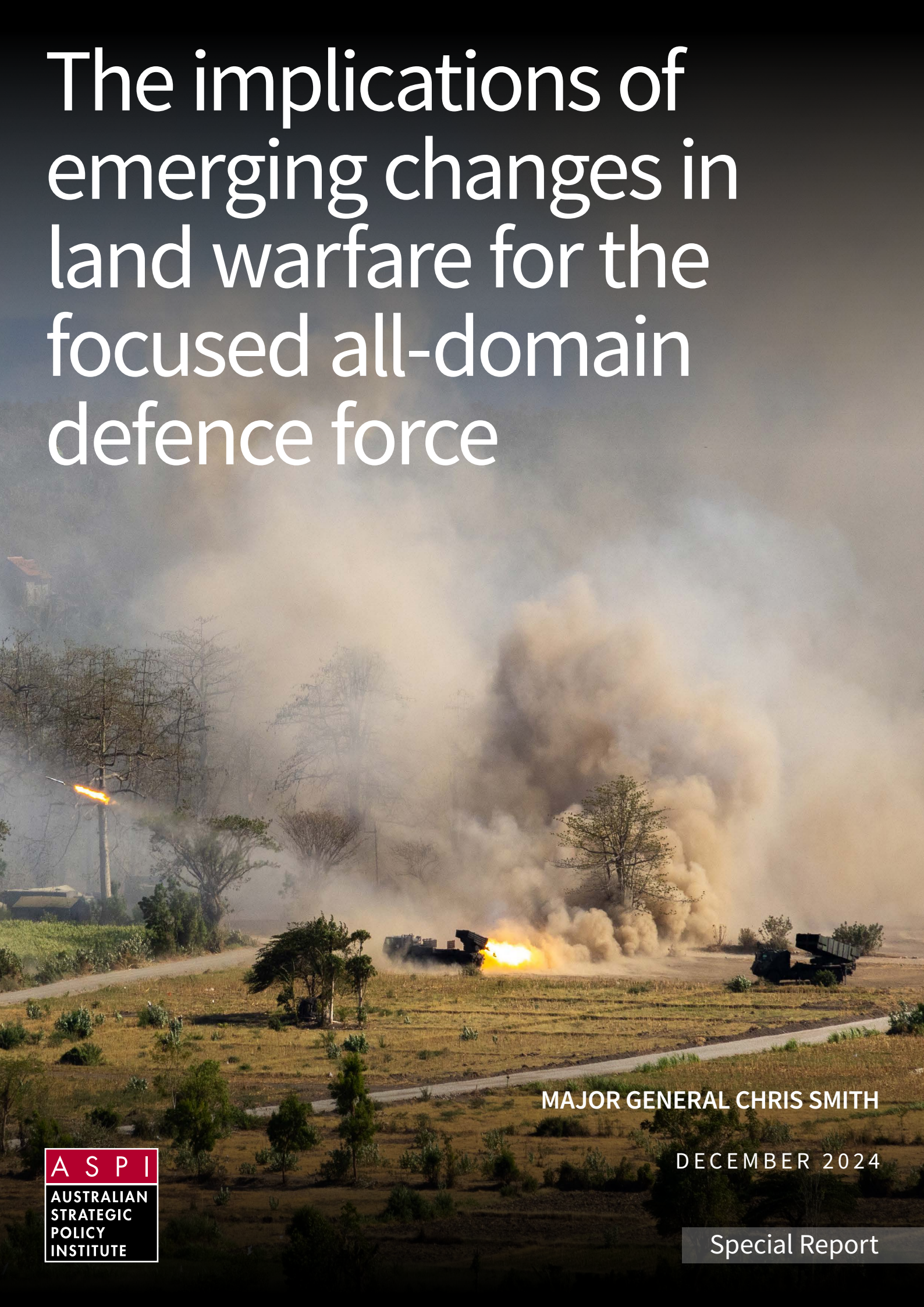
The implications of emerging changes in land warfare for the focused all-domain defence force



MAJOR GENERAL CHRIS SMITH

DECEMBER 2024

Special Report

ASPI
AUSTRALIAN STRATEGIC POLICY INSTITUTE

About the author

Major General Chris Smith DSC AM CSC is the Deputy Chief of Army, a position he has held since 31 January 2024.

Major General Smith graduated from the Royal Military College—Duntroon in 1995 and commissioned into the Royal Australian Infantry Corps. His regimental service included command appointments within the 2nd Battalion, Royal Australian Regiment, staff appointments within the 3rd Brigade and training staff appointments at the Royal Military College—Duntroon.

He has held several senior appointments within Australian and US headquarters. They include appointments as Chief of Staff to the Chief of the Defence Force, the Chief of the Defence Force's Liaison Officer to the Chairman of the Joint Chiefs of Staff, Director Future Land Warfare and Director General Land Operations (G3) of the Australian Army. Most recently, Major General Smith has completed a two-year appointment as the Deputy Commanding General US Army Pacific.

His operational experience includes as Commanding Officer, 2nd Battalion Battle Group, Afghanistan, 2011; Operations Officer, 2nd Battalion Battle Group, Iraq, 2006; UN Military Observer, Lebanon and Golan Heights, 2002; Platoon Commander, UN Assistance Mission, Rwanda, 1995. Major General Smith also served as the Commander Landing Force for the newly formed Australian Amphibious Ready Element in 2013.

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Bec Shrimpton, former Director, Defence Strategy and National Security, ASPI, helped me to finish the report. Without Bec's help this work would have sat idle.

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The report is dedicated to the current and future officers and soldiers of the Australian Army, who might have to do the very things described in this report.

Cover image: Defence image library, online.

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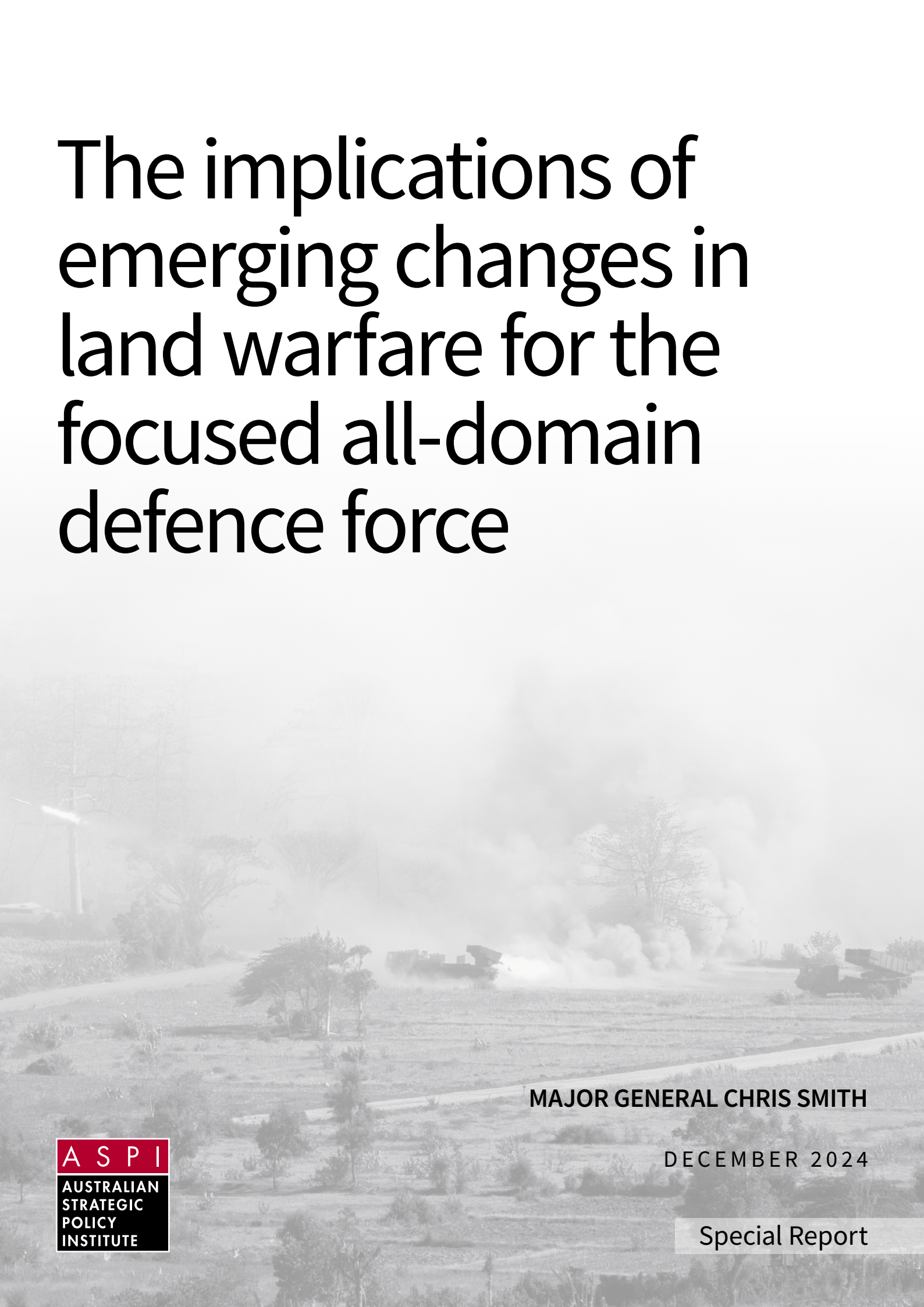

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The Australian Strategic Policy Institute was formed in 2001 as an independent, non-partisan think tank. Its core aim is to provide the Australian Government with fresh ideas on Australia's defence, security and strategic policy choices. ASPI is responsible for informing the public on a range of strategic issues, generating new thinking for government and harnessing strategic thinking internationally. ASPI's sources of funding are identified in our Annual Report, online at www.aspi.org.au and in the acknowledgements section of individual publications. ASPI remains independent in the content of the research and in all editorial judgements. It is incorporated as a company, and is governed by a Council with broad membership. ASPI's core values are collegiality, originality & innovation, quality & excellence and independence.

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Special Reports are written by both internal and external authors, they are intended to deepen understanding on critical questions facing key strategic decision-makers and, where appropriate, provide policy recommendations.

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Preface

The views and opinions expressed by Major General Smith are his views and do not necessarily represent the official position of the Department of Defence. They are the views of a military professional exploring how land forces might best contribute to national defence in the light of emerging changes to warfare yet grounded in the history of war and warfare generally.

The report is an elaboration of a short paper the author wrote with Lieutenant Colonel Ben Flores (US Army) published by the Association of the United States Army in 2023. That paper looked at contemporary features of land warfare, suggesting that the increased potential for stalemate and advantages to the tactical defence made *fait accompli* an attractive option for aggressors.

The speed with which the strategic environment and warfare are changing demands constant reflection and adaptation by Australia's military professionals. The author's analysis is proffered in good faith for the sake of further discussion and contest of ideas.

The report also derives from a strong personal sense of obligation for senior leaders of the profession of arms to lead and encourage professional discourse on the ever-changing features of warfare; and through that discourse, *inform the public of the same.*

Introduction

> Failure of imagination
>
> —A phrase coined by the 9/11 Commission describing something undesirable but predictable and not planned for.

Many elements of 21st-century warfare echo those of the 20th century. The nature of war as a brutal and fundamentally human endeavour has endured despite the introduction of stealth aircraft, precision missiles, drones, satellites and cyber capabilities to contemporary battlefields. Making sense of this context is just one of many challenges confronting the Australian Army and how it best contributes to the joint force.

At the launch of the 2024 National Defence Strategy and Integrated Investment Program, Deputy Prime Minister and Minister for Defence Richard Marles declared that the ADF must be able to project power. He asserted that the ADF must be able to guard against coercion and disruption of vital maritime trade routes and deny any adversary the ability to operate against Australia's interests.[1]

To achieve those policy aims, current Australian strategic guidance prescribes an all-domain capable ADF equipped with long-range air-, sea- and land-based strike systems.[2] This force structure requires the Army to develop a littoral bent in addition to a combined arms land system that can 'secure and control strategic land positions and provide protection for the ADF'.[3]

The contemporary mix of new technologies, social and geographic factors provides enormous benefit to defending forces in warfare. Land forces can now exercise sea denial and perhaps even sea control from the land. The result of those factors is a closer strategic connection between land and sea; one in which control of land is becoming more decisive for control of the sea. It results in an emergent strategic value for surprise attacks across the sea and the need for much closer integration of forces operating on land and sea, particularly, but also in the air, space and cyberspace.

The Army has more than 100 years of experience with littoral operations, both seaward and inland, and it has the institutional capacity to quickly adapt to changed strategic requirements. What follows is an analysis of emergent features of contemporary warfare coupled with a range of lessons learned from the history of war relevant to developing solutions for how land forces might contribute to the all-domain ADF.

The first section of this report explores the effects of emerging technologies and social circumstances on warfare and how armed forces might adapt. The second section examines the implications of the features of

contemporary battlefields for the Army's role in the focused ADF. The third section explores the implications of the tendency for wars to go on much longer than the belligerents would like. The fourth section explores the often-overlooked role of land forces in deterrence. The fifth and final section makes note of the challenges surrounding the logistics of ADF land warfare in a maritime environment and discusses the relative merits of heavier land forces in the Indo-Pacific.

Contemporary warfare and its implications

Much of the debate about the future of war concerns the procurement of advanced military capabilities and the potential decisiveness of those capabilities on modern battlefields. This bias is understandable, given the pace of technological change and the tendency to conflate battle and war (discussed in the section 'Quick victories, long wars and land forces'). What is largely overlooked, however, is the more complex matter of how the inevitable reactions and counteractions to the mix of new technologies affect war and warfare when combined with social influences and geographic factors. The compounding effects of many small changes in warfare are particularly unpredictable and much harder to perceive than direct technical effects.

The combination of new things, coupled with adversaries' responses to them, creates emergent and unexpected circumstances. Take, for example, how the mix of technologies and social movements unleashed before World War I was not only unable to negate the need for close combat, but resulted in a stabilised front characterised by trench systems extending from the Atlantic coast to the Swiss Alps. The stabilised front resulted in close combat and violence on an unprecedented scale. It was unexpected in the main, and it was contrary to the aims of all involved. It took over four years of fighting, countless live experiments, and millions of dead to restore manoeuvre and decision to the battlefield.

A new combination of contemporary technological, social and geographic factors has created a renewed tendency for indecisiveness and stalemate in war. Contemporary warfare takes place among bigger and denser populations, which draws forces into cities and constrains manoeuvre. Modern populaces also tend to resist occupation, causing large numbers of forces to be tied up in occupation duties. The very high cost of technically advanced armed forces causes contemporary armies, navies and air forces to be relatively small compared to their 20th-century antecedents. Armed forces tend to exercise greater restraint in the use of force, particularly Western forces, resulting in more careful application of force and slower fighting tempo. Most significantly, the modern mix of ubiquitous sensors such as drones, satellites and radar, combined with responsive and accurate long-range strike systems, has made concentration of force and movement on the battlefield (including at sea) especially difficult and deadly.[4]

This combination of emerging technologies and other factors affords a pronounced advantage to the tactical defence. The current war in Ukraine and the series of bloody battles for Iraqi cities that characterised the operations against ISIS are perhaps indicative. In the case of Ukraine, the front in the east has stabilised in much the same way it had in France and Belgium in World War I, although Russia has started to advance again in Donbas on a significant scale.[5] In the Iraq–ISIS case, despite Western air superiority, the battles for places such as Mosul and Ramadi were decided by thousands of Iraqi infantry routing out hundreds of ISIS defenders one city block after another. While those cases are examples of continental land warfare, the similarity of the features of the Battle for Marawi City in the Philippines suggests that regional littoral and archipelagic warfare, particularly if it takes place in littoral urban terrain, is likely to have similar features.

Ubiquitous modern battlefield sensors combined with digital command and control and precision strike systems are changing the way land forces concentrate to achieve mass in the attack. Whereas the stabilised front in France and Belgium in World War I was a result of an inability to penetrate fortifications before the enemy could move reserves to cover the penetration, the stabilised front in Ukraine is a function of an inability to mass enough forces to penetrate decisively in the first place.

Rather than becoming a push-button affair, the implication of the many factors affecting contemporary land warfare seems to be wars of fortifications, trenches, concrete bunkers, underground tunnels and fortified city blocks. The images coming out of contemporary battlefields such as Ukraine and Gaza look little different from Stalingrad in 1943 or the Western Front in 1916. Contemporary land warfare is still very much characterised by close-quarters fighting, massed artillery, minefields and the intimate cooperation of armour and infantry.

This logic can be extended to the juncture between land and sea (perhaps even land and air). The only difference is that the advantage to the defender on the land is even greater if the attacker is coming from the sea. In fact, the combination of ubiquitous sensors and long-range land-based anti-ship systems allows land forces to exercise sea denial, perhaps even sea control in particular geographical circumstances. Ukraine's destruction of a third of Russia's Black Sea Fleet and the physical dislocation of the remainder is a prescient example. Even the Houthis' modest land-based capacity to disrupt commercial shipping in the Red Sea is illustrative of this much stronger connection between contemporary warfare on land and at sea. In essence, if concentrated forces on land are easily discovered and easily destroyed at great ranges, so too are forces at sea.

The increase to the tactical advantage for the defender affects the contemporary utility of war as well as potential choices about how forces might defend themselves and deter a potential adversary. A tactical advantage might act as a strong deterrent against military aggression. Yet, nothing is certain in matters of war and politics. For example, many pundits made assertions as late as 1913 that a war in Europe was impossible. They argued that the destruction and cost of a war would make any success in a modern European war Pyrrhic.[6] And, while the predictions about the scale of destruction and cost proved to be true, World War I and World War II happened regardless. Moreover, the advantage to the defender in contemporary warfare did not deter the Hanoi Politburo from launching the Tet Offensive in 1968 nor Vladimir Putin from launching Russia's invasion of Ukraine in February 2022. As Geoffrey Blainey's study, *The causes of war*, makes plain, there's no accounting for the potential of overconfidence when it comes to starting a war.[7]

Though technically difficult and highly fraught, an aggressor can seize a victim's territory by surprise then occupy it with little resistance (known as a *fait accompli*). Such operations can be very appealing to an aggressor if the territory is sufficiently meaningful and valuable to the victim. Launching a *fait accompli* and acquiring the advantage of the tactical defence improves the aggressor's negotiating position should either side wish to end hostilities.

Most wars tend to end as a function of negotiation once one side acknowledges the impossibility of victory, as opposed to the imminence of defeat.[8] Battlefield results are part of the equation because they determine the relative bargaining power of the two sides. The close relationship between the armistice negotiations at Panmunjom and battlefield actions during the long static phase of the Korean War is illustrative of this relationship.

The principal effect of the combination of these things is the overall elevation of the strategic and operational value of *fait accompli* attacks (whether successful or not). Russia's 2014 occupation of Crimea and the Donetsk region is an example of a successful *fait accompli* attack. Argentina's strategically misguided occupation of the Falkland Islands in 1982, as well as Japan's seizure of America's Attu and Kiska islands in the Aleutian chain in 1942, are pertinent examples. The more recent non-violent reclamation and militarisation of features in the South China Sea by some claimants are perhaps more strategically and tactically relevant examples, particularly as the deployed forces retain a wide range of response options. It's a clear expression of the importance of land for control of the sea.

Peter Singer's popular fiction book, *Ghost fleet,* foreshadows other imaginative forms of infiltration as a means of *fait accompli* in the future. In the book, China infiltrates troops onto Hawaii via an innocent-looking commercial container ship.[9] Though far-fetched, such a scenario is not wholly outside the realm of possibility. Defence analyst TX Hammes has written extensively on the potential for *fait accompli* in the Pacific, and about the potential of commercial ships as a means for achieving it.

From an Australian perspective, a surprise seizure of strategically important territory followed by a rapid build-up of forces would be concerning. The example of the exploitation of the Tonghak rebellion in Korea in 1894

as a pretext to send 8,000 troops in breach of an agreement is perhaps illustrative. It's a historical example of how an aggressor once used unrest and an accompanying invitation for a stabilising force as a pretext to send troops for other purposes.

A *fait accompli* is an expression of one of pre-eminent war theorist Carl von Clausewitz's original ideas. For Clausewitz, the ideal circumstance in war is to be on the strategic offence at the same time as the tactical defence because the defence is normally the stronger tactical position.[10] Threatening a *fait accompli* challenges the potential victim to try either to defend everywhere or to leave vulnerable territory exposed to surprise seizure and then attack to liberate the captured territory. Unless the defender can afford to keep its forces at the ready in fighting positions indefinitely, a *fait accompli* can cause the aggressor to become the tactical defender and the victim to become the attacker. Advancing to regain ground can be disproportionately costly, as can be seen in eastern Ukraine.

The November 2023 admission by the Ukrainian Commander-in-Chief General Zaluzhnyi that Russian and Ukrainian forces are at stalemate in Ukraine's east is indicative of the advantages inherent in a *fait accompli*. The strength of the defence means that a land force once established on a foreign territory is hard to dislodge. Zaluzhnyi observed that, with relatively evenly matched forces, only a special technological breakthrough would enable Ukraine to reclaim its lost territories. Pending such a breakthrough, occupation of another's territory gives the occupier tremendous potential power over its victim.

The above notwithstanding, *fait accompli* seizures of non-contiguous places are fraught. The principal challenge for expeditionary operations overseas is to sustain the remote force across sea lines of communications that can be threatened by a technologically advanced and capable adversary. Without sufficient protection or control of the sea and air, remote forces are susceptible to being isolated and starved of resources. The disintegration of Napoleon's Army in North Africa and the Levant after Lord Nelson's success in the Battle of the Nile in 1798 is perhaps the quintessential example of the consequences for an expeditionary force cut off from reinforcements and supplies. The Japanese defeat at the Battle of the Philippine Sea had a similar effect on the defenders on Saipan in 1944.

To some extent, the Japanese defence of New Guinea in World War II is illustrative, too. The challenge of getting supplies across increasingly vulnerable lines of communication meant that Japanese troops would often go short of food, ammunition and basic medical supplies. Starvation and disease killed many. Of the estimated 180,000 Japanese troops sent to New Guinea, around 123,000 would die, mostly from non-battle-related causes such as starvation.[11] Seizures of overseas territory are risky ventures.

Despite the risks, overseas *fait accompli* seizures have merit. While it's true that a remote force overseas is vulnerable to being isolated and starved of supplies, those effects are subject to a range of factors, including the relative strengths of the opposing navies and the relative successes of the two opposing forces in either securing lines of communication or attacking them.[12] If the forces are relatively equally matched, or if the aggressor has an advantage in naval forces or long-range land-based strike, then isolation or blockade of a remote force can prove difficult. Even when successful, the effects of isolation are often slow to take effect,[13] and other political imperatives often pressure governments to act to address the problem more decisively than a far blockade allows.[14] To that end, successful naval blockades tend to be those that support events ashore rather than those that stand alone.[15]

Expeditionary forces can be made more vulnerable to the effects of isolation if they are threatened or attacked by an opposing land force. Having to engage in the close fight compels the expeditionary force to make the best use of its finite stocks of ammunition and available personnel. For example, notwithstanding American naval and air superiority and the vulnerability of Japan's many outposts in the Pacific War (most of which lacked mutual support and were easily isolated), it took three and a half years, scores of costly amphibious assaults, and many more equally costly land battles for the Allied juggernaut to wind back Japan's conquests.

Even in Ukraine, the advantage of long-range strikes against a defender's resupply convoys is best achieved if the defending force expends ammunition in repeated skirmishes with the attacker, thereby compelling more frequent resupply. The skirmish is the essential thing. Given

those factors, in the event of a successful *fait accompli* seizure of some overseas territory, it's likely to be very difficult for a victim to succeed in expelling the occupier without sufficient and capable ground forces.

Potential victims of *fait accompli* seizures are somewhat at the mercy of aggressors if they can't recover their territory. They must at least demonstrate to the potential aggressor that they have the capability to do so.

These features of warfare are unsurprisingly consistent with maritime theorist Sir Julian Corbett's theory of how naval warfare and land warfare interact. Recognising the essential relationship between sea and land, Corbett wrote:

> By maritime strategy we mean the principles which govern a war in which the sea is a substantial factor. Naval strategy is but that part of it which determines the movements of the fleet when maritime strategy has determined what part the fleet must play in relation to the action of the land forces; for it scarcely needs saying that it is almost impossible that a war can be decided by naval action alone … Since men live upon the land and not upon the sea, great issues between nations at war have always been decided—except in the rarest cases—either by what your army can do against your enemy's territory and national life, or else by the fear of what the fleet makes it possible for your army to do. The paramount concern, then, of maritime strategy, is to determine the mutual relations of your army and navy in a plan of war.[16]

The implication of all these factors is that territory still matters decisively in war, even in a region characterised by vast seas and oceans. If there are opportunities for an aggressor to achieve limited war aims by *fait accompli*, and if the connection between forces on the land and at sea is as great as it now seems, then capable land forces have an essential role to play in Australia's national defence in conjunction with the forces of the other domains.

The role of land forces in Australia's all-domain force

If governments are to retain the capability to retake territory seized by *fait accompli*, modern armed forces need to work out how to concentrate to achieve mass. For Australia, that challenge revolves around how best to move troops and materiel across a sea swept by missiles, drones, submarines and mines. No good solution currently exists, which has led to some debate over the utility and survivability of Australia's amphibious vessels and the role of Australian ground troops beyond Australia's shores.[17]

There are already some potential solutions to the problem of manoeuvring land forces across the sea. Defence analyst Dr Albert Palazzo suggests the same ideas that overcame the stabilised front and deep defensive networks of the Western Front could be reconceptualised in ways that will restore the equilibrium between the defence and the offence.[18] By using a range of new and old technologies in novel ways (particularly new space, cyber and air capabilities) it might be possible to suppress some of the enemy's ability to attack the friendly force as it crosses the vast maritime no-man's-lands of today. Yet, that approach alone is likely to get the attacker only so far because neutralising an enemy's defensive system entirely might be impossible in many cases.

The Ukraine War has shown how the future anticipated by Palazzo is likely. Warfare continues to revolve around the question of mass and feature close-quarter battles for fortified positions coupled with deep attacks on vulnerable rear area forces and critical infrastructure, particularly large logistical nodes. Not just in Ukraine, but in the many wars fought since the end of the Cold War, weaker and less advanced adversaries have sought the cover of built-up urban areas, underground redoubts and other systems of fortification to protect themselves from ubiquitous Western and Russian sensors, and the artillery, bombs and missiles associated with them.[19] In the Indo-Pacific, thick forests offer additional scope for protection and hiding.

The results have been devastating when forces have failed to take precautions. In eastern Ukraine and Nagorno-Karabakh, for example, troops caught in the open have suffered greatly. The lesson to be learned is not that advanced strike complexes of modern armed forces have

made land warfare less likely or less useful. Rather, it is that advanced strike complexes have simply forced warfare into more tight and complex spaces.

Take, for example, the operations of ISIS from 2014 to 2017. By the latter part of ISIS's three-year-long war in Iraq, its forces had learned to move across open ground in small groups that were barely detectable and represented a small reward for the expenditure of expensive advanced munitions. That method contrasted with the large convoys in which its troops openly raced across Iraq and Syria in the early stages of their advance. As ISIS's operations matured in the face of Western air superiority, its troops tended to form into larger groups only when in the relative safety of close urban terrain, where they were better able to avoid detection and where they were more willing to accept combat. The close terrain afforded a more neutral setting.[20] Similarly, over recent decades, Hezbollah and Palestinian forces have responded to Israel's dominance in the air, and its advantage in advanced strike complexes, by hiding underground or in fortified urban positions.[21]

If the examples from the wars of the past 30 years are anything to go by, advanced strike complexes might have merely caused land warfare, if not all warfare broadly, to become a series of battles for fortified positions. They resemble the island-hopping campaign in the Western Pacific of World War II. Close terrain (cities and other fortifications) is perhaps akin to the islands from which the Japanese established their fortresses. Open terrain (whether at sea or on land) is like the oceans between, except that now the oceans or open spaces are far more dangerous places to be. They are now where troops are perhaps most vulnerable.

The earlier Western Front analogy is also useful when extended to consider employing precision long-range weapons generally, and particularly factoring in the emerging importance of land-based long-range strike capabilities in littoral areas. Just as the US Army, the US Marine Corps (USMC) and the Australian Army seized islands and coastal airstrips to advance their air forces in the Pacific War, so too land forces might be necessary to assist in the projection and defence of long-range strike capabilities in the future. In other words, land forces in some circumstances will be likely to occupy and defend locations from which long-range strike is made possible (even if out of contact and in concert with the home country). This idea is the essence of all-domain warfare.

Take the World War II Battle of Milne Bay, for example. Both General Douglas MacArthur, Supreme Commander, Southwest Pacific Area, and the Japanese military recognised almost at the same time that the eastern tip of New Guinea was critical for exercising control of the Solomon Sea. Fortunately, MacArthur got Australian troops there first, occupying Milne Bay and commencing construction of three airfields. That move led to a defensive battle against a Japanese amphibious force hoping to seize the airfields for its own use. What resulted was a land battle to protect airfields, and the airfields were only important to the extent that they allowed for airpower to control a large part of the Solomon Sea—a battle on land for control of the sea from the air.[22] The whole of the Pacific War largely comprised battles of this kind. Sea power was essential, but only to the extent that it enabled one side or the other to extend the range of bombers and fighters to push closer to mainland population centres.

This relationship is important because the range of emerging land-based strike systems will make the sea a very dangerous place for warships to be. It could be argued that the sea within certain distances of land has become the new no-man's-land of modern warfare. So, to control the sea, control of the land seems to have increased in importance because of the emergence and proliferation of more advanced and capable land-based long-range anti-ship missiles and surface and air drones.

One underexplored and perhaps less palatable option to overcoming enemy anti-access and area-denial capabilities is to use large numbers of inexpensive, fast and somewhat protected small land vehicles and watercraft to overwhelm the defensive system. Mixed with autonomous decoys, and making the most of technologies to spoof sensors and remain undetected, this idea of many, cheap and small might be an answer to cover the vast no-man's-lands of the modern battlespace. Indeed, the USMC is already testing low-profile vessels to resupply distant outposts in contested spaces.[23] While seemingly inefficient, the combination of large numbers of small and relatively inexpensive craft could absorb enough of the enemy's fire to enable a decisive number of troops and materiel to get into the fray to carry the day.

To keep costs down and to ensure the defence industrial base can produce large enough quantities to rapidly reconstitute combat losses, the vessels would need to possess minimal (counter) capabilities. A premium could be placed on the ability to carry or instantly access command and control, computing, communications, cyber, intelligence, surveillance, reconnaissance and targeting capabilities. The intention would be to degrade an adversary's ability to sense and target the small watercraft or personnel carriers to enable a landing.

The key feature of this solution is the asymmetry presented by the cost of precision long-range missiles and the value of the small craft and its cargo. At best, the enemy might consider a small watercraft carrying a dozen troops or a couple of vehicles to be unworthy of a scarce multi-million-dollar missile. While swarms of drones diminish the asymmetry between the costs to the defender and to the attacker, drones are easier to defeat than state-of-the-art ballistic and cruise missiles.[24] Indeed, a combination of the small, fast and many watercraft coupled with larger 'exquisite' vessels sitting safely outside an enemy's weapon engagement zone serving as motherships and protectors might be an optimal combination.

Historically, control of a strait is best achieved by control of the shores on one or both sides. The Dardanelles campaign of 1915 is a case in point, as it was impossible to control the strait without first securing the land on at least one side. Given the prodigious range and accuracy of modern systems, land-based systems now can make whole seas dangerous places for ships to be. To extend this analogy further: just as riflemen served primarily to protect machine guns—which were the primary killing systems that dominated no-man's-land on the Western Front—land forces might now serve to protect and enable long-range precision strike from the land, including protecting airfields from which to launch aircraft. That protection will almost certainly include the provision of air and missile defence.[25]

If land forces can affect the actions of naval forces to a greater extent than naval forces can affect fortified and distributed land forces, then there's cause to reflect on conventional assumptions about the primacy of naval forces in the Indo-Pacific. As Lord Nelson supposedly once said, 'A ship's a fool to fight a fort.' With land forces possessing the potential to become the primary killing systems in littoral settings, control of land might now be a markedly more important factor for control of the sea. The consequences of that potentiality might prove to be quite profound for maritime warfare. According to Richard Dunley, there are already signs that the vast build-up of land-based anti-access and sea-denial capabilities in the region is changing the relative balance of power between land and sea.[26]

The shift in the relative roles and utility of naval and ground forces does not in any way suggest that navies are somehow less important or redundant. On the contrary, the great advantage of navies is that they offer a degree of freedom to project force into places that land forces might not be able to go or would require host-country permission to access or use. Navies are also important for many other reasons, not least of which is securing national lines of communication. They are acutely important to the logistics dimension of land power because ground forces on islands are dependent on the sea and air for resupply. The observations herein simply compel closer cooperation and integration between land and naval forces. It places a premium on being able to fight well in and across both domains.

The last point notwithstanding, most of the high-tech missile, cyber and space exchanges that might take place in some future war in the Indo-Pacific will probably have only an indirect effect on the experiences of ground troops. That limited effect is a function of an asymmetry captured in the expression, 'a one hundred-million-dollar missile against a machine-gun nest'. A relatively small number of missiles linked with advanced sensors can destroy billion-dollar warships and multi-million-dollar aircraft, but against a dispersed and fortified infantry formation in the field, or a widely dispersed logistics area, the effect of those same advanced systems is much less. As the Ukraine War is showing, much cheaper and massed-produced artillery, drones and loitering munitions make more sense for attacking and suppressing ground troops.

This sort of asymmetry between warfare in different domains is not a new phenomenon. Historian Eric Bergerud observed a similar phenomenon in the Pacific War in the 1940s. Describing warfare in New Guinea, Bergerud observed:

> On the one hand, the struggle was on the cutting edge of advanced combat technique. Infantrymen sent to fight under the Southern Cross entered a world where aircraft, the newest of the world's weapons, dominated the struggle at a strategic level. Their fate was likewise intimately linked to increasingly sophisticated sea battles that led to the birth of modern naval warfare. [Yet,] in stark contrast, land combat in the South Pacific was harsh, crude, and, from a military viewpoint, technically primitive.[27]

While the infantry's fate in the Pacific theatre might have been intimately linked to increasingly sophisticated battles in the air and on the sea, most of the infantry had no direct experience of those air and sea events. In the European theatre, the interconnections between the Battle of the Atlantic, the strategic air campaign and the land battles to liberate the continent were much the same. Despite the profound interconnection of their consequences, strategic bombing and naval and land warfare still largely took place separately and involved very different experiences.

So, while advances in land-based strike systems introduce a new and decisive interconnection between the land and sea in warfare, land warfare itself is unlikely to be markedly affected by this new circumstance because only a small part of a land force is likely to be involved in maintaining and launching land-based missiles (that goes for cyberspace and space, too). Despite advances in those fields of warfare, land warfare will tend to be the same sort of harsh and crude affair described by Bergerud and observed on the battlefields of northern Iraq, eastern Ukraine, Gaza and Marawi City in recent years.

As current Australian strategic guidance makes clear, strike capability is viewed as an essential and dominant feature of future warfare and a core part of a diverse joint or all-domain mix. That mix includes carefully designed and prepared conventional ground forces that are capable of long-range strike and defence from enemy missiles and drones. But it also includes capabilities and forces designed and postured for conventional attack and conventional defence from and through fortified positions on land at close quarters, as provided for in Australia's National Defence Strategy with the capability for an amphibious-capable combined-arms land system.

Quick victories, long wars and land forces

Quick victory in war has been a common aim for war planners for many centuries. There are many reasons why ending a war quickly is advantageous, the most apparent being the potential for the economic and social costs of a long war to far outweigh the benefits of achieving the policy aim. But a nation's preference for a short war often has little bearing on whether it gets one or not.

According to historian Geoffrey Blainey's analysis in *The causes of war*, the length of a war is usually determined by whether it is generalised (involving many countries) or localised (involving just two warring parties). Generalised wars tend to be longer because the participation of several nations evens out the relative strengths and war-making capacities of the two sides. Generalised wars also tend to have multiple fronts, including the sea and land, causing neither side to dominate in all. Multiple parties on the same side in a war tend to disagree on the terms for negotiation or terms for peace, thereby extending wars too. In localised wars, there's a tendency for one side to sue for peace quickly for fear of another party intervening and removing any advantage held.[28]

If Blainey were right, Australia's best hope of winning a short war would be to fight a localised war against a weaker enemy. Given Australia's circumstances, however, it's hard to imagine a future localised war of that kind. It's far more likely that a war in the Indo-Pacific engaging Australia's interests would involve a major power and draw in the materiel and non-combat support of other nations, risking a generalised war and a longer war.

Despite the overwhelming historical tendency for long wars, hope for short wars persists because it is easy to conflate war and battle. Mistaking war for battle is an error attributed particularly to Americans by Professor Antulio Echevarria.[29] Those in error regard war as an *alternative* to bargaining rather than part of an ongoing process between belligerent nations. As Professor Echevarria reminds us,

waging war is just part of the ongoing 'bargaining' or politics between states.[30]

Battle and war are very different things and follow different logics. War is an extension of politics with violence as its principal means. It's a function of myriad things, including, *inter alia*, the attitudes and passions of the populaces of the warring parties, the policies and objectives of the governments, the relative capacities of the economies, the capabilities of the armed forces and the influences, capabilities and reliability of allies and third parties. Battle is merely a subset of war—the means of war. It is just the fighting. A force designed to win only the first battle is neither likely to be sufficient to win a war nor contribute meaningfully to a war-winning coalition. It's also unlikely to deter a potential aggressor because an aggressor would be encouraged by the possibility of an early defeat of the victim.

Regardless of who wins or loses an imagined future first battle, the battle itself is unlikely to resolve the matter at hand and deliver either side's policy aims. Rarely does an aggressor abandon the pursuit of its aims or a victim capitulate after suffering substantial losses in a first engagement. As the war in Ukraine has reaffirmed, civil populations and national infrastructure tend to be quite resilient to strikes, cyberattacks and other forms of sabotage. More importantly, attacked populations tend to rally and fight back.

Take the Finnish defence against the Soviet Union in the winter of 1939–40, for example. While lauded in some quarters as an example of a middle power standing up to a great power, the great power still won.[31] The Soviet Union did not simply desist after the Finns halted the Red Army advance on all fronts. Months later, when the Red Army broke through the Finnish southern defences, the Finnish Government sued for peace on Soviet terms. Finland acquiesced to the Soviet Union's pre-war demands and more, which included among other things handing over possession of important coastlands and several islands and a 30-year lease for a Soviet military base at the Finnish port of Hanko.[32]

Historian Robert Citino cautions, 'in war, bigger battalions often find a way to reassert themselves—no matter how serious their early defeats or how righteous the cause of the underdog.'[33] Without the material support of the West and some others, and notwithstanding some other kind of foreign intervention on Ukraine's behalf, Russia would have almost certainly prevailed by now. And, while Russia has suffered enormously both on the battlefield and on the home front since the beginning of the war, its war effort endures. Being able to endure the inevitable attrition and deprivation inherent in a war is essential both in practice and for deterrence.

The historical record of victorious first battles resulting in war victory are rare, but they are possible. Israel's six-day victory over the Arab armies in June 1967 is an example of tactical battlefield success resulting in a quick end to a war. Israel's battlefield successes against its neighbours were so overwhelming that the Arabs had little choice but to accept the United Nations Security Council's call for a ceasefire.[34] The American-led coalition's victory over Saddam Hussein's army and air forces in Kuwait in 1991 is another example of victory coming from the first battle. Nazi Germany's rapid victory over France in 1940 is also illustrative. So, too, perhaps is Azerbaijan's 2020 victory over Armenia to set new terms for the minority enclave of Nagorno-Karabakh. All those wars ended quickly after decisive battlefield success, but they share features that suggest they're exceptions that prove the rule. Wars are rarely decided by the result of the first battle.

Because wars are by default indecisive, whether they're long or short, it could be argued that some 'wars' are in fact battles within decades-long wars with pauses between. This idea mirrors Thucydides' treatment of the many separate wars of the 5th century BC as one generalised war in his history of the Peloponnesian Wars.[35] It also aligns with the notion that the Hundred Years' War can be considered a series of related wars between France and England over a 116-year period. From this perspective, even wars seemingly won in the first battle have much in common with long wars.

Depending on the context, an adversary might be capable of losing the first battle, absorbing the losses and costs, reconstituting its forces and fighting again. That's what the Red Army did in Finland in 1940, what the US did following the attack on Pearl Harbour in 1941, what the UK did after the Argentinian occupation of the Falkland Islands in 1982, what Israel's neighbours did in 1973 after their decisive loss in 1967, and what Spain attempted to do several times after the sinking of its Armada in 1588. If an invasion or raiding fleet decisively loses the first battle, rather than

desist, the aggressor might learn from the loss and make another attempt using a larger force or make another attempt using a different and more effective method.

On the other hand, if the aggressor succeeds in the first battle, it might seek to exploit the opportunity of an initial success with a more ambitious aim. That's what Nazi Germany did following its early successes in World War II, what France did following its initial successes against Austria and Prussia in the Revolutionary Wars, and what Japan did following its successes in late 1941 and early 1942. The aggressor might be particularly encouraged to attack again if it believes that the defender or defenders lack the capability to fight a second battle, let alone a sustained long war.

Because long pauses between battles are more common than not in the history of war, subsequent battles might take place months or even years after the first. The examples above of wars seemingly won in the first battle but proving inconclusive and resulting in subsequent battles years after are illustrative. Care should be taken not to mistake an adversary's apparent inaction after losing a battle as a sign of defeat.

Pre-industrial wars had this tendency too. Battles were particularly rare and infrequent from the middle of the 17th century to the beginning of the 19th.[36] Even though Napoleon's method was largely one of decisive victory in a single battle, when the Napoleonic Wars are taken as a whole, battles look considerably more infrequent than the modern archetype defined by the two world wars of the 20th century. Any inclination to confuse the pace and dynamism of modern battle with the pace and dynamics of a war is fraught because it creates dangerously optimistic expectations, including imagining wars culminating in a matter of days as a function of an exchange of high-tech missiles and cyberattacks. Modern battles might be intense and end quickly, but wars are likely to endure for years. Armed forces must be able to not just survive the first battle but also maintain sufficient strength to fight subsequent engagements wherever necessary and absorb support from a scalable industrial base.

Given the above, if the intention is to avoid war altogether, military strategists, force designers, concept writers and preparedness staffs need to think beyond the first potential engagement in a future war. In his 1983 study of conventional deterrence, political scientist John Mearsheimer concluded that a nation's capacity and willingness to wage a long war is a significant factor in conventional deterrence.[37] He observed that 'deterrence is greatly strengthened when a potential attacker envisions war as a series of set-piece battles.'[38]

If deterring war is a major feature of a nation's defence policy, which for Australia it is, the country must be able to sustain its armed forces through a long unpredictable war. Even with good odds of winning a potential first engagement, the military relies on multiple other areas of society and the defence industrial base to execute its responsibilities in a prolonged fight. It follows that a lack of means to wage a long war against a prepared potential adversary will inevitably override the strongest of wills to compete.

While some observers put stock in new advanced technologies as a predictor of shorter wars in the future, the evidence supporting that faith is doubtful, too. For example, in the century between Waterloo and World War I, many wars were short.[39] After Prussia's lightning victories of 1864, 1866 and 1870, observers saw in new industrial technologies such as the breach-loading rifle and the steam train the mechanisms for rapid victory and short wars. But the same observers neglected the indecisive Siege of Paris of 1870, and the lessons of several long wars in the Americas, including the four-year-long American Civil War.[40] Observers also explained away the length of the Boer War with trite rationales about the inexperience and ineptitude of the British Army and the isolated and unusual terrain of South Africa.[41]

Rather than quick victory, modern mechanisation led to wars of fortifications and stalemate. Not even the nuclear bomb, the ultimate in war technology, seems to have had any effect on reducing the length of wars. Taken together, these examples suggest that technology is a weak factor in determining the relative duration of wars.

The embrace of technology as the solution to long and indecisive wars was echoed in the airpower dogma that preceded World War II and in the post–Gulf War embrace of effects-based and network-centric warfare—both of which preceded the long wars in Iraq and Afghanistan.[42]

The father of airpower theory, Giulio Douhet, and other airpower proponents argued to varying extents that improved strike capabilities will bring an end to land

warfare.[43] Under the airpower logic, the ability of aircraft and missiles to fly over ground forces to strike sensitive national nodes behind them makes ground forces redundant. Yet, each time there's a new war, those predictions have proved to be false. Consequently, the theorists have tended to contend that it's only a matter of time before improvements in technologies would allow for the necessary breakthrough for long-range precision strike capabilities to meet the expectations of the theory.[44]

The recent wars in Iraq and Syria against ISIS, which involved dropping large numbers of bombs and destroying large swathes of cities such as Mosul and Ramadi, suggest that either the technological breakthrough is still well out of reach or the premise of the theory is wrong. While American and other Western air support was very important for the Iraqi attackers, air support alone would have been indecisive. Despite unfettered air superiority, it still took thousands of Iraqi infantry and years of fighting to stop the ISIS advance and slowly drive ISIS out of Iraq.

The Ukraine War and the recent Gaza War offer similar evidence. Even with Russia's recent growing aerial dominance over Ukraine—which has contributed to its recent gains—the effect on the character of the combat by land forces has been negligible. Thousands of Russians are dying for each incremental gain. The unrealised promise of technologically based theories means that quick victories on contemporary battlefields require more multifaceted solutions and longer term planning but, most particularly, the combination of forces from all domains.

By focusing only on winning the first battle, or the first series of engagements, strategists, force designers, concept writers and preparedness staffs are freed to focus on tactics, technology and materiel at the expense of other important features of defence policy. The significance of things like alliances and coalitions, wartime materiel production and acquisition, national mobilisation potential, defence industrial capacity, theatre logistics, war stocks and, critically for the land force, available personnel, the role of reserves and the potential to have to rapidly expand the force, is lessened by the 'first battle' fallacy. This is because there's little impetus to think about what happens after the initial engagement ends. These things are best accounted for well before the war begins rather than during a crisis, particularly if the purpose of the force is to deter a potential aggressor.

These kinds of macro war factors have important battlefield consequences. For example, in anticipation of a protracted war, the steep costs and slow production rates of modern aircraft and ships are likely to be important factors affecting how a joint force uses them. Lockheed Martin expects to produce around 156 F-35 fighters per year until completion[45] at a rough cost of about $80 million per aircraft.[46] American shipyards are currently producing destroyers at a rate of about one and a half ships per year.[47] While those figures allow for only a rudimentary estimation of wartime production capacity, even with a doubling of the production rate, a modest rate of daily losses of aircraft and warships in combat would soon result in a marked depletion of an air force or a surface fleet—even ones as big as those belonging to the US.

That risk of steady long-term depletion of expensive and 'exquisite' platforms, coupled with the potential for rapid depletion of stocks of scarce and costly missiles, might cause joint force commanders to use them sparingly and cautiously. That tendency would diminish their relative utility in the war and the decisiveness of any first battle at sea and in the air. This potential for sparing and cautious usage was reflected in the Ukraine War until quite recently. Markedly less expensive but quite effective land-based air-defence systems were denying airspace to modern air forces quite decisively.[48] Similarly, relatively cheap Ukrainian drones (particularly expedient remote-control boats) and land-based anti-ship missiles have had a marked effect on the utility of the Russian Black Sea Fleet.[49]

It's straightforward to imagine the first engagements of an imagined war in the Indo-Pacific occurring in cyberspace and at sea, but it's a mistake to associate those engagements with the war itself. As history suggests, the outcome of a war is likely to be determined by more than just the battlefield effects of any initial cyber and missile exchange. Enhanced focus should be on other elements of defence policy that otherwise might not factor strongly in considerations for victory in the first battle as well as the broader contribution that land forces make to deterrence in times of great tension.

Land forces and deterrence

The overwhelming association of nuclear weapons with the word 'deterrence' often leads to an intuitive association between deterrence and strike; of deterrence as a function of the threat of reprisal, punishment, cost and consequence. Deterrence by denial is different. The fundamental mechanism for deterrence by denial is the aggressor's fear of failing to achieve its intention and the related matter of fearing that achieving its intention will come at too great a cost. Given those tendencies, land forces designed to deny a potential aggressor confidence in attaining its objectives tend to feature less often than the forces of other domains in considerations about deterrence.

This tendency is particularly true in Australia, where the absence of contiguous borders has perhaps reinforced the tendency to overlook the reassurance and deterrence value of land forces in non-contiguous circumstances. That said, NATO's posturing of forces in Eastern Europe following Russia's invasion of Ukraine as a deterrent against any widening of the war might be indicative of a potential role for land forces in the Indo-Pacific.

Several internal factors go into shaping a potential invader's decision to launch military action in pursuit of a policy aim. First and foremost, the aggressor must consider what sized force would be needed to overcome the defending army and still have sufficient force to secure military objectives. The aggressor would then need to consider how to sustain the invading and occupying force. Lastly, a decision would need to be reached about how to get the invasion force to the foreign shore—a challenge made exponentially greater by each increase in the size and capability of the defending land force. An attacker typically requires a numerical advantage of at least 3:1 for a successful attack against a prepared foe on land.

Force ratios often increase dramatically for an amphibious assault. Analysis of 15 amphibious operations conducted in the Southwest and Central Pacific theatres during World War II reveals force ratios ranged from 0.6:1 to 8.3:1, with some notable exceptions.[50] On average, the attacking force enjoyed a numerical advantage of 6.2:1, as shown in Table 1 (note that these figures do not include large numbers of necessary follow-on and logistical forces).

Table 1: Force ratios for amphibious operations from 1941 to 1945

Operation	Initial assault force	Initial defence force	Force-on-force ratio	Defensive doctrine
Malaya	17,000	2,500	6.8	Forward
Philippines	57,000	28,000	2.0	Forward
Wake	800	500	1.6	Forward
Timor	5,600	2,100	2.7	Forward
Guadalcanal	17,000	3,600	4.7	Mobile
Tarawa	18,000	4,800	3.8	Forward
Hollandia	53,000	18,000	2.9	Forward
Saipan	20,000	32,000	0.6	Mobile
Guam	20,000	21,000	1.0	Forward
Tinian	17,400	9,000	1.9	Forward
Peleliu	9,000	10,500	0.9	In-depth
Leyte	132,400	16,000	8.3	In-depth
Luzon	68,000	-	10.0	In-depth
Iwo Jima	30,000	21,000	1.4	In-depth
Okinawa	116,000	2,600	44.6	In-depth

Note: The force ratio for Luzon is an estimate based on the fact that minimal opposition was met at the beachhead.

Source: Author's own calculations based on Carter A Malkasian, *Charting the pathway to OMFTS: a historical assessment of amphibious operations from 1941 to the present*, Center for Naval Analyses, July 2002, online.

If an adversary is not deterred by the sheer scale of the challenge based on the first two considerations, its assaulting force would be likely to need to expand by three to as much as eight equivalent increments to overcome the defending ground force. In this sense, a defending land force that's been designed to enact a deterrence-by-denial strategy is quite literally a 'force multiplier'.

This logic holds whether applied to circumstances involving continental defence or in the unlikely case of a potential friendly nation in need of help to defend an island, port or airfield against a powerful adversary bent on seizing them. It's one reason why Japan was able to keep the US on defence well into 1942 during World War II. The same is not true, however, if the defender merely adds extra strike systems, warships and munitions into its defence. The increased effect in that case is at best linear.

Conventional ground forces are a useful deterrent in other subtly related ways, too. Accepting that its immediate forces were incapable of denying territory to the Soviet Union in Europe, the US employed ground forces as:

> a classic trip-wire, forcing Moscow to kill Americans in an attack; by placing US national prestige on the line; and by requiring a larger Soviet attack, making a short-notice *fait accompli* less possible.[51]

Indeed, deterrence is not about bluff; deterrence by denial and the literal act of defence are largely the same.[52] Israel's unpreparedness to repel the 7 October 2023 surprise attack by Hamas is illustrative. Hamas was undeterred because there were limited Israeli forces postured to repel an attack of that kind. As strategist Hugh White points out, the 'deterrer' must be able to fight and win battles; but even that isn't the whole picture.[53]

Whether a combination of capabilities and posture is sufficient to deter an aggressor from going through with its intentions is also a function of context. Clarity about whether one is deterring an enemy from a particular object directly without any assistance from another party, or whether one is playing a role in a combined effort of extended deterrence, matters decisively.[54]

A simple assessment of relative capabilities absent potential contextual factors is grossly insufficient to determine whether an aggressor is likely to be deterred from pursuing its aim because the context determines the importance of the matter at hand. Political scientist Michael Mazarr observes:

> While potent capabilities for denying aggressors' objectives typically form the foundation of any wider deterrence strategy, the variable of the local balance of forces does not, on its own, consistently explain the success or failure of deterrence. In many cases, potential aggressors never challenged local weakness: The Soviet Union could have seized Norway during the Cold War at just about any time, but chose not to because of the larger ramifications. Sometimes states with dominant power refused to fully deploy it, as with the United States in Vietnam. Viewed strictly in percentage terms, the number of states with a military advantage that do *not* start wars is overwhelming. In other cases, aggressors ignored clear evidence that the defender was superior and attacked anyway.[55]

As scholar Richard Lebow points out, 'Wars rarely start because one side believes that it has a military advantage. They occur when leaders become convinced that force is necessary to achieve important goals.'[56] Context matters.[57]

Convincing a potential aggressor not to act using force requires the deterring state to not only have the capacity to harness military power but a demonstrable willingness to defend its defined interests.[58] Peacetime expressions of resolve and messaging about the consequences of aggression must be unambiguous for the deterring state to have credibility.[59] The posturing of land forces can help in this regard, along with the capabilities available to forces in the other domains of warfare.

The light force myth

To the extent that land warfare might take place in the Indo-Pacific, and to the extent that land forces might play a role in deterrence and assurance, it's worth highlighting the relative merits of heavy forces for operations. I do so fully cognisant that this topic is a lightning rod for heated debate, and I am at risk of diluting my earlier thesis by entertaining this discussion.

While the prevailing orthodoxy privileges light forces, there's ample evidence to suggest that heavy forces are relevant across the entire so-called competition–conflict spectrum and will remain a feature of land warfare in Australia's immediate region. For example, a recent RAND Corporation study titled *Understanding the deterrent impact of US overseas forces* found consistent evidence for the deterrent effects of 'heavy ground forces and air defense capabilities, especially when deployed in the general theater of interest but not necessarily on the front lines of a potential conflict'.[60] The study also found that the more mobile forces are, the less evidence there is that they deter, 'possibly because mobile forces represent a lesser degree of high-level or long-term commitment'.[61]

In addition, many armies of Southeast Asian nations are quite heavy, demonstrating their recognition of the value of heavy land forces for defence and deterrence in the region.[62] With the exception of regional armies designed principally to deal with internal insurrections, most possess large numbers of tanks, infantry fighting vehicles and armoured personnel carriers. Archipelagic Indonesia has significant armoured forces, for example. Even the United Wa State Army, a resistance group in Myanmar, possesses PTL-02 wheeled tank destroyers. Indeed, one of the heaviest armies in the region is the army of the small urbanised island of Singapore.

The US Army, the USMC and the Australian Army used tanks effectively in the Pacific theatre during World War II. Australia's success at Buna in 1942 was partly a function of the Australian infantry's close cooperation with Stuart tanks. Armoured personnel carriers were also decisive at the Battle of Long Tan in South Vietnam in 1966, and the Japanese Army's bold use of tanks in Malaya contributed markedly to its success against Commonwealth forces in 1942. Indeed, the Commonwealth forces had assumed that the terrain was unsuited to armour.[63] Japanese tanks also nearly changed the course of the Battle of Milne Bay in New Guinea later that year.[64] A platoon of American tanks was decisive in the 3rd Battalion, the Royal Australian Regiment's defence at Kapyong in Korea in 1951.[65]

A report by the Australian Defence Science and Technology Group found that, when tanks were in support of Australian infantry attacks on North Vietnamese Army and Viet Cong jungle bunker systems, the result was always a victory for the attacker. Tanks also resulted in markedly fewer Australian casualties and increased the number of enemy casualties. Tanks were more decisive in those respects than artillery and close air support.[66]

These facts shouldn't come as a surprise. Tanks were invented in World War I to overcome the mud and obstacles of the Western Front and to closely support the infantry as it tried to overcome German trench systems. Notions that tanks are too heavy for Asian terrain forget that tanks are intended for difficult ground, particularly for assisting infantry to overcome ground fortified for defence.

This particular style of armoured employment, one in which the armoured vehicle is more of a protected mobile fire-support and intimate protection platform for infantry, is characteristic also of the Ukrainian employment of armour against the Russians and vice versa.[67] Armoured vehicles are ideal for closing with hardened bunkers to either destroy them (bunker busting) or suppress them to enable the infantry to move. This method of employment stands in contrast to the more romantic and common idea of fast sweeping armoured envelopments and deep penetrations characteristic of Field Marshal Erwin Rommel's campaign in North Africa and the Wehrmacht in Poland, France and the Ukrainian steppe. That romantic ideal is the rarest form of armoured warfare. Tanks, armoured personnel carriers and infantry fighting vehicles employed as unromantic mobile pillboxes for intimate protection for infantry fighting through fortified positions, and as a means of moving troops safely throughout rear areas, are in fact the more common usages in warfare over the past century.[68]

Even though grand, sweeping armoured manoeuvres are unlikely to be a feature of land warfare in Australia's immediate region, it's still worthwhile reflecting on the relative sizes of landmasses in Asia, including islands in

Southeast and East Asian archipelagos, to appreciate the potential scale of battles in relatively small spaces. Nagorno-Karabakh, which Armenia and Azerbaijan fought over in 2020 (and again recently), involving heavy armour, is roughly the same size as East Timor. The Donbas in eastern Ukraine is smaller than Taiwan by 4,000 square kilometres. It took two armies and six corps to invade Luzon and seize Manila in 1944–45. East Falkland Island, which is roughly the same size as Guadalcanal, was defended by about 12,000 Argentine troops (principally two brigades), and it took a British ground force of about two large brigades to force the Argentine surrender. Okinawa, which is just 900 square kilometres in size, took half a million troops (including 250,000 combat troops and large numbers of necessary follow-on forces) against 76,000 fortified Japanese defenders.[69]

Australia's Christmas Island is a similar size to Saipan Island, about 135 square kilometres. Saipan was defended by about 30,000 Japanese defenders in 1944, and it took a month and a combined force of about 70,000 American marines and soldiers (supported by tanks) to control. Tarakan and Tarawa, also roughly the same size as Christmas Island, had roughly 2,000 defenders and took about 12,000 to 15,000 attackers each.

Recently, some critics have rightly pointed to the vulnerability of armour against new anti-armour systems and drones coupled with near-ubiquitous modern sensors. Both the Ukraine War and the 2020 war in Nagorno-Karabakh are replete with instances of large numbers of armoured vehicles falling victim to armed drones and cutting-edge anti-armour systems. But that isn't the whole story. In Nagorno-Karabakh, for example, most drone strikes were against troops in bunkers, troops in the open and troops in trucks. It's just that those attacks, which were costlier in lives than attacks on tanks, did not get the same attention.[70]

The value of the armour changes when the vulnerability of troops in the open or in thin-skin vehicles is appreciated. Drones, artillery, mortars, rockets, missiles, other heavy weapons and small-arms fire all make walking infantry vulnerable. Of course, vulnerability is relative, and armoured vehicles have never been invulnerable. But imagine the outcome of the British march to Stanley across the main island of the Falklands if the Argentinians had had modern long-range fires and reconnaissance drones for fire observation and adjustment. It would have failed utterly.

To move on the modern battlefield without armour in many instances, particularly to cross the vast no-man's-lands between fortified and built-up terrain in the face of a modern well-armed enemy equipped with drones, rockets, missiles and long-range artillery, might be the near equivalent of the fabled (and largely mythical) Polish cavalry going up against German armour in 1939. While the image of columns of destroyed Russian tanks in the early stages of the Ukraine War has been used by opponents of armoured vehicles for the ADF, the scale of destruction is incomparable to what would have happened had those columns of Russian armour been columns of marching troops or columns of thin-skin trucks carrying troops. It's perhaps most telling that one year into the war between Russia and Ukraine, and despite Russia's heavy tank losses in the early stages of the war, Ukraine prioritised access to Western tanks as essential.

Some critics point to the USMC's divestiture of tanks and artillery as an exemplar response to the maritime circumstances of some future war in the Indo-Pacific. But that obscures the point that if the USMC requires tanks it can rely on the US Army to provide them.[71] Moreover, the USMC's future vision subordinates its role in conventional land warfare behind its role in maritime strike in company with the US Navy. That changes both the USMC's versatility and the modern order of battle of the US military.

Others, such as land warfare expert Dr Jack Watling, concede that there's still a role for armour within a modern combined arms system. In his book, *The arms of the future*, for example, Dr Watling proposes a fighting system designed for control of urban nodes. The system leverages a 'manoeuvre system', a 'fires system', an 'assault system' comprising armoured vehicles weighing up to 54 tons (below the current weight of an M1 Abrams tank; Figure 1) and a 'support system'.[72] That force design includes command and control, mobile combat support elements, force and/or hub protection assets, and electronic warfare and information operations resources. Though geared to American defence requirements, it's clear that there's room for further experimentation and urgent testing of concepts and capabilities today.

Figure 1: An M1A1 Abrams main battle tank on the beach while a HX77 is unloaded from a LHD landing craft during Exercise Sea Raider 2023

Source: Department of Defence, online.

The problem of operating heavy ground forces in the Indo-Pacific concerns their transportation. That challenge is true not just from the point of view of a simple absence of civil and military sea transport in Australia, but also from the perspective of the vulnerability of transports to long-range strike.

Unfortunately for the advancement of the debate, those against a heavy Australian Army dismiss the utility of heavy ground forces because of the very serious and largely unresolved problem of transporting vulnerable armies across the sea. Those on the other side of the debate are guilty of not acknowledging adequately the seriousness of the challenge of transporting heavy ground forces in the region, and they're guilty of ignoring the seriousness and costliness of the challenge of overcoming the problem.

Rather than dismiss or ignore the problem of transportation, it might be helpful if critics and advocates turned their attention to resolving the larger and perhaps more important question of modern warfare, which is how to manoeuvre naval and land forces and all their supplies and other logistical needs across vast no-man's-lands encompassing both sea and land. It's an unequivocally all-domain problem, and solving it would go a long way towards building confidence that the ADF and like-minded potential allies or coalition partners might be able to manoeuvre in the Indo-Pacific at all.

Such an enterprise would break new ground. It would be likely to have material benefits for Australia's close allies and partners, too. After all, transporting anything in worthwhile numbers, whether inclusive of armoured vehicles or not, is a significant problem in contemporary warfare. Imaginative solutions to rapidly disembark materiel and supplies from vulnerable watercraft and ships across potentially unprepared shores will also be required, as will solutions to disperse those loads quickly into hardened warehouses or depots for immediate use by ground and air forces. Perhaps this is better done by air? Either way, the problem is still very grim.

Australia will be unable to occupy and defend strategically important places let alone dislodge an adversary force without the capacity to get sufficient forces ashore and sustain them under the threat of enemy mines, precision missiles and swarms of drones. Lacking the capability to recapture territory seized in a *fait accompli* is unlikely to deter an aggressor inclined to do so for strategic advantage. As has been noted, small and many fast watercraft are likely to be part of the solution. The fact that Australia had well over 1,000 watercraft in World War II is instructive.[73] How those and larger 'exquisite' vessels could be used to maximise the effect of ground forces and land-based fires in the maritime fight warrants further attention.

Conclusion

There's been over a century of attempts to find solutions to avoid the crude, ugly, violent and costly business of land warfare. All have failed because war is a function of policy and, with few exceptions—even for peripheral players in a larger conflagration—it's often difficult for governments to achieve their policy objectives in war without attaining some objective on land by force or by preventing an enemy from attaining its objective on land by force.

Australian strategic guidance has made prudent compromises on the important and appropriate focus on long-range strike by making some allowance for other capabilities, including an amphibious-capable combined-arms land system. The challenge now is to work out how best to use those ground forces in concert with forces in other domains to create a truly maritime ADF. While this report sketches some rough ideas for how land forces might contribute to Australia's all-domain defence in various scenarios, there's still a lot of imagination and creativity required. A lack of circumspection about the problems of contemporary warfare will only serve to inhibit that imagination and creativity.

As HL Mencken infamously quipped, 'There is always an easy solution to every human problem—neat, plausible and wrong.'[74] Transitioning to an ADF that can generate decisive battlefield effects in all domains in Australia's immediate region is no trivial task. The implications of emerging technologies and social circumstances for warfare, the growing connection between forces on the land and at sea, the tendency for wars to be prolonged and the relative merits of heavy ground units in the Indo-Pacific are all reshaping the role of land forces in deterrence and war.

Notes

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Acronyms and abbreviations

ADF	Australian Defence Force
ISIS	Islamic State of Iraq and Syria
NATO	North Atlantic Treaty Organization
USMC	United States Marine Corps

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