LOWY INSTITUTE
FOR INTERNATIONAL POLICY

JUNE 2011

ANALYSIS

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Dangerous Luxuries: How the Quest for High-end Capabilities Leaves the ADF Vulnerable to Mission failure and More Dependent on the United States

Executive summary

Australia's current defence strategy does not correspond with the realities of Australia's security situation. The plan for the modernisation of the Australian Defence Force (ADF) is focused on expensive maritime and air capabilities for conflicts the ADF couldn't fight alone. Consequently, the ADF is exposed with an atrophying ground force and expeditionary capability for the low-level regional operations in which it will be most likely to engage.

The ANZUS alliance is emerging as the cornerstone alliance for stability in the Asia-Pacific region but the United States must understand the implications Australian defence planning will have on the future alliance. To collectively manage regional security challenges, Australia must rebalance its defence capabilities whilst the United States should consider discarding the Guam doctrine.

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Reflecting on the U.S.-Australian Alliance

If you were to walk the long, maze-like corridors of the Pentagon you would eventually come across the Australia, New Zealand, and United States Security Treaty (ANZUS) Corridor. The displays in this hall commemorate over 100 years of U.S.-Australian military history, from the sailing of the Great White Fleet into Sydney Harbour in August 1908 to the first major engagement of American Doughboys fighting side-by-side with Australian Diggers against the German ground offensive at the battle of Le Hamel, France on 4 July 1918 under the command of Australian General John Monash. Since this modest alliance in World War I, Australia has joined the United States in every major conflict that we have fought – World War II, Korean War, Vietnam Conflict, Cold War, Persian Gulf War, Iraq War, Afghanistan War, and the Global War on Terrorism: always there, always at each other's side, always able to count on one another, always capable.

About halfway down the A-Ring of the ANZUS corridor, the display cases trail off after the 'Contemporary Operations' showcase into a series of random photographs and sketches, symbolically implying 'more to come'. But the ANZUS Corridor, half filled, leaves one to ponder 'what's next?' Where do we go from here? How do the United States and Australia take our defence relationship to the next level? The future – marked by volatility, uncertainty, complexity, and ambiguity – presses the United States to seek strong partners and to not take for granted our closest allies who have been there through the most trying of times.

The Australians are a great military ally and democratic partner to the United States, across all domains of national power. This loyalty and shared sense of strategy has earned them serious standing and influence within the Pentagon. The American military benefits from their frank and direct dialogue. Australians, as well as the British, are on the inside of the U.S. defence thinking and planning. They provide invaluable perspectives, constructively challenging U.S. assumptions and improving our defence approaches towards mutual interests.

It is in this spirit – mutually supportive dialogue – that this paper examines the *Australian 2009 Defence White Paper (Defence 2009)*[1] and addresses where we should go from here to take the alliance to the next level. Deeply concerned about the rise of China and the emergence of India, *Defence 2009* seeks to move the Australian Defence Force (ADF) 2030 from today's counter-insurgency operations to the higher end of the military spectrum of conflict. Based on the threat perceptions demonstrated in *Defence 2009* and its defence policy guidance, the Australian defence policymakers have overemphasised the development of new capabilities designed for conventional high-intensity warfare – as a hedging strategy in case of a conventional military threat to the Australian homeland or major-power war in Asia – and gave too little attention to the mid-level irregular threats, such as non-conventional conflicts or stabilisation or emergency operations around the world. This acute hedging strategy skews Australia's defence priorities, resulting in capabilities less suited to deal with the more likely low- to mid-level operations the ADF will face in the 2030 timeframe. The subsequent loss or erosion of

Australia's military capabilities will add additional burden to U.S. defence planning, increasing costs and limiting operational options to preserve Asia-Pacific regional stability and security.

The argument of this paper focuses on how the capabilities acquisitions outlined in *Defence 2009* – even if they can be realised as planned – would misallocate Australia's limited resources and raise the risk of mission failure. *Defence 2009* makes other choices – some of them implicit – that carry implications for regional security cooperation and for U.S. defence planning; but issues beyond the major capability acquisitions lie outside the scope of this paper.[2] This paper also recommends a range of actions that the Australian and U.S. Defence Departments could take in order to ensure an interoperable and capable ADF.

Australia's defence policy

During the past three decades, Australian governments have commissioned several defence white papers, intermixed with various strategic reviews. These papers are as much political statements as they are defence documents, reflecting the views, policies, and priorities of the political parties in power at the time.[3,4] This is no less true for *Defence 2009*. Upon its release, critics assessed the merits and shortcomings of the policies, strategies, strategic outlook, and allocations of resources. This was much more than an academic exercise. *Defence 2009* serves as the foundation of Australia's defence policies and strategies. It drives the ADF's long-term course by assessing future threats and challenges and prioritising the ADF's defence capability requirements through the year 2030.

Upon the 2 May 2009 release of *Defence 2009*, the Rudd Government reaffirmed Australia's strategic posture 'to be a policy of self-reliance in the direct defence of Australia, as well as ability to do more when required, consistent with [Australia's] strategic interests and within the limits of [Australia's] resources.'[5] During the *Defence 2009* policy review, Australian defence policymakers reevaluated Australia's U.S. defence relationship with regard to Canberra's self-reliance posture and elected to continue a close relationship through to at least 2030. Additionally, the government set the policy that 'the main role of the ADF should continue to be an ability to engage in conventional combat against other armed forces.'[6] The central concept to Australian defence policy is the ability to deter and defeat attacks on Australia without relying on foreign combat and combat support forces. Based on the country's strategic interests, the Rudd government wanted a force that could act independently, lead military coalitions, and make tailored contributions to military coalitions. Concomitantly, *Defence 2009* explained several caveats Rudd's government placed onto the 'self-reliant' principle: continued reliance on intelligence and technology support from the United States; continued reliance on U.S. nuclear deterrence, and an expectation of U.S. support if Australia is threatened by a major power with superior military capabilities.[7]

Defence 2009 reiterated Australia's 'primary focus' for the ADF is to operate within the '*primary operational environment*.'[8] Within the *primary operational environment*, *Defence*

2009 focused on the strategic centre – the air-sea gap to the north of Australia, generally tracing the archipelago line and surrounding waters from northern Australia to Southeast Asia. Indicating future force structure requirements, *Defence 2009* authors embraced the strategy to project military power from northern Australian bases and offshore territories into the strategic centre of the *primary operational environment*. They concluded this strategy required 'an expeditionary orientation on the part of the ADF at the operational level, underpinned by requisite force projection capabilities.'[9]

The policy outlined in *Defence 2009* was also reflected in a new military strategy. The Rudd Government assigned four prioritised tasks to the ADF to secure Australia's strategic interest:[10] first, deterring and defeating attacks on Australia; second, contributing to stability and security of the South Pacific and East Timor; third, contributing to military contingencies in the Asia-Pacific region; and last, contributing to military contingencies in support of global security. Interwoven throughout all of these ADF tasks are the consistent themes of joint and coalition participation with heavy reliance on capabilities providing robust situational awareness and command and control. These prioritised ADF tasks demonstrated Rudd's decision to de-emphasise Australia's expeditionary operations outside the primary operational area in the future, concentrating Australia's defence efforts in the near-abroad and South Pacific region.

Favouring capabilities for inter-state wars

The Australian military strategy seeks to direct the location and the timing of future conflicts by controlling the sea approaches to Australia and by establishing air superiority over those approaches. The ADF will actively engage adversaries' home bases, staging areas, and forces in transit. In addition, Australia reserves the right to use strategic strike and to conduct land operations to preclude any hostile forces from reaching the continent. *Defence 2009* capability priorities reflect a heavy emphasis on dramatic increases in developing both 'expanded maritime' and 'enhanced air' capabilities over the next 20 years.[11] As proposed by a succession of Defence Capability Plans, *Defence 2009* aspires to update nearly every current capability in the ADF at the end of the respective equipments' life cycle.[12] The Defence Materiel Organisation (DMO) estimates the cost to acquire these capabilities, outlined in *Defence 2009*, is between $245 billion and $275 billion, in 2009-10 dollars, out to 2030.[13,14]

There are four capabilities that are particularly important when considering how to add more impact to Force 2030's capabilities: Future Submarines, Joint Strike Fighters, amphibious assault capability, and common operating picture (COP) (see Appendix 2). However, the realities of system affordability, manning of the capabilities, inter-system interoperability, and employment suitability play as important a role as the acquisition of *Defence 2009* capability priorities in developing the means to protect the Australian national interests and achieve the ADF operational and strategic tasks.

The *Defence 2009* authors asserted the Australian government would require the above major capabilities as a strategic hedge to conduct 'more complex operations'. They defined these more complex operations as land strike operations on strategic and operational military targets, such as operating bases, staging areas, and critical military infrastructure.[15] A strategic hedge of this nature is most effective against an adversary nation-state. Capable expeditionary ground forces, in contrast, are most effective in stability and security operations – often against sub-state adversaries. According to *Defence 2009*, these stability and security operations – as a response to irregular threats – will dominate the future operating environment.

Neglecting capabilities for irregular threats

When the Australian government's defence policy is evaluated in totality, as articulated by *Defence 2009*, it expands maritime and air capabilities while essentially hamstringing land capability. The policy overreaches with maritime and air capabilities and substitutes these for land forces. An overreliance on maritime and air domains signals Australia's lack of commitment to working cooperatively with the region's countries to secure stability and security. Equally, a weakened land force undermines Australia's deterrence and dissuasion of would-be aggressors. As recent history demonstrates, tyrants – such as Bosnia's Milosevic, Libya's Gaddafi, Iraq's Hussein, Afghan Taliban's Mullah Omar – can easily go into hiding and wait out missile and air strikes.

It appears that *Defence 2009* restricts Australian land forces' deployments beyond the air-sea gap and intentionally avoids making ground contributions to out-of-area operations. To maintain an alliance with the United States, Australia offers maritime and air contributions that are significant to the ADF's order of battle, but remain only token when compared to the United States' contributions. This is a myopic approach because the most likely low- and mid-intensity scenarios confronting Australia and the United States will require robust land forces, enabled by technology to gain situational awareness, in appropriate numbers to withstand initial contact with the enemy forces. These land forces, enabled by 'mission command' authorities and technologies, can then decide on the most appropriate course of action to take without alienating the very people they are trying to influence.[16] Both maritime and air capabilities are important and needed capabilities, but only troops on the ground engaged in security, stability, peacekeeping, peacemaking, counterinsurgency, and humanitarian operations will be able to consider the effects of possible actions and then responsibly act. *Defence 2009's* strategy was designed to make just enough of a military contribution to preserve the U.S. alliance, without incurring risk to Australian lives on the ground.

Defence 2009 further hobbles the ADF's ground force capability by declaring it will not be a principal task for the ADF to engage in ground operations against heavily armed adversaries located in crowded urbanised environments around the world, including South Asia.[17] This somewhat surprising declaration seemingly relieves the ADF from any future preparation or investment in preparation for high-intensity close combat in built-up areas. Wars are human endeavours

fought where humans live, and as Michael O'Hanlon adds 'where the anger is at.' It is very likely that future battlespace will include urbanised and semi-urbanised terrain, requiring highly trained soldiers, engaged in close combat, to dominate the environment. This future battlespace, a highly urbanised environment, would increase risk to ground forces even using today's technologies, tactics, and operational concepts. Declaring a policy to avoid fighting in an urbanised environment would hinder development of mitigation strategies and technological solutions that could potentially address manpower limitations and the risk of casualties. Wherever Australian leaders send their military forces to protect Australia's national interests, those future deployments could include urbanised environments. If this policy is not intended to limit ADF capabilities, it certainly conveys the message of an ADF limited to conducting operations in a narrowly defined operational environment.

The return to a multi-polar state system and the shift in regional distribution of state power could potentially generate tension and instability in the Asia-Pacific region. Where competing powers' national interests intersect conflict will often occur on the seams, taking place by proxy in fragile and failing states. This competition portends a future enduring pattern of irregular conflict. In such a system, the region would face a changing, uncertain environment characterised by newly emerging irregular threats with ready access to technologies once reserved for nation-states. The proliferation of weapons of mass effects, low-cost technologies made available to fragile and failing states, super empowered groups, and individuals who may enjoy sponsorship from states, such as China, North Korea, and Iran may also cause asymmetric threats to become more prevalent. Defence planners will be confronted with emerging irregular and asymmetric threats as the predictable constant not the anomaly.

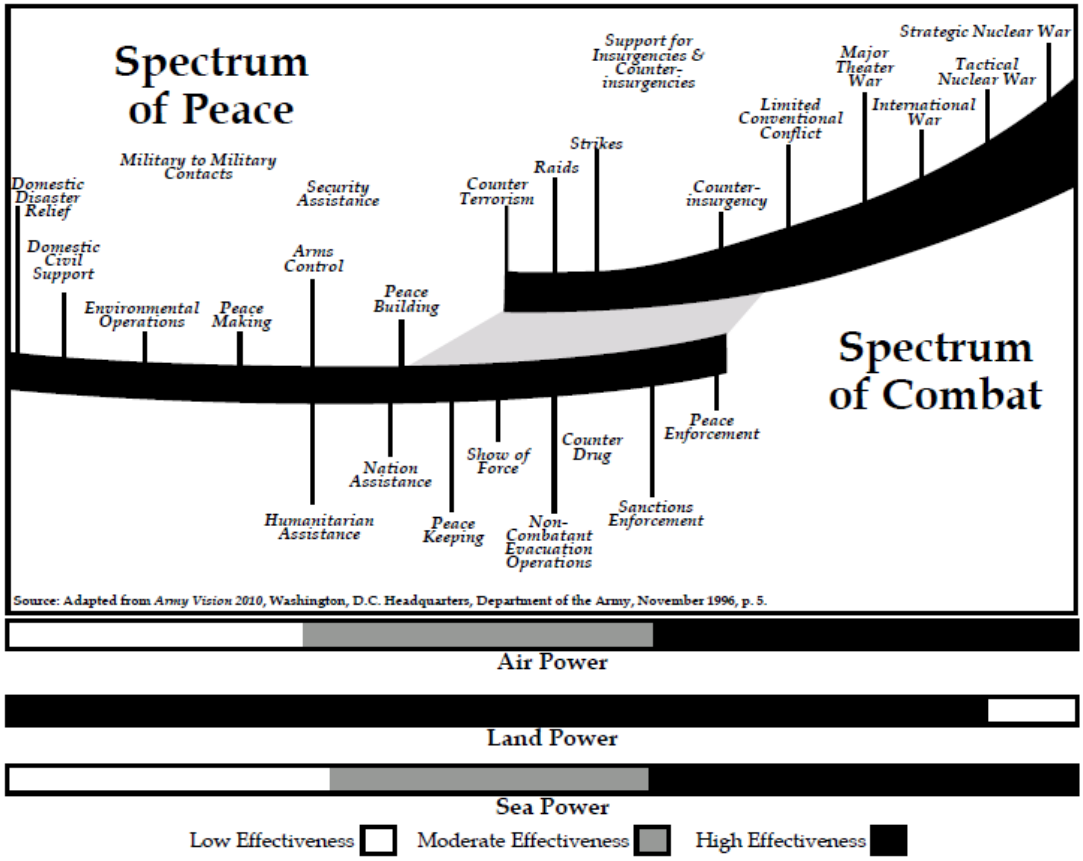
The conventional threat to Australia is low, and will remain so for the foreseeable future.[18] Because of China's global economic interdependence, there is significant disincentive for Beijing to resort to conventional war with Australia. Further, the emerging irregular threats – with or without state sponsorship – will use every means and every creative approach to advance their respective ends. These irregular threats – the ever-present fragile and failing states – as well as states of concern such as North Korea and Iran, will flaunt the norms for the rule of law, be unpredictable in their selected insidious activities, and will be more inclined to belligerent acts than China. Additionally, the ADF will be more likely to perform non-traditional military tasks that do not counter a conventional threat such as humanitarian and disaster relief, non-combatant evacuation operations, and support to diplomatic operations.[19]

In Canberra's effort to shift from today's predominantly counter-insurgency and counter-terrorism operations to the higher end of the spectrum of military operations Australian defence policymakers have overcompensated. They have allocated the preponderance of their resources to capabilities least likely to be needed through 2030, and consequently generated capability gaps toward the lower and centre portion of the spectrum of military operations. The renewed emphasis on

maritime and air capabilities is ideally suited to effectively meet the challenges at the higher end of the spectrum of combat, as depicted in Figure 1. Additionally, the maritime and air domains have moderate effectiveness for operations at the centre of the continuum of military operations, whereas land power's high effectiveness spans nearly the full spectrum, stopping short of tactical and strategic nuclear war.

Figure 1.[20]

Continuum of Military Operations



Noticeable suitability gaps become apparent when comparing the applicability of *Defence 2009* capabilities to scenarios that span the breadth of the continuum of military operations. As outlined in appendices to this paper, *Defence 2009* capabilities are exceptionally suitable for the higher end on the combat spectrum – limited conventional war and major theatre war. However, many of those same high-cost capabilities are not readily applicable to the middle and lower continuum of military operations.[21] With *Defence 2009*, Australian policymakers came to the same erroneous conclusion as the U.S. defence planners did in the aftermath of the Cold War, embracing the prominent theory 'that there is no longer a need for large land forces, that power projection and national military strategy could primarily be carried out through precision strikes using technologically advanced air and naval forces.'[22] Additionally, the U.S. Defense Department in the 1990s accepted the premise that a force designed and equipped to conduct high-intensity conflict, as envisaged during the height of the Cold War, would be wholly suitable for all lower-level operations such as peace building, counter-terrorism and counter-insurgency. These theories proved to be incorrect.[23,24] To perform lower- and middle-spectrum operations the U.S. Army had to restructure and transform its Cold War-era heavy divisions and heavy brigade into units capable of expeditionary operations whilst having enough weight and networked systems to remain relevant.[25]

Australian policymakers perhaps have mistakenly embraced the erroneous theory that technologically advanced naval and air forces, projecting power via precision strikes, can supplant the land forces. However, an alternative supposition could be that the Rudd government adopted this theory to preclude future deployments of the ADF in scenarios such as Iraq and possibly Afghanistan. By developing high-end naval and air capabilities and limiting land capabilities, Rudd and subsequent Australian governments may have been attempting to ensure that the ADF could not deploy out of its *primary operational environment*.[26]

If *Defence 2009* policymakers' intent is to preclude future deployments beyond Australia's *primary operational environment*, then curtailing ground forces would serve this purpose. However, the strategic outlook and the most likely threats confronting Australia *will* call for the ADF – specifically the Australian Army – to conduct operations on the middle to lower spectrum of operations in its near region. Moreover, these operations will not be any 'less demanding' than higher-intensity operations, as the *Defence 2009* authors assert.[27] For unambiguous examples to the contrary, look to the 'low-intensity' operations conducted in Afghanistan, Iraq, East Timor, the Balkans, and in response to the Sumatra tsunami, among many other examples. To be successful, all of these low-intensity operations involved detailed planning, significant resources, numerous boots on the ground, and, in some cases, casualties and political commitment. Arguably, one of the perceived advantages of low-intensity conflict is its low human and political cost – but recent examples belie that too.[28]

Since 1990, the ADF has conducted 70 named operations, 65 of which are on the middle to lower continuum of military operations.[29] Similar to the U.S. Army, the Australian Army

makes the largest force contributions – 63 per cent – to the current Australian joint operations, as depicted in Table 1 (see Appendix 3).[30] Past Australian joint operations indicate a continued heavy reliance on the land forces to successfully conduct future joint operations through 2030 and beyond. These future mid- and low-intensity operations will be similar to ongoing ADF operations listed in Table 1.

Examination of the *Defence 2009* capabilities (as shown in appendices to this paper) reveals that the Australian defence leadership also heavily invested its proposed acquisitions in the higher end of the military continuum. There are 17 major *Defence 2009* capability priorities, composed of 45 primary sub-capabilities. Of the 45 significant sub-capabilities, 23 (51 per cent) are marginally unsuitable or unsuitable – with their primary function – for the middle and lower spectrum of the continuum of operations. On the other hand, the vast majority of the sub-capabilities (41 of the 45) are either exceptionally suitable or sufficiently suitable for the higher end of the continuum. Showing the greatest utility, nine of the 11 enabling sub-capabilities are exceptionally suited for all of the selected scenarios spanning the full continuum. The suitable-rated sub-capabilities lack breadth on the continuum of military operations, indicating that *Defence 2009* made a poor planning assumption. Falling into the same intellectual trap as U.S. defence policymakers of the 1990s, Australian defence planners have erred in assuming the *Defence 2009* capabilities that are exceptionally suited for operations at the higher end of the spectrum of war will suffice for 'lesser' contingences on the spectrum. Essentially, they have designed an Australian Defence Force for 2030 that will be relegated to sit on the shelf until called on to conduct operations on the higher end of the spectrum. However, these expensive systems will be too small in number to support these higher end operations alone. This lack of capabilities will weaken the ADF's capacity to serve as a credible means to build regional partnerships and create flexible options to secure Asia-Pacific security and stability. In order to use the ADF for the more-likely 'low-end' contingencies, Australian defence planners will have to resort to expensive and time-consuming ad hoc restructuring.

Implications

The Australian defence white paper attempts to bridge two competing possible realities. In the first, the United States continues in its traditional role as guarantor and underwriter of Asia-Pacific regional security. In the second scenario, the United States is displaced as the dominant actor in the region by a major power viewed less benevolently by Australians. Australian policymakers and defence policy pundits have expressed apprehension that the retention of the former, or the transition to the latter, will lead to regional conflict between the United States and China, either by proxy as played out during the Cold War or more directly over Taiwan, North Korea, or a South China Sea dispute. Australia fears that the United States will become distracted in the years leading up to 2030 by a crisis or war outside of the Asia-Pacific region, and seeks to create the defence capabilities to become more militarily powerful. In theory, this would serve two purposes: Australia would secure its desire for a self-reliant defence while remaining

connected to the global supply chain and other enablers (intelligence, logistics, strategic lift, and technology access). It would also present its increased military power as its contribution to the U.S.-Australian alliance. The planned increase of Australia's military means would potentially free the United States militarily from having to become directly involved in the Oceania region, leaving a more powerful Australian Defence Force to be the primary force to deal with crises and other security issues in Australia's near-region. This would be a positive development for the United States.

However, the capability acquisitions outlined in *Defence 2009* do not match the strategic rationale advanced in its own pages, for two reasons. First, the lopsided preference for high-end capabilities is designed as a strategic hedge in case of inter-state wars – but those capabilities would offer only token coalition contributions in such wars. *Defence 2009* sets a path to create a hedge by developing capabilities that address the higher end of the spectrum as a deterrent, as well as a mitigation strategy to support the United States in a confrontation or war with China, or to have military capabilities available to deter China in the event of U.S. weakening or withdrawal from the region after 2030. However, *Defence 2009*'s operational environment demarcation portends only a token ADF contribution outside of Australia's immediate region in order to preserve Canberra's deterrence posture. The *Defence 2009* authors stated Australia needs to be prepared to make substantial contributions in the Asia-Pacific region, as well as outside the region; yet, *Defence 2009* explicitly assumes Australia 'will make appropriately sized contributions to such contingencies' and narrows the type of contributions to utilise select capabilities – submarine forces, special forces, surface combatants, and air combat capabilities.[31] Further, the successful implementation of this strategy relies on Australia's ability to develop and field the equipment, systems, forces, and doctrine itemised in *Defence 2009*. Failing to do so would shift the burden back onto the United States (and its systems of regional bilateral defence alliances or relationships) to serve as an ad hoc 'first responder'. It would even more greatly limit any future ADF contributions to coalition operations in North Asia and elsewhere in the world even if those operations served Australia's vital national interests. Additionally, assuming America's power wanes after 2030, Australia would face greater exposure to diplomatic, economic, and military coercion due to a lack of military means.

Second, the disproportionately large hedge with high-end capabilities would deny the ADF critical capabilities it is more likely to need in its *primary operational environment*. *Defence 2009*'s strategic approach for the years leading up to 2030 attempts to subtly reframe the nature of the U.S.-Australian alliance to one where the Australians' principal contributions to the alliance would predominantly occur in their *primary operational environment*. This reframing would ideally posture Australia for the years after 2030, when it becomes less likely that the United States will remain the dominant power in the region. Specifically, if there were a U.S. retrenchment from the Asia-Pacific region, Australian policymakers intend for its high-end military capabilities to increase the cost to any regional power that seeks to coerce an isolated Australia. These same military means, which would boost Australian deterrence effect, are not entirely suited for the

military operations that Australia will most likely conduct over the next 20 to 30 years and beyond. ADF operations in the *primary operational environment* are more likely to be humanitarian, peacekeeping, nation building, capacity building, support to civil domestic authorities, and other operations on middle and lower levels of the military continuum of operations. Consequently, *Defence 2009* planners create potential capability gaps in the very mission areas that Australia would most commonly offer as its principal contribution to a U.S.-Australian alliance. As experienced during the 2006 operations in East Timor, the United States would then have to redirect its military forces to support activities that Canberra had sought to undertake.

Taking our defence relationship to the next level

Defence 2009's impressive array of planned ADF defence capabilities would do well to protect the approaches from regional powers; it would be of value in making a contribution to a coalition effort; and it would deter the South Pacific neighbours, instilling fear into Polynesians and Micronesians. Additionally, the emerging *Defence 2009* defence capabilities would afford a basis for defence cooperation with regional partners, such as Indonesia, Vietnam, the Philippines, Japan, and Singapore. Yet, the current *Defence 2009* policies and strategies would still fall short of enabling Australia to be self-reliant against China. This unintended result would leave the bulk of the ADF 2030's new defence acquisitions to be of limited use when dealing with the most likely conflict scenarios. Some hedging is good, but too much is unaffordable and consequently leaves capability gaps in handling the most likely scenario. As previously suggested in this paper, Australian policymakers could recapitalise some unaffordable and excess air and sea capabilities into ground and amphibious capabilities to deal with the more likely middle- and lower-intensity regional conflict scenarios on the continuum of military operations. A shift of Australia's defence capabilities toward greater utility in the most likely regional contingencies would significantly contribute to stability and security in Australia's *primary operational environment*, as well as making a valuable contribution to the U.S.-Australian alliance. Equipping an ADF for the most likely scenarios would reconcile the disconnect between the *Defence 2009* desire for weapons platforms designed to conduct military operations nearly exclusively at the higher end of the military continuum with policy constraints not to deploy these systems outside of the South Pacific region.[32]

If the U.S. alliance remains the cornerstone of Australia's security, then Canberra's likely contributions in the event of a U.S.-Chinese war would include intelligence, diplomatic support, and a token military force – consisting of at most two Aegis cruisers and two Future Submarines as part of a U.S. flotilla; a Joint Strike Fighter Squadron for a six-month rotation; and one infantry brigade rotated every six months. This contribution represents a fraction of the total *Defence 2009* capability priorities, but – even if it could be summoned – would severely test the ADF's force-generation and sustainability capability. The remainder of the ADF planned capabilities would presumably operate only in the South Pacific or be committed to homeland defence – as a very expensive hedge.

However, Australia could make an even greater contribution – encompassing the full continuum of military operations – to the U.S.-Australian alliance in the form of joint basing. These joint facilities and bases would provide strategic and operational depth for the United States and offer the most tangible form of assurance that any country can receive from Washington, by having U.S. forces on the ground on the Australian continent. Even so, taking the U.S.-Australian defence relationship to the next level goes beyond joint basing: it calls for a deeper stake in one another's defence acquisitions.

Since the Australian government's issuing of the *Defence 2009* paper, a new game-changing prospect has come into play, opening potential opportunities for unprecedented levels of cooperation between the United States and Australia. Australia now has an even deeper stake in the U.S.-Australian bilateral defence relationship because of the Defence Trade Cooperation Treaties between the United States, Australia, and the United Kingdom,[33] ratified on 29 September 2010.

The Treaties eliminate the International Traffic in Arms Regulations for most exports to, and import from, Australia and the United Kingdom of defence articles, services, and technical data.[34] In other words, Australian and British defence companies, within the 'approved community', will essentially be treated like American companies, creating for the first time joint and combined defence industry architectures. Defence systems produced by joint U.S.-Australian ventures can alleviate the reoccurring concerns of U.S. politicians about losing jobs when equipment is purchased abroad. For Australian businesses, the treaties offer 'reduced delivery times for new defence projects and improved business opportunities for Australian companies to participate in U.S. contracts.'[35] American, Australian, and British companies can now readily select approved community business partners that offer the best solutions to develop and to build defence systems or subsystems. Secondly, the streamlining of sensitive technical data exchanges moves interoperability and commonality from an afterthought in the international defence acquisition process to the immediate forefront.[36]

Within the scope of the Treaties, this unified defence architecture enables development and delivery of capabilities, based on shared data, which is fully accessible to American and Australian companies. When the U.S. Department of State finalises the rules, the Defence Trade Cooperation Treaties will create a new pathway to gain access to one another's defence technologies and industries that will significantly enhance systems and information collaboration and interoperability. However, the U.S. Defense Department will need to shepherd the concept of a seamless U.S.-Australian defence industry community through the U.S. State Department's treaties rule-making process in order to provide maximum flexibility and clarity in support of future joint U.S-Australian operational activities.

Australia's continued pursuit of self-reliant 'defence of Australia' and its interests has resulted in a modernisation plan that is simply unaffordable. While planning to greatly increase its maritime and air capabilities, Australia's Army continues to shoulder the largest burden of the ADF operations and will

probably bear the burden of expected future increases in its operational activities, including contested and non-permissive regional operations. Redirecting some of the *Defence 2009* capability priorities would redress the suitability gaps that currently exist on the middle and lower spectrum of the continuum of military operations. The Australian Army would be better postured and equipped for coalition expeditionary operations anywhere in the Asia-Pacific region against the persistent irregular threats by adding 2,000 to 4,000 more troops, specifically trained in amphibious assault operations, with the associated combat support, combat service support enablers, and an integrated command and control information suite that would provide situational awareness at every echelon. Because of its concern about a U.S.-Chinese conflict, Australia has heavily skewed its defence procurements and plans to deter an attack by China and to increase the cost of any such adventure. A rebalancing of this approach would require the United States to assuage Canberra's fears that the United States will remain in the region, committed on the ground and collaborative in defence acquisitions.

To rebalance Australia's defence capabilities, Australian policymakers should add emphasis on ground and amphibious capabilities to deal with the more likely middle- and lower-intensity scenarios on the continuum of military operations. Specifically, the Australian Defence Department should consider: 1) leasing U.S. submarines as a part of a larger joint base arrangement; 2) augmenting the F-35 and F-18 air fleet with unmanned reconnaissance and unmanned combat aerial vehicles; 3) basing U.S. F-22 Raptors in Australia as part of U.S. flexible deterrent options for regional crisis; 4) increasing the size of the Australian Army by 2,000 to 4,000 soldiers and provide the funding to train and sustain amphibious assault operations; and 5) establishing a tactical-level Common Operating Picture acquisition program for units at brigade and below.

Conclusion

The current direction that *Defence 2009* sets for the Australian Defence Force's modernisation does not correspond with the realities of Australia's security situation. The policies and strategies set forth prepare the ADF for contingencies that are least likely to happen, and dedicate large portions of the nation's limited resources to missions that exceed the ADF's capability. If Australia continues down its path to over-hedge with capabilities best suited for the upper end of the operational spectrum, at the expense of the capabilities best suited to deal with persistent irregular threats and other sources of insecurity, it will need to resort to ad hoc responses like those of the past, and will risk rising instability and insecurity. The likely result will be an inadequate, reactive, and weak multilateral response. This will necessitate direct U.S. involvement in stabilising the crisis with more resources than if the issue had been addressed early on with the right mix of capabilities and cooperative security unity. This in turn would increase operational risk. The consequence for the United States would be to either accept an increased defence burden for Asia-Pacific operations on the lower and middle continuum spectrum or to curtail its presence in the region.

DANGEROUS LUXURIES

Since 1918, the United States and Australia have fought side-by-side. The alliance has developed into one of the fundamental building blocks for continued stability in the Asia-Pacific region if not the world. Consequently, the health of this alliance cannot be taken for granted. To do so puts the alliance at risk. A greater understanding of one another's defence and security needs will lead to mutually supporting capabilities to collectively manage the regional challenges at hand. By complementing each other's strengths, the U.S.-Australian alliance will remain vibrant, adaptable, and capable – acting in concert with the other allies in the region – of jointly facing any future challenge.

NOTES

[1] Department of Defence, *Defending Australia in the Asia Pacific Century: 2030*, Australian Government (2009), updated every five years, is the Australian government's equivalent to the U.S. Quadrennial Defence Review (QDR). Hereafter, it is referred to as the *Australian 2009 Defence White Paper (Defence 2009)*.

[2] For extended discussions on cooperative security, U.S.-Australian alliance, and capabilities acquisitions see monograph by John E. Angevine, *Mind the capabilities gap: how the quest for high-end capabilities leaves the Australian Defence Force vulnerable to mission failure*, Brookings Institution (2011).

[3] Patrick Walters, The making of the 2009 Defence White Paper, *Security Challenges* 5 (2) 2009, pp 1-4.

[4] Matthew Barton, *The US Alliance under the Hawke and Keating Government: withered on the vine?*, Flinders University of South Australia (August 2000).

[5] Defence 2009, p 46.

[6] Ibid., p 11.

[7] Ibid., p 50.

[8] Ibid., p 51. *Defence 2009* defines the ADF's primary operational environment as the area 'extending from the eastern Indian Ocean to the island states of Polynesia, and from the equator to the Southern Ocean. That area contains all Australian sovereign, offshore and economic territories, such as Cocos (Keeling) Islands, Christmas Island, Heard and McDonald Islands, Macquarie Island, Norfolk Island and also waters adjacent to the Australian Antarctic Territory.

[9] Ibid., pp 51-52.

[10] Ibid., pp 41-45. *Defence 2009* detailed the following Australia's strategic interests in descending order of importance: 1) 'Secure Australia – defend Australia from direct attack, which includes armed attacks by other states and non-state actors with the means to employ strategic capabilities, including weapons of mass destruction; 2) A secure immediate neighbourhood – security, stability and cohesion of Australia's [near-abroad, defined] as Indonesia, Papua New Guinea, East Timor, New Zealand, and the South Pacific island states; 3) Strategic stability in the Asia-Pacific region – stability of the wider Asia-Pacific region, which stretches from North Asia to the Eastern Indian Ocean with a deep stake in the security of Southeast Asia; and 4) A stable, rules-based global security order – preserving an international order that restrains aggression by states against each other, and can effectively mange other risks and threats, such as the proliferation of WMD, terrorism, state fragility and failure, intra-state conflict, and security impacts of climate and resource scarcity.'

[11] Department of Defence, *Defence Capability Plan 2009*, Australian Government (December 2010 Update), pp 58-69. Available at: http://www.defence.gov.au/dmo/id/dcp/DCP_Dec10.pdf.

[12] Mark Thomson, E-mail to author, 23 November 2010.

[13] Defence Materiel Organisation, *Building defence capability: a policy for a smarter and more agile defence industry base*, Australian Government (2010), p 15. Available at: http://www.defence.gov.au/dmo/id/dips/dips_2010.pdf.

[14] Angus Houston and Ian Witt, The Chief of Defence Force and the Secretary of Defence Strategic Reform Program Media Roundtable, Department of Defence, Australian Government, 16 April 2010. Available at: http://www.defence.gov.au/media/SpeechTpl.cfm?CurrentId=10155.

[15] *Defence 2009*, p 61.

[16] Australian Army, *Army's future land operating concept*, September 2009, pp xiii and 36. The Australian Army defines Mission Command as 'a philosophy of command and a system for conducting

operations in which subordinates are given a clear indication by a superior of their intentions. The result required, the task, the resources and any constraints are clearly enunciated, however, subordinates are allowed the freedom to decide how to achieve the required results.'

[17] *Defence 2009*, p 56.

[18] *Defence 2009* came to the same conclusion that conventional threat remains low for Australia.

[19] Assessment made during roundtable discussion with U.S. and Australian defence officials, hosted by author.

[20] Adapted from the 1996 U.S. Army's Vision 2010 study in support of the U.S. Department of Defense's Joint Vision.

[21] Based on the author's best military judgment, the assessments in appendices to this paper (*Defence 2009* Planned Capabilities' Applicability to Specific Contingencies) (Enablers) assume the *Defence 2009's* capability priorities possess full-idealised capability. Further, each system is assumed to contribute only to its 'primary' function for a given scenario in each of the operational planning phases, defined in U.S. Joint Publication 3-0, pp IV-26 – Phase 0, Shaping; Phase I, Deterring; Phase II, Seizing the initiative; Phase III, Dominating (decisive operations); and Phase IV, Enabling civil authorities.

[22] U.S. Army, *Army vision 2010: the geostrategic environment and its implications for land forces*, Department of Defense (1996). Available at: www.army.mil/2010/geostrategic_environment.htm.

[23] Ibid.

[24] For example, during the Cold War, the United States conducted 10 notable deployments. Following the Cold War to present, the United States has deployed its military forces 27 times: 88% (24 of 27 operations) of these operations occurred at the middle to lower end of the continuum of military operations, with the U.S. Army constituting the highest percentage of the committed U.S. joint force, illustrated in Appendix B. Most recently, the U.S. ground forces (U.S. Army and U.S. Marine Corps) are the largest force contributor to joint operations in Iraq and Afghanistan, ranging from 63% to 84%.

[25] During his tenure as Chief of Staff, U.S. Army, from 1999 to 2003, General Eric K. Shinseki worked to modernise the U.S. Army following the Cold War. His prescient initiative made the U.S. Army more strategically deployable and mobile in urban terrain by transitioning the U.S. Army from a Cold War Era heavy forward deployed force to an expeditionary Army of today. At the time, his vision was controversial. In his argument to the U.S. Army, quoted by Tom Peters, GEN Shinseki encapsulated why the U.S. Army had to change in order to perform the full continuum of military operations that was predominately designed to conduct only at the higher end of the continuum when he said, 'If you don't like change, you're going to like irrelevance less.'

[26] Timothy I. Sullivan, *The Abrams Doctrine: is it viable and enduring in the 21st century?*, U.S. Army War College Strategy Research Paper, U.S. Army War College (2005). Available at: http://www.strategicstudiesinstitute.army.mil/pdffiles/ksil125.pdf. This is somewhat analogous to the U.S. Army's 1968 operational predicament when President Lyndon Johnson refused to mobilise the National Guard and Reserves during the Vietnam War. This decision limited ground operations, hamstringing the U.S. Army in successfully carrying out presidential and Congressional directives and resulting in the U.S. Defense Department increasing U.S. Navy and U.S. Air Force operations over North Vietnam. In 1970, General Creighton Abrams, then-Chief of Staff, Army, implemented the [U.S. Army] Total Force Policy – informally known as the Abrams Doctrine – which reorganised the U.S. Army's capabilities across all of its components – Regular Army, U.S. Army Reserves, and National

Guard. This reorganisation of Army capabilities ensured that civilian authorities could no longer go to war or sustain combat operations without broad political support and the mobilisation of the Guard and Reserves.

[27] *Defence 2009*, p 55. *Defence 2009* authors' references to low-intensity and high-intensity operations correspond to the respective ends of the Continuum of Military Operations. For example, *Defence 2009* authors are referring to security assistance operations and humanitarian operations as 'low-intensity operations.'

[28] Assessment made during roundtable discussion with U.S. and Australian defence officials, hosted by author.

[29] Raspal Khosa, *Australian Defence Almanac 2010-2011*, Australian Strategic Policy Institute, June 2010, pp 102-108. Available at: http://www.aspi.org.au/publications/publication_details.aspx?ContentID=263&pubtype=-1. The 70 named operations since 1990 included 15 humanitarian, 40 non-warlike, and 15 warlike operations residing on the lower and middle portion of the continuum of military operations; and 5 warlike named operations in support of either the 1990 Gulf War, 2003 Iraq War, or the 2001 Afghanistan War which began as a limited conventional conflict and then transitioned to counter-insurgency operations.

[30] Australian Department of Defence e-mail to author, Australian Defence response: numbers breakdown for Aust deployed, Australian Government, 27 January 2011.

[31] *Defence 2009*, p 55.

[32] To remind, *Defence 2009* authors stated Australia needs to be prepared to make substantial contributions; yet, explicitly assumes Australia 'will make appropriately sized contributions to such contingencies' while narrowing the type of contributions to select capabilities – namely, submarine forces, special forces, surface combatants, and air combat capabilities.

[33] William Matthews, U.S. Senate ratifies U.K., Australian treaties, *Defence News*, 4 October 2010, p 9.

[34] Covington and Burling, *Foreign trade controls: Senate ratifies defence trade cooperation treaties with the United Kingdom and Australia*, 8 October 2010. Available at: http://www.cov.com/files/Publication/d86adab0-273b-48d3-bde7-672c492b5f7d/Presentation/PublicationAttachment/09bc0760-670a-4eb6-b525-730bf78b19a1/Senate%20Ratifies%20Defence%20Trade%20Cooperation%20Treaties%20with%20United%20Kingdom%20and%20Australia.pdf.

[35] Kevin Rudd, Australia welcomes US Senate's agreement to ratify Australia-US Defence Trade Cooperation Treaty, 1 October 2010. Available at: http://www.foreignminister.gov.au/releases/2010/krmr_101001b.html.

[36] Treaty between the Government of Australia and the Government of the United States of America Concerning Defence Trade Cooperation, signed 5 September 2007 and ratified 29 September 2010. Available at: http://www.austlii.edu.au/au/other/dfat/treaties/notinforce/2007/31.html.

[37] See DMO's Top 30 Acquisition Projects List at http://www.defence.gov.au/dmo/tap/index.cfm.

[38] Peter Briggs, *A brief on the issues arising from consideration of the requirements for a future submarine capability for Australia*, Submarine Institute of Australia, 1 April 2007. Available at: http://www.submarineinstitute.com/userfiles/File/07REP2150_Conclusions%20Regarding%20a%20Future%20Submarine%20Capability%20for%20Australia_1_04_07.pdf.

[39] Andrew Davies, *Keeping our heads below water: Australia's future submarine*, Australian Strategy Policy Institute, 30 January 2008.

[40] Andrew Davis, *Navy capability review 2010*, Australian Strategic Policy Institute, 29 June 2010. Available at: http://www.aspi.org.au/publications/publication_details.aspx?ContentID=261.

[41] Author's non-attribution interviews of senior Australian government officials.

[42] Cameron Stewart, Joel Fitzgibbon admits 'challenge' manning Collins-class submarines, *The Australian*, 25 February 2009. Available at: http://www.theaustralian.com.au/news/nation/minister-admits-subs-serious-problem/story-e6frg6nf-1111118958313.

[43] Author's interviews of senior Australian government officials for non-attribution.

[44] Stephen Smith, Doorstop Interview, Adelaide: Security cooperation with the United Kingdom, Defence Investment in South Australia, Department of Defence, Australian Government, 19 January 2011.

[45] Stephen Smith, Super Hornet ready for duty, Australian Government Media Release, 8 December 2010.

[46] Peter Criss, There is nothing super about this Hornet, *The Sydney Morning Herald*, 15 March 2007. Available at: http://www.smh.com.au/news/opinion/there-is-nothing-super-about-this-hornet/2007/03/14/1173722557984.html?page=fullpage.

[47] Nathan Hodge, Chinese plane spurs interest in U.S. fighter, *The Wall Street Journal*, 18 January 2011. Available at: http://online.wsj.com/article/SB10001424052748704029704576088230120934902.html?mod=dist_smartbrief.

[48] Ibid.

[49] Australian Army, http://www.army.gov.au/.

[50] Trevor Thomas, RIMPOAC 2010: Australia tests its theories for amphibious assault, *Australian Defence Business Review*, 29 (04/05) 2010, pp 11-24.

[51] Jonathan Hawkins, The amphibious amphitheatre, IN *Projecting force: the Australian Army and maritime strategy*, Land Warfare Studies Centre (June 2010), pp 35-56. Available at: http://www.army.gov.au/lwsc/docs/sp317.pdf.

[52] Author's interview of a senior Australian officer for non-attribution.

[53] See also recommendations of Lieutenant Colonel Jonathan Hawkins for the development of an Australian Army amphibious specialised capability. Available at: http://www.army.gov.au/lwsc/docs/sp317.pdf.

[54] Stephen Smith and Liam Fox, Second Joint Statement on Australia-United Kingdom Defence Cooperation, Australian Government, 18 January 2011. Available at: http://www.minister.defence.gov.au/smith/static/files/AUKMIN%20Second%20Joint%20Statement_Strategic%20Policy%20Partnership.pdf.

[55] Author's interview with LTC Alicia G. Weed, U.S. Army, U.S. National Coordination Officer, ABCA Armies Program, The Pentagon, Washington, D.C., 7 December 2010.

[56] Bruce Rolfsen, F-18C linked to British Marine's death, *Navy Times*, 8 December 2006. Available at: http://www.navytimes.com/legacy/new/1-292925-2412022.php.

[57] John Hutcheson, Australian Army operations in East Timor and Solomon Islands in 2006, *Australian Army Journal* IV (2) 2007, pp 93-106.

[58] Author's interviews of mid-level Department of the Army and America, British, Canadian, Australian, and New Zealand (ABCA) Armies' Program staffs.

[59] Author's non-attribution interviews and review of ABCA Armies' Program, *ABCA Activity:*

COOPERATIVE SPIRIT 2008 11 September – 10 October 2008, ABCA Report 69, 10 December 2008.

[60] Drew Hamilton, Multinational test held at White Sands, U.S. Army, 16 November 2010. Available at: http://www.army.mil/-news/2010/11/16/48184-multinational-test-held-at-white-sands/.

[61] Ibid.

[62] U.S. Army, *Field Manual 3-0, Operations*, Department of the Army (February 27, 2008), p 5-15.

[63] Ibid., p 4-3.

[64] Author's interview with Hugh White, 2 December 2010, at the East-West Center, Washington, D.C. When asked about Defence 2009 capabilities, Hugh White offered what the ADF needed in order to deal with emerging threats, recommending additional land forces, special operations forces, intelligence, information fusion, building partner capacity, and building regional alliances.

[65] Mark Thomson, e-mail to author, Australian Defence White Paper 2009, (23 November 2010). Regarding Defence 2009 capability priories, Thomson identified the following as apparent ADF gaps: heavier armor fighting vehicles with adequate protection against anti-armor weapons; proper digitisation to allow information and targeting to be quickly shared; intelligence, language, and cultural skills relevant to the environment; and adequate scale of forces to allow an independent area-of-operation to be sustained over an extended period.

[66] Stephen Smith, Doorstop Interview, Adelaide: Security cooperation with the United Kingdom, Defence Investment in South Australia, Department of Defence, Australian Government, 19 January 2011. Mr. Smith noted Australia has to operate in a new fiscal constrain procurement environment, which differs from the Defence 2009 fiscal assumptions when he stated: 'Australia in the Defence area has been subject to fiscal restraints since the introduction of our white paper in 2009 and our Force 2020 posture and our Strategic Reform Program. In the old days the anecdotal analysis used to be that there was perhaps a limitless cheque or an ongoing large cheque for defence assets. This is no longer the case in Australia, no longer the case in the United Kingdom, no longer the case in the United States as you would have seen from some of the reforms that Secretary of Defence Gates has effected in the United States recently.' He also stated, '…we all live now in the defence arena in a time of tight fiscal restraint, and we need to make sure that the things that we do in terms of Defence procurement and Defence capability and Defence assets give taxpayers and nations value for money and value for effort.'

APPENDIX 1. *Defence 2009* Defence Capability Priorities

The most significant *Defence2009* capability priorities include the following:

- Acquisition of 12 new Future Submarines, including maritime-based land-attack cruise missile and unmanned underwater vehicle mission payloads, to replace the six Collins- class submarines;
- Procurement of three Spanish-designed Air Warfare Destroyer hulls (with an option for a fourth destroyer), fitted with a U.S. Aegis combat system and SM-6 long-range surface-to-air missiles;
- Replacement of the current ANZAC-class frigates (3,600 tonnes) with eight Future Frigates (6,000+ tonnes), having maritime-based land-attack cruise missile strategic strike and anti-submarine capabilities;
- Replacement of the Navy's current fleet of Sea Kings and the Army's fleet of Black Hawks with 46 new European-built multi-role helicopters;
- Replacement of the four existing vessel classes – currently conducting offshore resource protection, border security, hydrographic and oceanographic environmental assessments, and clearing sea mines – into a single multi-role class (2,000 tonnes) that uses a modular mission payload system concept, replacing the current fleet of 26 vessels with 20 new corvette-size Offshore Combatant Vessels;
- Acquisition of two landing helicopter dock amphibious ships and six new ocean-going heavy landing craft;
- Continued support for two additional infantry battalions, totaling 10 battalions, as well as changing the Australian Army's doctrine to embrace the concepts of adaptive action and mission command as part of the Adaptive Army Initiative;
- Procurement of 24 Super Hornet F/A-18Fs, equipped with the Joint Air-to-Surface Standoff Munitions, as a bridge to the Joint Strike Fighter (JSF);
- Acquisition of 100 JSFs, forming three operational squadrons of not fewer than 72 JSFs, to replace current air combat aircraft;
- Acquisition of seven large high-altitude, long-endurance unmanned aerial vehicles and replacement of the current AP-3C Orion aircraft with eight new maritime patrol aircraft (P-8 Poseidon under consideration) to provide greater maritime surveillance; and Acquisition of five KC-30A air-to-air refueling-transport aircraft and six new airborne early warning and control (AEW&C) aircraft.

APPENDIX 2. *Defence 2009* Selected Capabilities Case Studies

If fully acquired the envisaged *Defence 2009* capability priorities will provide a decided advantage for the ADF's *Force 2030*, particularly at the higher end of the continuum of military operations. The versatility of *Force 2030* to address the entire operational continuum is somewhat broadened when combined with the other capabilities listed in the Defence Capability Plan and the ongoing Defence Materiel Organisation (DMO) projects, such as those listed in the DMO Top 30 Acquisition Projects List.[37] When considering how to add more impact to *Force 2030*'s capabilities with modest changes to the current programs, four significant capabilities stand out for closer examination – Future Submarines, Joint Strike Fighters, amphibious assault capability, and common operating picture (COP). Changes to these programs would expand the ADF's ability to span more of the operational continuum and provide a more versatile force for carrying out the tasks assigned to the ADF in *Defence 2009*.

Future Submarine. The follow-on to the six Collins-class (3,000-tonne) submarines – Future Submarine (SEA 1000) – is an ambitious program to afford Australia a strategic deterrence, which would provide stealthy access to denied areas, contribute to security of sea commerce and energy supplies, and give an array of strategic capabilities such as land strike, anti-ship, anti-submarine, intelligence collection, and Special Forces operations.[38] The anticipated $31 billion-plus program seeks to replace the six Collins-class subs with an indigenously designed and built submarine – doubling the submarine fleet to 12 long-range, non-nuclear propulsion boats (at an estimated size of 4,000-tonnes).

The growth in the fleet to 12 boats would permit up to eight Future Submarines to be available for concurrent missions at any given time, assuming better maintenance availability than the Collins due to expected design and materiel improvements. Based on the experiences with the problem-plagued Collins-class submarine program, several issues present potential hurdles to an indigenously designed and built boat. These issues could threaten DMO and the Royal Australian Navy's (RAN's) ability to deliver and sustain the full complement of 12 platforms. These issues include increase in cost due to likely program design and construction delays, refitting of the current Collins-class repair and maintenance facilities to be able to handle larger and more sophisticated submarines, increasing maintenance for more complex Future Submarine systems, and recruiting and retention of the crews.[39] There will be added cost to refit the current repair and maintenance facilities and to expand those facilities to accommodate larger boats in addition to the six extra submarines, as well as associated updating of the training facilities. Also, there are persistent doubts that the RAN will be able to maintain the needed operational readiness rates at the required levels to keep eight to ten larger and more technologically complex boats at sea. The RAN has only been able to make two of its six Collins-class boats available for missions because of maintenance problems; and based on press reports and interviews with Australian government officials, the availability could be as low as one boat.[40,41] On top of the cost and maintenance challenges, the RAN is unable to fully man more than two Collins-

class boats with a crew of 43 personnel for each boat, noting it is likely the Future Submarines will have an even larger crew.[42,43]

While the SEA 1000 program is still being scoped and designed, now is the ideal time to examine alternatives to provide more mission flexibility and to lower the cost of the program. By reducing acquisition from twelve to ten submarines, estimated cost would decrease by about $5 billion, and a portion of this savings could be reinvested back into the amphibious assault capability to resource the addition of 2,000 to 4,000 soldiers and offset the cost increase to reconfigure the Canberra-class vessels to handle heavier Australian Army vehicles.

Additional Australian cost mitigation could occur by establishing a joint U.S.-Australian naval repair and maintenance facility at HMAS Stirling in Western Australia. The joint naval facility, leased by the United States, would greatly increase the United States' strategic depth into the Indian Ocean and western side of Southeast Asia and increase both strategic and operational options for U.S. operations in the region by augmenting the U.S. presence beyond Guam. The U.S. Navy's construction of a submarine repair and maintenance and training facility would mitigate many of the challenges Australia has had with its Collins-class submarine program, as well as greatly enhance the interoperability of the U.S.-Australian submarine forces by conducting joint maintenance and repairs.

For Australia's part, making Australian real estate available to the U.S. Navy in partnership with the RAN at a joint facility would either provide cost avoidance for or reduced cost of the Future Submarine program by leveraging U.S. technical expertise on any commonly used systems and platforms, provide access to U.S. training and weapons testing facilities, and gain economy of scale for maintenance and repairs, which could increase operational readiness of the Future Submarines. In a similar way to Australia's consideration for the leasing of British Bay-class large amphibious landing dock vessels, the U.S. Defense Department and Australian Defence Department should consider the leasing of U.S. submarines as a part of the larger joint base arrangement, which could further reduce cost and increase interoperability.[44] Finally, this proposed joint facility would signal to Australia the United States' resolute commitment to the ANZUS alliance and to the Asia-Pacific Region.

Joint Strike Fighter. Since World War II, Australian defence planners have increasingly become more reliant on the air domain, and with *Defence 2009*, their strategy is even more dependent on it. In the wake of the retirement of the last of the 22 F-111s, the Royal Australian Air Force (RAAF) is attempting, as an interim measure, to bridge the strike and interdiction gap with a squadron of 24 F-18Fs, which achieved initial operational capability in December 2010.[45]

Meanwhile, the beleaguered fifth generation Joint Strike Fighter (JSF) program has endured program delays, restructuring, and intense scrutiny of its cost, as well as Australian critics disputing the effectiveness of its anticipated combat capabilities. The growing handwringing over Asia-Pacific countries' acquisitions of Russian-made MiG-29s and Su-30s, as well as the unveiling of the Chinese J-20 stealth aircraft, add pressure to deliver the JSF

on time at an affordable price in order to mitigate the risk of gaps in strategic deterrence, interdiction, and strategic strike within Australia's *primary operational environment*.[46,47]

Cost continues to remain the singular issue.[48] If the cost cannot be kept down to Lockheed Martin's quoted cost, and assuming Canberra does not allocate additional funding to its JSF program, then Australia will be able to purchase only 50 to 60 F-35A aircraft instead of the originally planned 72 to 100 aircraft. The reduced acquisition, absent other acquisitions or operational mitigations, could place in jeopardy the RAAF's ability to achieve its assigned strategic and operational tasks. This would consequently threaten the *Defence 2009* strategy to provide a credible deterrence and to defeat attacks on Australia in a worst-case scenario as inferred in *Defence 2009* – meaning large conventional war. To gain depth in the air domain requires both quality and quantity of airframes. The RAAF would not have the quantity of F-35As needed to either establish concurrent mission rotations to cover the *primary operational environment* or to have the necessary density to match an overwhelming air attack by a great regional power as alluded to in *Defence 2009's* strategic outlook. In other words, swarms of lesser capable Chinese MiG-21s could overwhelm a small number of high-quality and capable Australian F-35A aircraft.

The F-35A provides the enduring qualitative edge, leapfrogging ahead of all Asia-Pacific regional powers. Yet, the potential reduced quantity of Australia's F-35A acquisition could fail to produce air dominance needed credibly to deter an attack in a major theatre war. Increasing the number of aircraft with an economical platform, even if it is less capable than the F-35A, will provide the depth to the air domain to ensure full mission coverage. If the F-35A cost were to balloon to the point that it greatly exceeds the F-18F cost, then the F-18F with AGM-158 JASSM (and refueling support) would be an adequate quantitative augmentation to the F-35A qualitative edge in order to provide the depth needed to gain air dominance and strategic strike capability. This would provide the margin needed to preserve a self-reliant, credible deterrent against major powers in the Asia-Pacific region.

Further consideration should be given to augmenting the composite air fleet with unmanned reconnaissance and unmanned combat aerial vehicles to reinforce the RAAF's credibility to deter and defeat an attack. The F-18F offers a 'just-good-enough capability' for the money, and the unmanned aerial vehicles provide the best value for gains in expanded mission capabilities.

Nonetheless, every aviation system has operating boundaries and capabilities limits which can be mitigated by modifying employment tactics, techniques, and procedures. In operations on the higher end of the military continuum the RAAF F-35As and the U.S. Air Force F-22s could partner to complement one another. The F-22 would gain air superiority and eliminate air defence systems, while the F-35A would exploit its exceptional air-to-ground capabilities to deliver precision strikes on assigned targets. In the high-threat environment, the teaming would complement each platform's strengths and offset each other's limitations. While the F-35 is not invisible in all spectrums, it is good

enough to get close enough to its intended target to deliver its weapons and then egress. The F-35A's sensor fusion, providing 360-degree situational awareness, would permit it to detect an adversary before the adversary could detect the F-35, which in turn facilitates options either to attack or to take other courses of action.

If the circumstances warrant, based on strategic indication and warning of an impending regional crisis, the U.S. Defense Department and the Australian Defence Department should consider the forward basing of U.S. F-22 Raptors in Australia as part of U.S. flexible deterrent options needed to deal with the crisis. Such basing would complement F-35A capabilities and mitigate JSF limitations.

Amphibious Assault Capability. Australian defence planners are seeking to re-establish an amphibious assault capability which would allow the ADF to conduct combat, peacekeeping, and humanitarian operations in permissive or non-permissive environments. Australian defence planners envisage the amphibious assault concept as applying across the full spectrum of the military continuum of operations. However, as currently envisioned, the amphibious assault capability is not powerful enough to conduct high-intensity operations in a contested environment and is not optimally suited to operations at the mid and lower spectrum on the military continuum.

The amphibious capability is to be built around two new Canberra-class 27,000-tonne landing helicopter dock (LHD) amphibious ships. Plans call for each amphibious ship to carry a crew and embark a 2,000-man force, 100 armored vehicles (including tanks), 200 other types of vehicles, and 12 helicopters (with hangar space and landing space) while being able to conduct simultaneous air and watercraft operations in up to Sea State 4 conditions. Additionally, the LHD would have provisions for the crew and the embarked force to support 45 days' endurance plus ten days of operations while ashore. Lastly, the LHD would serve as a command and control platform for a Joint Task Force. If properly designed and fully manned, vessels under this amphibious assault concept would extend the breadth of ADF capabilities, mitigating *Defence 2009's* overemphasis on the higher end of the continuum of military operations.

However, with over three dozen other DMO projects linked to the amphibious ship project (JOINT PROJECT [JP] 2048), equipment and system interoperability becomes critical to the overall program if the full potential of the amphibious capabilities are to be realised. The ship would have to be able to accommodate the size and weight of the Australian Army's combat vehicles readily enough to facilitate combat offloading in a non-permissive or contested environment. There is also a need to raise and maintain an amphibious assault force that is trained and rehearsed to assault the beaches while employing combined arms operations (massing firepower with supporting combat support and logistics at decisive points to achieve assigned objectives). This force would need to be practised at sequencing equipment offloads in contested environments to support the assault commander's tactical manoeuvres ashore. The ability to successfully create such an amphibious assault capability is threatened by the lack of manning in the Australian Army, the mismatch in LHD-Army

land vehicle, and the absence of amphibious force doctrine and training.

The Canberra-class LHD was designed for the Australian Army's legacy combat vehicle fleet. Yet DMO's LHD modernisation program is not interoperable with the Australian Army's new Overland-Field Vehicle Project (LAND 121, Phase 4) and Land Combat Vehicle Project (LAND 400, Phase 2). Collectively, these two LAND projects will replace the current legacy fleet consisting of the Land Rover vehicle series (averaging 4 tons), M113AS3/4 (10-ton curb weight), Bushmaster PMV (13.7-ton curb weight), and ASLAV (12.9-ton curb weight).[49] According to *Australian Defence Business Review*, the Australian Army Development and Plans Office briefed that the new vehicle fleets, drawing on lessons learned from Iraq and Afghanistan, 'would include: 40-tonne [44-ton] fighting vehicle; a 30-tonne [33-ton] protected mobility vehicle; a 35—70-tonne [38.6—77.1-ton] specialist vehicle; and a 10-tonne [11-ton] protected mobility vehicle-light type vehicle.' The new combat vehicle fleet is heavier by about 50 per cent, and the footprint is larger than the legacy fleet.[50] Consequently, the LHD will have less lane space available than originally thought and more weight to bear on its decks than initially planned, rendering the current Canberra-class design less capable without redesign and reinforcement.

The Australian Army will have to reduce the size of its amphibious assault force unless DMO procures a third LHD or redesigns the current LHD which is under construction. Fearing political rebuke due to the expected increases in cost and delays for JP 2048, DMO has not updated the LHD requirements to accommodate the increased vehicle size and weight. Additionally, with the greatly increased vehicle weights, the ship's shifted centre of gravity may make the LHD top heavy, thus reducing the sea state in which it can operate.

Amphibious assault missions are complex and require extensive training and practice to maintain readiness and proficiency. Australian defence planners intend to use Australian Army battalions, adding significant unresourced manning requirements onto the already busy Australian Army. If not fully resourced, the amphibious assault concept would give a marginal return on Australia's investment and capability. Australian Army units could familiarise themselves with amphibious assault operations but would habitually be challenged to become proficient at this specialised, complex combat mission by the lack of training and exercises, disruption to land combat training rotations, and increased maintenance for their equipment due to seawater exposure.[51]

In an interview, a senior Australian officer rhetorically asked, 'If you don't have the money [and manning] to do this, then why are you buying it?'[52] This is reminiscent of Mark Thomson's budget characterisation of *Defence 2000 White Paper* as 'fitted-for-but-not-with platforms.' The corollary characterisation of the LHD's ability to conduct amphibious assault missions would be summed up as 'capability-built-but-not-manned-with-or-trained-for.'

To develop an amphibious force that is fully proficient at amphibious assault operations – fully exploiting the LHD's capabilities – Australian policymakers should increase the

size of the Australian Army by 2,000 to 4,000 soldiers and provide the funding to train and sustain amphibious assault operations. This increase would be in addition to the two battalions already endorsed in *Defence 2009*. The proficiency needed to implement the Australian Amphibious Concept and missions – which includes Ship to Objective Manoeuvre, Distributed Operations, and Sea Basing – necessitates specialist amphibious units with command and control and joint enablers (combat support and combat service support) – logistics, aviation, intelligence, fire support, engineers, and armor. The additional 2,000 to 4,000 soldiers would add the manning depth to establish two U.S. Marine Corps-like Marine Expeditionary Unit-sized formations (or an Australian Amphibious Ready Group [ARG]) and a Commander Landing Force (CLF) headquarters in order to create a self-sustaining training-deploying-readiness cycle.[53] The DMO should immediately remedy the interoperability disconnects between LHD (JP 2048) and vehicle modernisation (LAND 121 and 400) to fully exploit LHD capabilities, which would facilitate the ADF's ability to conduct the full breadth of military operations.

Common Operating Picture (COP). The COP may not be as sexy as a new jet, but it may be more important. In a recent Joint Australian-British Communiqué, Australian Defence Minister Stephen Smith reaffirmed his country's commitment to the American, British, Canadian, Australian, and New Zealand (ABCA) Armies' Program, which stressed the importance to 'pursue a substantial program of Defence cooperation through exchanges on Defence science and technology, and joint training and exercises that support [ABCA members'] interoperability.'[54]

Australia's enduring commitment has improved interoperability to exchange data and information, to standardise operating procedures, and to promote system commonality that accepts and provides services among other systems. Partnering with ABCA members, the Australian Defence Department has focused its past and current efforts at the strategic and operational levels to improve the exchange of data and information to create a common operating picture. Nonetheless, recent exercises demonstrated several ABCA partners' inability to aggregate data and information at brigade- and lower-level units to create a combined tactical-level COP, which in turn feeds the operational and strategic COP.

Critical to the ABCA is the ability to connect digitally, to pass command and control information, to enhance situational awareness, and to create a coalition COP.[55] The absence of a tactical-level COP has proved deadly in the past. In Afghanistan in 2006 a USS *Eisenhower* F/A-18A/C pilot mistakenly strafed British Royal Marines' fighting positions during a 10-hour battle, killing one Royal Marine.[56] Lessons learned from operations in East Timor and Solomon Islands also noted the lack of a COP, which created stovepipes of information that significantly impeded inter-agency interoperability with the military and inhibited all operations from being integrated and mutually reinforcing.[57]

The number-one tactical-level interoperability issue for Australia – as well as the other members of ABCA – is the lack of an integrated tactical-level COP and the distribution of the COP by echelon.[58] These deficiencies were noted during an ABCA-authorised exercise, COOPERATIVE SPIRIT 2008, hosted by the

United States at the Joint Multinational Readiness Center, Hohenfels, Germany, from 11 September to 10 October 2008. Chief among the Australian battle group's concerns was its inability to automatically populate friendly forces' location, the inability of the Australian tactical operation centre's information systems to handle the larger volume of data, and the inability to transfer COP data to higher headquarters. While the Australian Command and Control Information System (C2IS) performed above expectations in terms of coalition interoperability, the overall observation was that the Australian C2IS was not developed to support a COP.[59] The findings of the COOPERATIVE SPIRIT 2008 exercise were revalidated in a multinational test – named 'Multinational Experiment 4.5' – held at White Sands Missile Range, New Mexico, over two days in October 2010. The American, Australian, Canadian, and British militaries tested advanced communications equipment during 'a live, radiating fire mission to address operational and interoperability requirements for a communications network at brigade level and below.'[60] The Multinational Experiment 4.5 revealed 'Army commanders at every echelon lack a tailorable, integrated, and continuously updatable common operating picture for use across the full spectrum of Army operations.'[61]

This lack of situational awareness would severely inhibit coalition disaggregated combat operations in complex environments. Creating a common operational picture facilitates Mission Command, reducing the level of control higher-level commanders need to exert on their subordinate commanders, by enabling small units to see the overall operations and the effects of their contributions.[62] The capability to exchange data and information to enhance situational awareness and to share a common operating picture needs to extend beyond the strategic and operational levels.

The DMO in collaboration with ABCA should consider a specific tactical-level COP acquisition program for units at brigade and below in order to feed the operational and strategic COP. Such a system must provide high-resolution situational awareness for small units performing disaggregated joint and coalition operations. With this real-time tactical picture integrated with the strategic COP, land forces at all levels would have unique situational awareness to 'use lethal and nonlethal actions more effectively than the enemy can.'[63]

Collectively, these four capabilities will prove useful for the Australian Defence Force in 2030.[64,65] However, the bejeweled Future Submarine program is likely to be financially infeasible due to a newly constrained Australian defence budget for the foreseeable future which changes the fiscal assumptions made in *Defence 2009*.[66] Creative ways need to be examined to ensure an affordable submarine program to include joint basing, joint repair and maintenance operations, and leasing of platforms. Equally, the Amphibious Assault capability will suffer the same fiscal constraints if not adjusted to accommodate the Army and other joint operations. Australia has committed to purchasing an interim sealift vessel from the United Kingdom but needs to take care that any amphibious vessel will be able to inject combat forces into a contested environment in a manner that would support the commander's scheme of manoeuvre. Failing either to deliver interoperability with the Australian Army's

requirements or to establish a trained amphibious assault force to exploit the new amphibious capability would result in an adorned transport instead of a combat capability that could contribute across the full continuum of military operations.

The beleaguered Joint Strike Fighter Program will enhance the ADF capabilities on the high end of the spectrum, as well as offer close air support capabilities in counter-insurgency operations when employing precision guidance munitions under the control of ground forces. However, potential spiraling cost could curtail the number of Joint Strike Fighters Australia will be able to procure, which puts at risk the RAAF ability to adequately cover Australia's northern air-sea gap. If Australia is unable to acquire the requisite numbers of F-35A aircraft, it will be unable to provide credible air deterrence against countries equipped with advanced fighters or large numbers of less capable fighters. To mitigate the potentially reduced F-35 acquisition, Australian defence planners should consider augmenting their JSF squadrons with unmanned combat and reconnaissance aerial vehicles and lower-cost fighters such as the F-18F.

Seemingly an afterthought with respect to the development of a joint, interagency, and coalition COP, Australian Command and Control systems need to be a networked and interoperable to support operations in all domains of the future operating environment – land, air, sea, cyber, and space. Failure to do so will result in ad hoc approaches to remedy the need for a tactical-level COP, which would not likely be fully integrated with the operational and strategic levels, leaving a 'blind spot' for disaggregated operations regardless of where these operations fall on the military continuum. As a final point, unless the Australian Defence Department commits to a regular regime of training and exercises for the full spectrum of tasks, including rotations of units and sustained maintenance of systems, the *Defence 2009* capabilities will offer only marginal return on investment. The under-resourcing of ADF training, exercise, and maintenance has historically plagued the ADF, making it unable to take advantage of all of its legacy systems capabilities, and the same could hold true for ADF 2030.

APPENDIX 3. TABLES

Table 1. Australian Defence Force Current Operational Deployments by Service

Operations	Approximate Personnel	Navy (%)	Army (%)	Air Force (%)	Civilians (%)
OP SLIPPER (Afghanistan)	1550	1.5	87	10	1.5
OP SLIPPER (Middle East)	800	36	14	47	3
Operation PALATE II	1	N/A	100	N/A	N/A
OP RESOLUTE	400	60	25	15	N/A
OP ASTUTE	400	1	94	5	N/A
OP TOWER	4	N/A	75	25	N/A
OP MAZURKA	25	N/A	100	N/A	N/A
OP KRUGER	33	N/A	88	12	N/A
OP RIVERBANK	2	N/A	100	N/A	N/A
OP PALADIN	11	N/A	92	8	N/A
OP ANODE	80	N/A	100	N/A	N/A
OP AZURE	17	10	60	30	N/A
OP HEDGEROW	8	N/A	80	20	N/A

Table 2. *Defence 2009* Planned Capabilities' Applicability to Specific Contingencies

Scenarios / Capabilities	Sub-capabilities	**Humanitarian Assistance** (Sumatra Tsunami, Queensland Flood 2010/11)	**Counter-Terrorism** (Bali, Afghanistan)	**Counter-Insurgency** (Afghanistan, Iraq post-2004)	**Peace Enforcement** (East Timor, Solomon Islands, Somalia)	**Limited Conventional Conflict** (Iraq (2003), South China Sea Dispute)	**Major Threat of War** (North Korea-South Korea, China-Taiwan)
Future Submarines							
	Anti-ship	0	1	4	4	10	10
	Anti-submarine	0	0	2	3	10	10
	Strategic strike	0	5	5	5	10	10
	Mine detection	0	1	0	5	8	8
	Mine-laying operations	0	0	0	1	8	8
	Intelligence Collection	2	2	2	6	10	9
	Supporting Special Forces	3	3	3	7	9	9
	Gathering Battlespace data	6	5	5	7	10	10
Amphibious Ship (with full embarkation force)							
	Amphibious Assault	0	4	4	10	10	10
	Amphibious Raid	0	4	4	9	9	9
	Amphibious Demonstra-tion	0	3	4	9	9	9
	Amphibious Withdrawal	10	4	4	9	9	9
	Amphibious Support to Other Operations	10	7	7	7	5	5
Joint Strike Fighter							
	Air-to-Air	0	0	0	3	10	10
	Intelligence, Surveillance, Reconnaiss-ance (ISR)	2	2	5	5	9	9
	Deep Strike	0	6	6	2	10	10
	Close Air Support	0	5	5	2	10	10
	Electronic Warfare	0	1	2	2	9	9
	Suppression of Enemy Air Defence / Destruction of Enemy Air Defence (SEAD / DEAD)	0	0	2	2	9	9

Red: Unsuitable Capability, 0-2; Yellow: Moderately Unsuitable Capability, 3-5; Green: Sufficiently Suitable Capability, 6-7; Blue: Exceptionally Suitable Capability, 8-10

Table 2 (Continued). *Defence 2009* Planned Capabilities' Applicability to Specific Contingencies

Scenarios / Capabilities	Sub-capabilities	**Humanitarian Assistance** (Sumatra Tsunami, Queensland Flood 2010/11)	**Counter-Terrorism** (Bali, Afghanistan)	**Counter-Insurgency** (Afghanistan, Iraq post-2004)	**Peace Enforcement** (East Timor, Solomon Islands, Somalia)	**Limited Conventional Conflict** (Iraq (2003), South China Sea Dispute)	**Major Threat of War** (North Korea-South Korea, China-Taiwan)
Future Frigates							
	Anti-Submarine	0	0	2	3	10	10
	Strategic Strike	0	5	5	5	10	10
Bridging Air Combat Capability							
	Air-to-Air	0	0	0	3	10	10
	Intelligence, Surveillance, Reconnaiss-ance (ISR)	2	2	5	5	9	9
	Close Air Support	0	5	5	2	10	10
Air Warfare Destroyer w/SM-6							
	Air Defence (aircraft)	0	0	5	5	10	10
	In-theatre Missile Defence	0	1	1	3	10	10
	Coordinated Air Picture	3	5	4	8	10	10
ANZAC Ship Upgrade							
	Anti-ship	0	0	0	4	10	10
	Anti-Submarine	0	0	0	3	10	10
Offshore Combatant Vessels							
	Offshore/ littoral patrolling	10	3	3	9	8	7
	Mine counter measures	1	2	2	9	8	7
	Hydro-graphic	4	0	0	2	2	2
	Oceano-graphic	0	0	0	2	2	2
Future Naval Aviation Combat System (ASW)							
	Anti-submarine	0	0	2	3	10	8
	Air-to-Surface Missile Strike	0	3	3	3	7	7

Red: Unsuitable Capability, 0-2; Yellow: Moderately Unsuitable Capability, 3-5; Green: Sufficiently Suitable Capability, 6-7; Blue: Exceptionally Suitable Capability, 8-10

Table 3. Enablers: *Defence 2009* Planned Capabilities' Applicability to Specific Contingencies

Scenarios / Capabilities	Sub-capabilities	**Humanitarian Assistance** (Sumatra Tsunami, Queensland Flood 2010/11)	**Counter-Terrorism** (Bali, Afghanistan)	**Counter-Insurgency** (Afghanistan, Iraq post-2004)	**Peace Enforcement** (East Timor, Solomon Island, Somalia)	**Limited Conventional Conflict** (Iraq (2003), South China Sea Dispute)	**Major Threat of War** (North Korea-South Korea, China-Taiwan,)
Multi-role Helicopters							
	Troop & Supply Lift	10	10	10	10	10	10
Multi-role Tanker-Transport Aircraft							
	Air-to-Air Refueling	8	8	8	8	10	10
	Troop Transport	8	9	9	10	10	10
Airborne Early Warning and Control Aircraft							
	Control / Coordinate Aircraft	7	8	8	9	10	10
	Air Situational Awareness	8	8	8	9	10	10
	Weapons System Cueing	0	8	8	9	10	10
Multi-Mission Unmanned Aircraft System							
	Persistence Surveillance	10	10	10	10	10	10
Battlefield Airlift—additional C-130J							
	Intra-Theatre Lift	8	8	8	9	9	9
Light Tactical Fixed-wing Transport Aircraft							
	Intra-Theatre Lift	8	7	7	8	7	7
Land Combat Vehicles							
	Armored Mobility	7	10	10	8	10	10
Overland – Field Vehicles							
	Protected transport	9	8	8	9	7	7

Red: Unsuitable Capability, 0-2; Yellow: Moderately Unsuitable Capability, 3-5; Green: Sufficiently Suitable Capability, 6-7; Blue: Exceptionally Suitable Capability, 8-10

About the Author

Colonel John E. Angevine is a Federal Executive Fellow at Brookings Institution. He has over 27 years of service in the U.S. Army, specialising in aviation operations, aviation combat development, operational-level planning, and strategic intelligence. Serving with the Defence Intelligence Agency (DIA), Colonel Angevine has had a distinguished career as a senior military analyst working North Atlantic Treaty Organization and European defence initiatives, as well as the Balkans War. He led numerous DIA intelligence crisis groups, including Israel-Lebanon 2006 Conflict, Georgia-Russia 2008 Crisis, and several Africa and Latin America humanitarian and conflict issues from 2005 to 2009. Colonel Angevine has done extensive, pioneering work with Australia and the other Commonwealth partners to create and develop the Quadripartite Analytic Collaborative Program and Quadripartite-Space (Q-Space), which permits integrated intelligence analysis. Most recently, he served with United States Forces-Iraq (USF-I) as Director, Directorate for Analysis and Production, providing strategic and theatre-strategic assessments to the Commanding General, USF-I, and directly supported the Iraqi Government's National Reconciliation Program. His operational assignments include Operations HURRICANE ANDREW, PROVIDE COMFORT, and IRAQI FREEDOM. Colonel Angevine graduated from Shippensburg University of Pennsylvania with a bachelor of science in Biology. He holds a master's degree in aeronautical science from Embry-Riddle Aeronautical University and a master's degree in strategic studies from the U.S. Army War College. His military education includes attendance at the U.S. Army Command and Staff College, the Joint Forces Staff College, the U.S. Army War College, and the U.S Army War College U.S. National Security Policy Program.

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