include the ability to cooperate with coalition and allied command and intelligence systems.

Creating an ADF that contributes to the national effects-based approach requires a force that can conduct warfighting better than any potential adversary. Achieving this goal will require change in a number of areas – from the way we view the ADF's role in achieving national objectives and protecting Australia's security through to the type of forces that we raise, train and sustain. The FWC is therefore not just, or even mainly, about new equipment: it is about people, and their individual and collective effort; about our organisation, and how we change it to make use of ideas; and it is about using information to help us fight better. The FWC requires a force that trains together, and includes people that trust each other and people from agencies outside Defence who share the task of securing Australia's future.

If the FWC can meet the benchmarks described in this section, then we will be creating an ADF that can achieve a warfighting advantage over potential rivals.

PART II

POSITIONING FOR THE FUTURE

Part I highlighted changes and continuity in our future security environment, which included the broader range of actors and issues that will affect warfighting. Part I also placed warfighting in its strategic context by describing the national effects-based approach and effects-based operations and described the benchmarks that the *Future Warfighting Concept* would need to meet to achieve its purpose of creating a warfighting advantage. The continuing challenge for the ADF is to position itself so that it can adapt to whatever conditions eventuate.

Part II describes how the ADF will approach this challenge. Section 4 describes Multidimensional Manoeuvre (MDM), which is the future warfighting concept; while Section 5 outlines the method that we will use to test and develop the future concept. These sections provide the ADF with a concept and a way to test its validity to ensure that the ADF remains relevant to Australia's future needs.



Unmanned Aerial Vehicles.



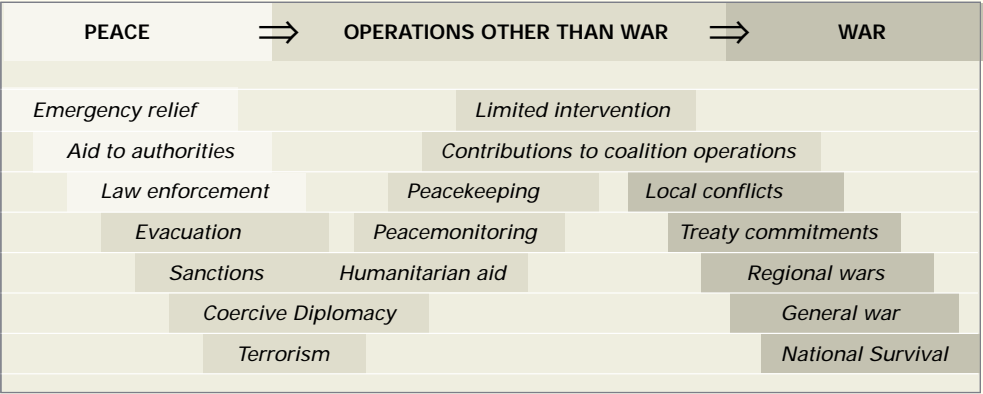
SECTION 4

MULTIDIMENSIONAL MANOEUVRE:
THE ADF'S FUTURE WARFIGHTING
CONCEPT*What do we think might be the best way of fighting?***The basis of Multidimensional Manoeuvre**

The ADF views conflict as a violent clash of wills, as opposed to purely a clash of organised military forces. It understands the clash in terms of its political causes and goals, and recognises that many different types of actors can fight in many ways. This view allows us to describe a spectrum of operations (see figure 1 below) that is divided into the broad categories of peace, operations other than war, and war. These operations are differentiated by the level and types of threat faced, but they will not necessarily be fought as separate conflicts: indeed we expect that the ADF will need to conduct a differing mix of warfighting, peacekeeping and humanitarian operations concurrently. We will also expect our adversaries to employ different tactics against us – ranging from terrorist to guerilla through to conventional – either concurrently or separately. It would be a mistake to focus on some types of conflict and neglect others. While Multidimensional Manoeuvre describes our concept for dealing with the warlike end of this spectrum, its basic ideas are adaptable to other operations.

Multidimensional Manoeuvre is based on using an indirect approach to defeating the adversary's will to oppose us. This approach seeks to negate the adversary's strategy through the intelligent and creative application of effects against the adversary's critical vulnerabilities. The approach also considers the adversary as intelligent and adaptive; consequently we need to take measures to protect our own strategy.

FIGURE 1: THE SPECTRUM OF OPERATIONS



Source: Force 2020

The ideas behind Multidimensional Manoeuvre are taken from our experience of warfare, and most are included in our current doctrine. For example, we continue to recognise the importance of inducing shock so that our adversary can neither interfere with our operations nor effectively develop their own. Shock produces further vulnerability in the adversary, and eventually leads to the condition where the adversary's system is unable to function in a way that allows it to achieve its purpose. This is ultimately a psychological effect – an effect upon their reason and will to continue with conflict.

Critical vulnerabilities are characteristics or key elements of an adversary's system that if destroyed, captured or neutralised will significantly undermine the fighting capability of the force or will of their leaders.

A **dilemma** is created when an adversary is faced with undesirable choices as a result of our action.

In his concept of the **indirect approach**, Sir Basil Liddell Hart argued that the key to victory was to dislocate the enemy – that is, rendering strengths irrelevant – psychologically or physically. Such an approach takes the line of least resistance or least expectation to avoid adversary strengths and exploit weakness.

The indirect approach can be contrasted with the *direct approach*, which focused on defeating the adversary's main forces in a battle to win territory. Liddell Hart saw this approach as costly and potentially indecisive.

We intend to induce shock by creating dilemmas for the adversary that prevent them from acting effectively. We will do this by deceiving the adversary, creating surprise, and applying effects that disrupt or dislocate their capability and will to fight. At the same time, we seek to protect our vulnerabilities from adversary action. Warfighting remains an essential – but not exclusive – method for creating these effects. Accurate, timely and assured information is central to our ability to fight in this way. Some other practical considerations for applying Multidimensional Manoeuvre are outlined below.

Tempo places our action within a competitive cycle relative to our adversary. While developing a superior tempo to our adversaries is generally desirable in a conventional conflict, having a slower tempo may be more effective in the non-linear and non-contiguous battlespace (see Section 1). Therefore our aim is to develop, and then maintain, an optimal tempo that allows us to gain and then maintain the initiative. Improving the commander's situational awareness is critical to controlling tempo, which makes a network-centric approach (see below) important.

Agility, which is the ability to change from one type of activity to another in time to be effective, is inherent in the idea of tempo. The quality of agility – as a characteristic of our force structure, planning, and training – will be important because we cannot expect to start from a position of advantage in conflict, which makes the ability to regain the initiative in such situations is essential.

We increase the impact of force when a number of different effects are created on the adversary's system at the right time and right place. *Simultaneity* aims to create one or more dilemmas that prevent the adversary from reacting in time to be effective. The possession of different options for creating effects, as well as the synchronisation of military and non-military effects towards a unified aim, will help to achieve simultaneity.

A conventional military force can *fight asymmetrically*, which demands that we change the rules so that we do not have to fight like with like, or can avoid battle on unfavourable terms. Within this idea, we will seek to achieve *dissimilarity*, where we apply forces in such a way that the adversary is not expecting; and *overmatch at decisive points*, which is produced by creating more or greater effects than the adversary can counter. We will achieve asymmetry against most adversaries by using our conventional forces to apply coercion or direct pressure in unconventional ways. Fighting asymmetrically may involve using lethal and non-lethal force, acting in concert with other elements of national power, or acting against critical vulnerabilities that are not usually the focus of military operations. Increasingly, these effects will be produced from both kinetic and non-kinetic weapons.

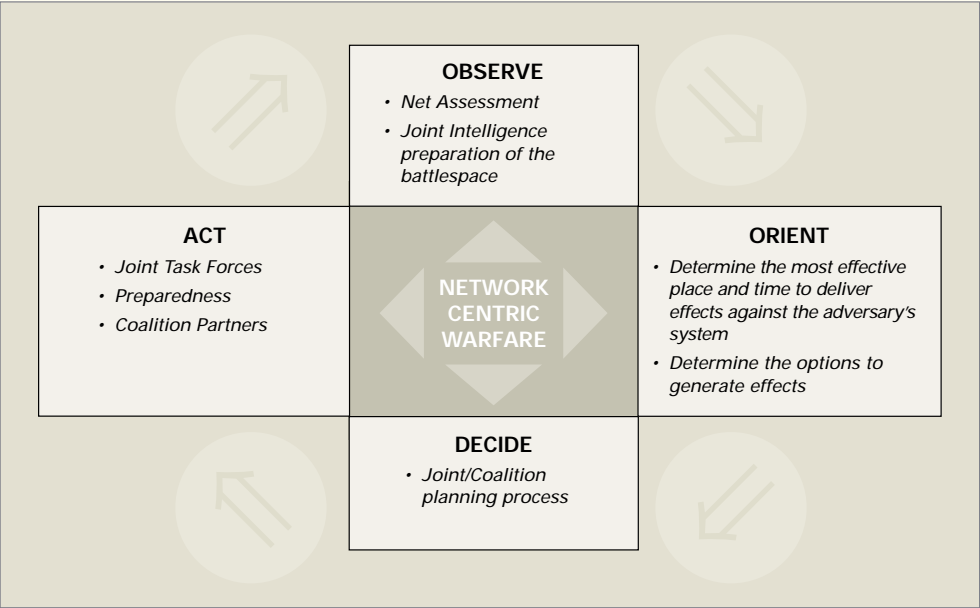
Deception and surprise are part of an 'asymmetric' attitude that refuses to accept conflict on the adversary's terms. Surprise is created when the adversary is unable to react effectively to our initiatives in time. Deception is created by measures that mislead the adversary. When synchronised, surprise and deception are integral to our efforts to generate shock.

Warfighting will be required both within Australia and beyond. Consequently, the ADF must be capable of *deploying and sustaining forces* over great distances. Many areas where we will operate will be remote from modern services; some will have been devastated by conflict. While we might rely on support from coalition partners or sometimes host nations when we are deployed further afield, we will need to be more self-sufficient for operations closer to home. Regardless of the location, ADF task forces will be deployed in time to be effective and in formations that allow them to fight immediately on arrival. Effective sustainment using national, international or host nation support – if available – will be required to ensure that the force can remain in the battlespace for the required time.

Creating a dilemma

Multidimensional Manoeuvre requires the ability to create a dilemma for an adversary. This task requires, firstly, a deep understanding of the adversary, the environment, our own forces and importantly, how the adversary views their goals and our capabilities. This is achieved through net assessment at the strategic level (see section 2), and joint intelligence preparation of the battlespace at the operational level. These processes are an ongoing feature of our activities. They will involve the reciprocal exchange of information between different levels of command, across government agencies and with our coalition partners. Secure networks could provide us with a significant advantage in this process, especially where people located in different areas can collaborate in real time. This understanding will position commanders to determine the most effective place and time to apply effects against the adversary.

FIGURE 2: MULTIDIMENSIONAL MANOEUVRE



The second stage involves selecting the best options to create those effects from the resources available to government. In effects-based operations these resources include non-military and military options, which are applied to achieve similar or complementary effects. The aim is to develop multiple operations that combine to present the adversary with a dilemma that he cannot resolve. In a military context, deceiving the adversary so that they disperse scarce resources to protect assets (which one does not need to strike to achieve one's aim) can create a dilemma. In a wider context, threatening the personal wealth of an adversary's leaders can create a dilemma by forcing the leaders to choose between private interests and political goals.

The insights developed through net assessment and Joint Intelligence Preparation of the Battlespace can be used to decide on the course of action through a joint and coalition planning process. Decisions should be complemented, wherever possible, with simulations to test the plan and identify any negative consequences of our actions or new opportunities that are revealed. The potential of other government departments or agencies to create effects must also be taken into account in warfighting planning because military options alone may not achieve the required effect.

The ADF's ability to act – that is, produce effects – is derived from our capability, which is the combination of joint task forces and preparedness:

- Task-organised *joint task forces* (JTF), drawn from the force structure that exists at the time, will generate the effects identified as crucial to our concept of operations. Noting that our forces might need to conduct a wide range of warfighting and other operations simultaneously, the JTF must be adaptable without compromising any of their functions. In the future, we may see advantages in creating inter-departmental/agency coordinating groups at the operational level, either temporarily or permanently, to ensure that our whole-of-nation effects are properly synchronised.
- *Preparedness* requires that a force pays balanced attention to the fundamental inputs to capability⁸ while allocating resources based on strategic priorities. Preparedness also considers other needs including conducting concurrent actions within the same campaign, such as protecting important bases and infrastructure, and reacting to new crises elsewhere.

⁸ The fundamental inputs to capability include personnel, collective training, organisation, major systems, supplies, facilities, support and command and management.

While not part of our capability, contributions from *allies and coalition partners* could provide valuable assistance in operations. The ADF will be prepared to fight alongside our allies and coalition partners using Multidimensional Manoeuvre. We may also be required to lead coalitions under some circumstances. Consequently, MDM will be developed with due consideration to our allies' warfighting concepts, as well as to those of our potential coalition partners.

Network-centric warfare (NCW) is a key enabler that will allow us to conduct Multidimensional Manoeuvre, and achieve the seamless force envisaged in *Force 2020*.⁹ Network-centricity will help us to link national, ADF and coalition sensors, engagement systems and decision-makers into an effective and responsive whole. At its core, NCW seeks to provide the future force with the ability to generate tempo, precision and combat power through shared situational awareness, clear procedures, and the information connectivity needed to synchronise our actions to meet the commander's intent. NCW will require an approach that integrates our existing processes and systems with new technology and doctrine in the most effective and efficient way. NCW might offer us a whole range of warfighting advantages, including the ability to focus limited resources using our superior knowledge, increased protection for our forces through information, and an ability to share information quickly and securely across current boundaries. It also contains potential vulnerabilities, including those arising from reliance on high-technology communications and increased data flows. NCW is explained in more depth in a separate concept paper that includes detailed questions to be addressed in our experimentation program.



Operations room in a Royal Australian Navy Frigate.

Many of these concepts are not new, but our whole-of-nation approach, focus on effects, and desire to include coalition partners at every stage make the way we plan to achieve our future strategic objectives very different from today. For example, the idea that information is important to operations is not new, but the way we use network-centric warfare to increase our situational awareness and ability to apply the right effect is. Similarly, the concept of creating a dilemma for an adversary is familiar to us. However, generating situations that lead to a dilemma for an adversary will require a different approach to selecting options and a more versatile force – one that can do more than one operation at a time, and produce effects on different critical vulnerabilities at or near the same time.

⁹ *Force 2020* referred to network *enabled* operations, rather than network-centric warfare. This change has been made to incorporate other doctrinal changes, and the ideas are still the same.

Situational awareness is the ability to observe and determine the orientation of both your own, neutral and the enemy's forces; as well as the environment.

Preparing for Multidimensional Manoeuvre: Professional Mastery. The importance of professional mastery is based on our understanding of the chaos of war, and the recognition that morale and intellect are central to warfighting effectiveness. Our doctrine and education and training systems are central to developing professional mastery as they promote the individual's analytical and intuitive skills, create trust and build teams. In addition to training the force to be more proficient, we must develop the mental toughness and strength of character within our members. Consequently, leaders at all levels need to take a personal interest in guiding their people towards professional mastery and ensuring that people are selected for the right jobs. The human element of professional mastery is therefore central to applying MDM, and the following issues are developmental imperatives:

- Operational Art is at the centre of our thinking on the conduct of war. Operational art is the skilful employment of military forces to attain strategic goals through the design, organisation, sequencing and direction of campaigns and major operations. It translates strategy into operational and ultimately tactical action.¹⁰ Systems thinking is a useful complement to the operational art because it encourages the development of understanding about both the adversary and ourselves as systems that interact together and within broader systems. Systems thinking also helps us to see how activities such as shaping the battlespace can create opportunities for us later in the campaign.

At its most abstract, **professional mastery** is 'special level of proficiency' that individuals strive to achieve so that they can effectively apply the art and science of war.

In more concrete terms, professional mastery is about how individuals apply the skills, knowledge and attitudes developed through training, education and experience to meet the requirements of the task at hand.

It is the **human element** of professional mastery that brings our strategic objectives, doctrine and materiel strength together to form a cohesive and creative force.

¹⁰ Our current approach to operational art is described in the *Australian Defence Doctrine Publication* series, especially *ADDP 3 – Operations*.

A **system** – such as an organisation or a living organism – contains a number of separate elements that have both a relationship with each other and combine to achieve a common purpose. Consequently, a change in one element of the system has an effect on the entire system.

Some systems, such as a society, contain many different elements and are influenced by outside events. These systems are *complex* and open, and they can adapt to change – up to a point.

The term system of systems is used to describe the effect where multiple systems interact with each other to produce a more complex system.

- Developing an ability to identify and manage *risk* will allow our people to function in extreme ambiguity while understanding the potential implications of situational changes. This attitude needs to be developed in training, by inculcating processes including safety risk management, and carried through into operations.
- Commanders will exploit the benefits of *mission command*, which is a decentralised command philosophy that focuses on achieving an intent, within an information environment that offers significantly greater situational awareness than has been experienced in the recent past.

Professional mastery therefore aims to get beyond equipment and force structures to ensure that the people in Defence are well placed to cope with the challenge of the future and its conflicts.

The value of intuitive decision-making – Captain John Collins, RAN

In 1940, Captain John Collins RAN of HMAS *Sydney (II)* was on patrol in the Mediterranean. Admiral Cunningham's verbal orders to Collins were to support four British destroyers through the Kaso Strait and then sail northwards to patrol for smugglers off Piraeus. After the escort task was completed, Collins assessed the situation and decided that the more likely threat was in the south. He explained, *'Not being bound by written orders I was able to adjust the original directions and decided to steam due west twenty miles north of Crete till sunrise. Thus Sydney and Havock would be in a position to support the destroyers till they were clear of the Anti-Kithera Channel...Something told me that the C.-in-C. would approve had it been permissible to break wireless silence.'* On the basis of this intuitive decision, Sydney sailed south and was within an hour's steaming distance when the British destroyers encountered two Italian cruisers. Sydney was able to intervene and assist with the destruction of one Italian ship, the *Bartolomeo Colleoni* and pursue the other.

Vice Admiral Sir John Collins, *As Luck Would Have It*, Angus & Robertson, Sydney, 1965

How will we fight?

The ADF must be flexible if it is to contribute to the national effects-based approach described in Part I. This flexibility will be achieved by creating an ADF that can be applied in different ways across the widest possible range of operations. Consequently, Multidimensional Manoeuvre must allow the ADF to conduct warfighting and other operations, such as peace operations or law-enforcement tasks where the application of violence is not a primary need.

Within Multidimensional Manoeuvre, we will set the conditions for success by **shaping the battlespace**. Shaping activities, which are linked to the strategic concept of shaping the strategic environment, will include effects that are created through physical actions such as deployment and protective activities, and non-physical means such as psychological operations.

The ADF will be able to **strike** if this suits national strategy. Strike will require the ADF to have options to produce effects – using surprise to apply physical or non-physical means – in order to terminate a conflict quickly and on Australia's terms. It will require an ability to generate effects at some distance from Australia. Once hostilities are under way, strike will also have the ability to attack the adversary's will and ability to fight, creating effects that are precise and incapacitating. A credible strike capability could deter an adversary or force them to divert resources to defensive measures.



Unmanned Aerial Vehicle (UAV) on maritime patrol.

The ADF will be ready to **control the battlespace** in order to achieve freedom of action. Section 1 discussed this battlespace as multidimensional, non-linear and possibly non-contiguous: this great variety of possible situations, together with the potential mix of conventional and unconventional adversaries, creates significant challenges for a relatively small force such as the ADF. So while we are able to dominate the battlespace in localised and smaller conflicts in the near neighbourhood, we must be prepared to contribute to the effects of a coalition in others. In general, the ADF will aim to deploy robust forces from secure bases against the adversary's most exposed vulnerabilities, with such speed and simultaneity that the adversary can neither interfere with our operations nor effectively develop their own. We will use information and combat operations to control the battlespace. Given the differing forms that the future adversary could take – especially where there is no recognisable force – we should not expect to fight every adversary in a 'decisive battle'. We must also be ready and able to undertake operations to undermine the adversary's will, and do so in a way that maintains the initiative and our legitimacy.

Multidimensional Manoeuvre also recognises that the end of hostilities does not represent the end of the ADF's role. The ADF will be capable of mounting, conducting, sustaining and, where invited, leading operations that **secure the peace** and restore stability to conflict-ridden countries. We will always conduct such operations with coalition partners, under a UN or international mandate. Our ability to operate harmoniously with host nations, government and non-government agencies and international organisations will be a key contributor to success in these operations.

Multidimensional Manoeuvre therefore provides the Government with options to secure national objectives that are consistent with the national effects-based approach and are adaptable to different requirements. This concept recognises that in some circumstances, such as where Australia's sovereignty needs to be protected from transnational threats, the Government will want to call on the ADF's warfighting potential rather than its weapons. Creating a force to operate under the different conditions created by direct conflict and 'peace' requires a coherent approach to force development. Each Service will develop concepts to explain how they will operate as part of a joint force in MDM.



Members of the ADF on patrol in Dili, East Timor.

Securing the Peace – INTERFET in East Timor

The ADF-led INTERFET coalition worked to secure the peace in East Timor from September 1999 until the final handover to the UN Transitional Administration (UNTAET) in February 2000.

In May 1999, the Indonesian Government agreed to a ballot on the question of East Timorese independence. The ballot was quickly followed by serious outbreaks of violence. Under Operation *Spitfire*, ADF and New Zealand Defence Force personnel worked to evacuate to Darwin UN mission staff, electoral officers, locally employed UN staff and media representatives using RAAF and RNZAF C-130 aircraft.

The next major operation in East Timor followed resolution 1264/1999 of the UN Security Council on 15 September. The resolution authorised the establishment of a multinational force (which later came to be called *International Force – East Timor* or INTERFET) under a unified command structure to restore peace and security in East Timor, protect and support the UN mission in carrying out its tasks and, within force capabilities, facilitate humanitarian assistance operations. INTERFET's advanced force – including special forces, light infantry, naval vessels, aircraft, light wheeled and armoured vehicles and helicopters – arrived on 20 September to commence this mandate under Operation *Stabilise*. Coalition soldiers patrolled Dili and detained persons identified as being potentially hostile to the restoration of peace and security so that UN staff and aid agencies could return to the area.

Later in September, INTERFET worked to deny the militia's lines of communication along the border between East and West Timor. INTERFET then deployed to establish a presence in the Oecussi Enclave following reports of thousands of East Timorese, who were in need of food and medical treatment, were hiding in the hills. Militia in the area were disarmed, and HMA Ships *Brunei* and *Success* brought supplies in to provide a safe haven for the people in the area. Once secured, responsibility for the territories in East Timor was progressively handed over to UNTAET, which was tasked with the follow-on mission of creating a civil administration to run the country until independence.

The operations by INTERFET demonstrate the importance of joint, coalition and interagency co-operation to securing the peace.

What functions must we perform to fight like this?

The *future warfighting functions* are a simple model that describes what military forces must do in order to be effective. These functions are mutually supportive and there is some overlap. We will use the *future* warfighting functions to unify our force development effort. These functions describe how we will achieve the benchmarks outlined in Section 3.

Multidimensional Manoeuvre becomes reality through the application of tailored effects. The ADF's ability to produce these effects will be supported by force application, force deployment, force protection, and force generation and sustainment. These functions will be integrated by command and control, and information superiority and support.

- **Force Application.** The ADF will generate a range of lethal and non-lethal effects that are timely and appropriate to the commander's intent. Our effects will be particularly relevant in complex physical and information environments. We will need to ensure that the effects we generate are in proportion to the mission's requirements. The ADF will be able to apply force in both close combat, and from stand-off ranges as needed in the circumstances. Precision, which requires more than just guided weapons, will be an essential. Achieving precision will require a reliable way to locate and identify hostile, friendly and neutral forces; the ability to conduct engagements at ranges varying from close to extended distances; and the ability to control the extent of damage.



A Futuristic Submarine Concept.

Improved operator discrimination is one example of how precision can be achieved. For other systems, better information for targeting and post-strike assessment will be central to effectiveness.

- **Force deployment.** The ADF will be capable of deploying rapidly from its home bases to the place where it can generate the required effects. Where the physical movement of forces is appropriate to the effect required, these forces will arrive in the area of operations ready for immediate combat.

- **Force protection.** Joint task forces will be structured and informed so that force elements can combine to protect each other to maintain the commander's freedom of action. Force protection will be achieved through the grouping of units into balanced organisations, and techniques such as early warning, deception, camouflage, dispersion and stealth. Protecting critical bases for deployed forces might include placing some logistic and command elements out of the main area of fighting. The force will also be capable of absorbing some adversary attacks, either through redundancy or hardening. Force protection is important for all phases of an operation: starting with protective security in our home bases, in transit to and from the area of operations, and on operations themselves.
- **Force generation and sustainment.** The deployed force will reduce its vulnerabilities and increase its mobility through reachback and precision sustainment for the majority of logistic requirements. Future forces will aim to substitute fossil fuels with renewable resources – possibly solar energy or hydrogen – to enhance the capacity for forces to operate efficiently with reduced personnel and logistic overheads. Selective mobilisation will focus resources into essential units and functions. Defence will require the assistance of its Reserves, industry and other government departments to sustain operations and generate new forces.



An Army Black Hawk being loaded into an Airforce C130 Hercules.

Selective mobilisation is a level of mobilisation that involves raising the level of preparedness for specific individuals or forces. Other levels of mobilisation include Partial, Defence mobilisation and National mobilisation.

Australian Defence Force Publication 4 - Mobilisation

- **Command and control.** The ADF's command and control system will combine mission command with a network-centric approach. This combination will result in the ability to make faster and better decisions than our adversary at all levels of command. While technical improvements will help communications and decision-making, the ability to make intuitive judgments in ambiguous situations will be a highly valued quality in all ADF members. Joint task force headquarters will be capable of commanding assigned Australian and coalition forces.

Reachback enables deployed forces to access military or non-military support from the most appropriate source outside the battlespace. Reachback provides future forces with the knowledge that when contingencies do arise, additional support can be accessed.

Precision sustainment involves providing the commander with the right amount of support at the right time. This method will reduce the in-theatre logistic footprint – and hence vulnerability to attack.

Future Joint Logistics Concept

- **Information superiority and support.** The ADF will employ a network-centric approach to link our fighting units, sensors and decision-makers in a way that increases our situational awareness and capacity to act decisively. Information superiority will require a secure infrastructure that allows information to be collected, analysed and distributed to the right people at the right time, providing friendly forces with an understanding of the situation that is superior to the adversary's. This information will be drawn from a wide range of local, regional and global sources (particularly allied and coalition sources), including space-based capabilities; and will require tools to fuse, manage and process this information into intelligence. Also, the ADF will ensure that the Government and other departments understand the evolving circumstances so that military actions are in concert with a national effects-based approach.



Aerial view from a Global Hawk.

Human intelligence is a vital source of information for understanding the adversary's intentions.

The task now is to determine how we will develop Multidimensional Manoeuvre into a warfighting doctrine that delivers the ADF with an advantage over potential rivals, while ensuring that we remain interoperable with our coalition partners. Developing a better understanding of how the warfighting functions will change the way we fight will be an important part of this task. We will employ concept development and experimentation to explore MDM.





SECTION 5

CONCEPT DEVELOPMENT AND
EXPERIMENTATION*What should we be doing about it now?***What is concept development and experimentation?**

Concept development and experimentation is the application of the structure and methods of experimental science to the challenge of developing future capability. The purpose of this activity is to provide better advice for decision-makers; it also has the additional benefit of helping the Defence organisation to learn about the future. Concept development and experimentation is essential because it helps military innovators to improve and prove their ideas without taking huge risks or outlaying significant resources.

Concept development gives broad and sometimes ill-defined ideas a chance to be examined by groups of experts in a logical process. These ideas can come from many sources: they can be generated by staff processes, operational experience, formal analytical work, or proposals that are published in our journals. There need be no boundaries on the types of ideas that enter the concept development process, although some simpler ones that modify techniques or procedures might be 'fast-tracked' into practice because they are intuitively sound. Typically, promising ideas with a broader scope are explored and refined through workshops and larger seminars to the point where more mature concepts are formed. These concepts are further debated in committees or working groups and, if accepted, are submitted to the experimental process. Once validated and accepted, concepts are incorporated into our organisation – for example, through doctrine and capability development processes.

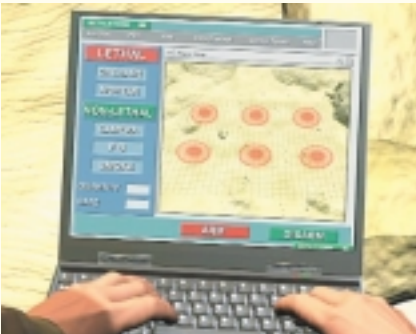
*Attack helicopter simulator.*

While not every decision requires it, experimentation is a powerful tool; it provides a better understanding of a range of issues associated with capability and concept development, especially in complex or contested situations that are difficult to address through other approaches. Experimentation aims to assess the feasibility, utility and limits of innovative warfighting concepts in a controlled environment. By using methods that integrate professional judgment, mathematical models, historical experience and field performance, experimentation permits a broader range of participants to be involved in the development of concepts and advice. Experimentation is also an economy measure, since it can provide a means to test ideas without large resource outlays and a way to demonstrate alternatives for decision-makers. It also provides a means of gathering evidence when weapons, situations and organisations to support a concept do not yet exist.

The experimental process is not enough in itself, however: the results of experimentation must be integrated into the capability development process. Such integration requires an ability to capture and cross-test findings gained from experimentation, and use this information to complement the judgment of senior decision-makers. When this integration is achieved, we will have a powerful way to inject new thinking into acquisition, organisation and doctrine development projects.

How does Defence plan to implement concept development and experimentation?

Defence’s Concept Development and Experimental (CD&E) Plan coordinates joint experiments and builds links to multinational, single-service and other experiments on a cooperative basis. The CD&E Plan aims to link our thoughts about future warfighting to strategic guidance, so that gaps in current and planned force structures can be addressed. Results from CD&E will be timed to influence key force development milestones, such as project schedules. This information aims at making our decision-makers better informed so that they can direct force development initiatives through key planning documents such as white papers, the Annual Strategic Review, and Defence Capability Planning Guidance.



Command and Control laptop computer.
Picture: Metalstorm Ltd.

Developing the *Future Warfighting Concept*

This concept will be developed through the *Joint Experiment (JE)* series. The first experiment, JE03, will begin with a hypothesis concerning the role and utility of Multidimensional Manoeuvre, including the future warfighting functions. This hypothesis will be tested by using a future force, or operational architecture, in a number of different scenarios. These results will be compared to the benchmarks outlined in Section 3 to help determine whether MDM meets its intended purpose. This initial experimental work will be used to compile more detailed benchmarks and warfighting functions, which will be released in separate annexes. In addition, MDM will be discussed in multinational fora in order to test its level of compatibility with our major allies’ warfighting concepts.

Joint Experiment 03 will be the ADF first joint CD&E activity. This activity aims to assist Defence to generate a set of priorities for the development of future experimentation.

Also, the concept development process will be used to create a number of ‘exploratory’ concepts that consider potentially different approaches to warfighting. For example, we might explore a concept – initially through analytical studies – that is based on very small units adopting a totally different way of creating effects to those units applying Multidimensional Manoeuvre. Alternatively, we might look at a concept where our forces fight from remote locations and use robots in close combat. While we may not adopt many of these concepts, we can use them to test MDM or develop ideas from them to include in later editions of the *Future Warfighting Concept*.

This first edition of the *Future Warfighting Concept* provides the starting point for a new way of developing capability in the ADF. It will allow us to identify changes in our future warfighting environment and position us adapt to these changes. The challenge for the entire Defence organisation is to use this publication as a catalyst for thinking about how we can retain our warfighting advantage over any possible adversary.



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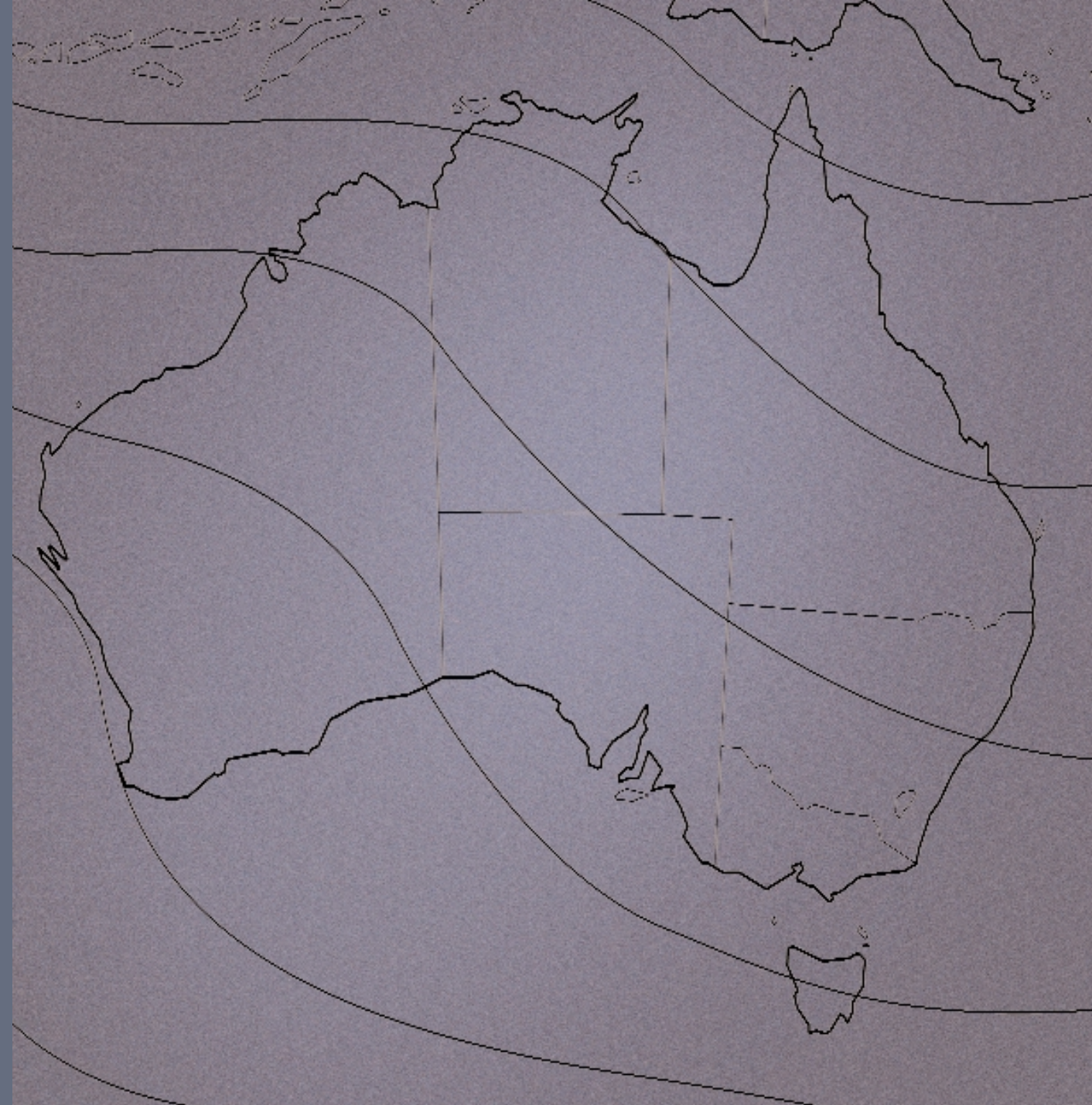
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