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Army capability review 2010

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This paper provides an overview of the capability of the Australian Army and is an update of a 2008 ASPI paper. Other papers in the 2010 series will update the corresponding reports on Navy, Air Force and C⁴ISR capabilities.

This update at a glance – Army capability since 2008

The ADF is at war—and has been since 2001. It has also been providing troops for regional stabilisation missions on an almost continuous basis since 1999. And, while the Navy and Air Force have played significant roles in operations both in the near region and in the Middle East Area of Operations (MEAO), it is the Army that has provided the bulk of deployed personnel (who have also faced the greatest risks).

Army has performed commendably in raising, training and sustaining deployed forces. However, it has not been without strain—some personnel have been rotated in and out of operations upwards of six times. Some specialist areas (such as engineers and Special Forces) have experienced proportionally greater demands than the general infantry. While there seems little danger of Army 'breaking'—Australia's deployments are a smaller percentage of the overall force than other allied nations—some careful management has been required.

Table 1: Significant Army capability changes since 2008

Capability	Change	Comments
Force protection and protected mobility	↑	Through upgraded M113 armoured personnel carrier and (more significantly) additional *Bushmaster* armoured vehicles.
Connectivity	↑	Connectivity and bandwidth has been improved through a combination of bespoke solutions and leased commercial systems.
Tactical airlift	↓	Retirement of the RAAF's *Caribou* fleet has seen a decline in this capability across the ADF, especially for operations in PNG. Army's Beech *Super King Air* fixed-wing aircraft have been transferred to Air Force and provide a limited capability.
Tactical ISR	↑	Army now operates a number of small unmanned aerial vehicles (UAVs). As well, the Air Force and Army operate leased *Heron* UAVs in support of operations in Afghanistan.

Operational exigencies have resulted in a number of force protection, communications, mobility and Intelligence, Surveillance and Reconnaissance (ISR) capabilities being developed and deployed under rapid-acquisition processes. These have usually been successful in providing deployed forces with valuable capability. However, the continuing evolution of in-theatre threats—especially improvised explosive devices (IEDs) and indirect fire from rockets and mortars—has resulted in the recent announcement of a $1.1 billion investment in force protection technologies and equipment.

The Defence White Paper

The 2009 Defence White Paper contained little in the way of surprises regarding the Army. It concluded that 'no major change to the size and structure of the Army is warranted'. It included a number of capability improvements (see Table 2) but no major new initiatives—most of the projects were already in train.

The White Paper did rule out a class of land operations as force structure determinants. To avoid the risk of unacceptably high numbers of casualties, the Australian Army will not generally be required to deploy to the Middle East, or regions such as Central and South Asia or Africa, in circumstances where it has to engage in ground operations against heavily armed adversaries located in crowded urban environments.

Table 2: Major Army and land initiatives in the 2009 Defence White Paper and Defence Capability Plan (DCP)

Project	Number	Comments
Artillery replacement - towed	35	Approved in October 2009. Lightweight 155mm towed howitzers will be acquired through the US government.
Self-propelled 155mm artillery	18 - 24	Tenders for this acquisition closed in April 2008 but no decision has been announced. This project may be deferred.
ASLAV enhancement	113	Approved in May 2010, this project will upgrade the Australian Light Armoured vehicle fleet. As well as structural improvements, they will offer better ballistic, fragmentation and blast protection.
Ground-based air defence		Described in the DCP as being for defence against aircraft, rockets, artillery and mortars. Listed as 'beyond 2013', some elements may be brought forward as part of the force protection initiative announced recently.
Land combat vehicles		Designed to enhance or replace the capabilities provided by the M113 armoured personnel carrier, the ASLAV and *Bushmaster* armoured vehicles. This project is planned to go to government 'after 2016'.
Medium-lift helicopters	7	The current fleet of six ageing CH-47D *Chinooks* will be replaced by much-improved F models from 2014 onwards.

Overview

Structure

With a 2010–11 budget year plan for 28,811 permanent and almost 17,000 part-time Reserve personnel, the Australian Army is small by regional standards and tiny given the size of our continent. Structured as a standing force rather than a mobilisation base, the Army is designed to be able to deploy and sustain a brigade group of around 3,000 troops indefinitely while retaining the capacity to deploy a battalion group of around 1,000 temporarily. Larger scale deployments are possible for a limited duration—as occurred to East Timor in 1999.

At its core, the permanent Australian Army is currently made up of seven infantry battalions, two cavalry regiments, one armoured regiment, one commando regiment and a Special Air Service regiment. In order to increase the Army's ability to deploy and sustain forces, two additional battalions were added under an Enhanced Land Force program initiated by the previous government—a move confirmed in last year's White Paper and already well advanced towards being operationally deployable. This will see the full-time Army expand to around 30,500 personnel in the next few years.

At the same time, the land force is being re-equipped with better armoured mobility and networked communications under the Hardened and Networked Army (HNA) program. The HNA program aims to structure and equip the Army so it can fight in complex terrain and contribute to coalition operations of up to medium intensity. This will be achieved through increased firepower, protected mobility and network connectivity. The HNA program aims to structure and equip the Army so it can 'fight in complex terrain and contribute to coalition operations of up to medium intensity'.[1]

These troops are supported by one aviation brigade, three artillery regiments, three combat engineer regiments and one air defence regiment, plus a comprehensive range of combat support and logistic support elements. In reality, many of the elements established as regiments are actually of a smaller scale. But it is not envisaged that Australian Army formations will deploy as regiments. Instead, the concept is that elements of various combat and combat support units will be tailored into reconfigurable combined-arms 'battlegroups', commanded by battalion/regiment level headquarters, as mission needs dictate. The HNA process will provide additional flexibility for the formation of such battle groups.

The Army Reserve fulfils several roles at present. It provides individual personnel to help round-out permanent force deployments, it contributes elements to both frontline operations in Afghanistan, and to low-intensity regional stabilisation operations such as East Timor and the Solomon Islands, and it delivers a modest capacity to assist with domestic security.

Legislation allows the Reserve to be called out for full-time service in a broad range of circumstances and ex-permanent force personnel remain liable for call-out for five years after separation. However, neither plans nor adequate equipment holdings exist for a large scale mobilisation of the Reserve despite it retaining a structure of six nascent brigades.

Principal formations of the permanent Army include the mechanised 1st Brigade in Darwin and Adelaide, the light 3rd Brigade in Townsville and the motorised 7th Brigade in Brisbane. Each of these three brigades contains a mixture of capabilities including infantry, artillery, cavalry, engineer and logistics units. The 16th Brigade (aviation) has elements in Townsville, Sydney, Oakey and Darwin. The recently established 6th Brigade (Combat Support and Intelligence, Surveillance, Target Acquisition and Reconnaissance)[2] has a mix of capabilities in Sydney and Brisbane. The 17th (Combat Service Support)[3] Brigade has its headquarters in Sydney and a mix of Combat Service Support capabilities located around the

country. Reserve formations are scattered around the country broadly in line with population centres. (The ASPI *Australian Defence Almanac 2010–2011* will be published in late June and contains much more detail with respect to Army sub-units and their roles.)

Like the other services, the ability to collect, manipulate and disseminate intelligence, tactical information and positional data is critical to Army's effectiveness. These issues will be developed further in the ASPI paper on the ADF's C^{4}ISR capability to follow in this series.

Doctrine and the White Paper

Army has recently published a conceptual framework for the force development of the Australian Army: 'Adaptive Campaigning—future land operating concept'.[4] Seemingly heavily influenced by recent operations in Iraq and Afghanistan, it identifies several trends in modern warfare:

- retreat [by adversaries] into complex terrain
- disaggregation of the battlespace
- readily transferrable highly lethal weapons
- less decisive combat operations
- battlefields that are more often urban settings than open terrain.

While the HNA and Adaptive Campaigning conceptual frameworks are at least partly consistent, it seems fair to observe that HNA applies primarily to the upper end of the spectrum of modern conflict described in the more recent document. In that context, it is interesting to note that, in one of the only exclusions in the entire document (the other being a nuclear submarine), the Defence White Paper ruled out with a very firm hand one class of land operations:

> The government has decided that it is not a principal task for the Australian Defence Force (ADF) to be generally prepared to deploy to the Middle East, or regions such as Central and South Asia or Africa, in circumstances where it has to engage in ground operations against heavily armed adversaries located in crowded urban environments. This entails a requirement to engage in high-intensity close combat which brings with it the risk of an unsustainable level of casualties for an army the size of Australia's.

This poses some questions for the residual HNA projects (such as self-propelled artillery) still working their way through the acquisition system. As noted earlier, the tenders for self-propelled artillery closed over two years ago, with no decision being announced.

Capability

Army's greatest challenge at the moment is sustaining its deployed forces. As noted earlier, almost decade-long deployments have meant that some personnel have been rotated into theatre repeatedly. This is especially true of specialist troops, including engineers, Commandos and the Special Air Services Regiment. In order to consolidate its capability to sustain deployments over long periods while retaining an ability to provide additional concurrent deployments if required, some internal 'rebalancing' of Army's structure is being planned. Areas where capability could usefully be augmented or expanded include; a greater (and protected) combat engineer capability, greater capacity for human intelligence and civic-military cooperation, and the scale and manning of logistics elements. (ASPI will address this issue at length in the first half of 2011 with a paper on the future of Australia's land forces.)

Army also has to grapple with the development of a joint amphibious capability when the Navy's two new amphibious vessels are delivered around the middle of

the decade. While Army has experience on a smaller scale through deployments on HMA ships *Tobruk, Manoora* and *Kanimbla*, the new *Canberra* class will allow operations of a different magnitude. Army may have to develop some of the doctrine and operational practices of Marine forces. There are some demanding scenarios at the upper end of the White Paper's military strategies, which would require the deployment of one or more battle groups well forward of Army's Australian bases. Developing the procedures and skills required while supporting current operations will be testing.

Arguably, the most significant current equipment shortfall for Army is the lack of a modern ground-based air defence that can deploy with land units. However, the current operations that Army is involved in do not require such a capability due to the lack of a credible air threat. As a higher priority, current plans will provide close-range protection from rockets, artillery and mortar fire. The replacement of existing short-range anti-aircraft equipment is planned for about a decade from now, but there are no plans for wide-area long-range air defence that can deploy integrally with land units.

Other major decisions and issues for consideration in the short to medium term include:

- the choice of self-propelled artillery systems
- the 'bedding down' into service of the *Tiger* armed reconnaissance helicopter and MRH-90 multi-role helicopters
- modernisation of battlefield communication systems and the progressive networking of land forces
- acquisition of light mobile protection vehicles.

In the longer term, a critical point will be reached with the replacement of Army's existing fleets of protected mobility vehicles. There are a range of possible options for each vehicle type, each offering a different combination and level of firepower and protection. There is a trend towards increased protection against IEDs and other threats. Greater protection generally comes at a greater cost, and the ability of Army to replace its entire fleet will depend on the availability of sufficient resources—which are not guaranteed given the White Paper 2009's naval initiatives.

Capability summary

Individual components of Army capability are examined below. Though a force element based examination is unavoidable, it is important to note that the Army prepares for combined-arms operations that integrate and closely coordinate the full range of land capabilities.

Infantry

As a light to medium weight force, the Australian Army is built around its infantry. As part of an integrated land force, infantry can be employed with other elements (armour, artillery, engineers etc) to form combined arms teams.

Budget cuts in the early 1990s forced a reduction in the number of permanent infantry battalions from six to four. However, in response to the demands of East Timor in 1999, two battalions were subsequently reinstated. Then, in 2001, one of the battalions (4RAR) was converted to a commando unit and transferred to Special Forces command. The previous government announced the Enhanced Land Force (ELF) initiative in 2007, which would see the raising of two additional infantry battalions—a process now well underway. The ELF is running in conjunction with the earlier HNA. The net result is that the parachute battalion

(3RAR) will remain a light infantry battalion with a parachute capability and a further mechanised infantry battalion and a motorised infantry battalion will be raised. (The parachute capability is subject to further review and it remains to be seen if the parachute role will remain in 3 RAR or transition to special operations units only).

When the HNA/ELF program is completed, the Army's infantry structure will consist of:

- three light infantry battalions (1RAR, 2RAR and 3RAR)
- two motorised battalions (6RAR and 8/9RAR)
- two mechanised battalions (5RAR and 7RAR).

Infantry weapons and equipment are of a similar standard to that of other advanced Western armies. In recent years, a priority has been placed on acquiring protected mobility, and recent operations have seen the rapid acquisition of some items, including specialist clothing, body armour and man-portable *Javelin* anti-armour missiles. Planned acquisitions of infantry equipment in the next decade include new mortars, direct fire weapons and small arms. A further $1+ billion has been programmed to boost the capabilities of the individual combat soldier under the heading of 'soldier enhancement'.

Special Forces

Over the past decade, Special Forces have been expanded and unified under a separate command within Army. Headquartered in Canberra and Bungendore, the key elements of Special Forces include the Special Air Service Regiment (SASR) in Western Australia and a commando regiment, Special Forces Training Centre, Special Operations Logistic Squadron and Incident Response Regiment (IRR) in Sydney. A Reserve commando regiment is split between Sydney and Melbourne.

Well equipped and able to deploy by land, sea or air, Special Forces provide a flexible range of capabilities from long-range patrol through to strike raids and special recovery operations. An expanded role in domestic counter-terrorism emerged for Special Forces after 2001 and a standing squadron-strength Tactical Assault Group is now maintained on both the East and West coasts. The IRR provides a capacity to respond to a nuclear, chemical, biological or radiological event within Australia.

Armour

Tanks

Army's tank force consists of fifty-nine refurbished *Abrams* M1A1-AIM tanks, acquired from the United States at a cost of $560 million. The *Abrams* replaced the *Leopard* tank which had become vulnerable due to the proliferation of shoulder-fired anti-armour weapons in our region. Over time, the trend in Army's tank fleet has been towards lower numbers of individually more sophisticated and capable platforms. The fifty-nine *Abrams* replaced 101 *Leopards* which themselves replaced 143 of their predecessor, the Vietnam-era *Centurion*. This trend is not unique to Army—keeping pace with technological developments is costly, which puts stress on the procurement budget. Nonetheless, the scale of armoured support continues to decline—despite the fact that the Army is otherwise expanding.

The *Abrams* M1A1-AIM is one of the more capable variants in the US *Abrams* family, and represents a substantial increase in capability over the *Leopard*. The Australian *Abrams* purchase included advanced features such as the Far Target Locate (FTL) system. The FTL combines the GPS position, orientation of the turret and the range to target given by laser positioning, resulting in an accurate grid position of the target. The enhanced communication and data transfer capabilities of the *Abrams* allows that information to be passed to other friendly units.

The *Abrams* have been the subject of some ill-informed criticism over the years—most often to do with their weight and inferred lack of deployability. In fact, the world market for main battle tanks that are survivable against a range of threats likely to be encountered on the modern battlefield is quite limited, and other credible contenders were of similar or greater weight. The *Abrams* provides good protection against early generation shoulder-fired anti-armour weapons now prevalent in the region but, like all tanks, is more vulnerable to advanced Russian systems proliferating elsewhere, including the Middle East.

Armoured mobility vehicles

The Army operates three types of armoured mobility vehicle; the US designed M113 armoured personnel carrier, the Canadian-built ASLAV light armoured vehicle and the Australian designed *Bushmaster* protected mobility vehicle.

The tracked M113 armoured personnel carrier has been in service with the Australian Army since 1965. The vehicle provides tracked mobility, protection and firepower for up to ten personnel. Of the more than 700 vehicles in inventory, around 430 are to be upgraded and returned to service, with improved armour, firepower, suspension, engine and drive train at a cost of $617 million. After a protracted project, the first upgraded vehicles entered service in late 2007 and they are being progressively delivered, with final deliveries due in October 2011. The upgraded fleet will have the capacity to provide mechanised transport for two battalions plus supporting elements.

Being a tracked vehicle that has variants with a 12.5mm turret gun, the M113 fleet provides good mobility in rough terrain and light firepower. While the upgraded vehicles will protect occupants against small arms, anti-personnel mines, light anti-armour weapons and shrapnel, the vehicle will remain vulnerable to 12.5mm or larger projectiles, medium to heavy anti-armour weapons, large IEDs and anti-armour mines. With the exception of the M1A1 *Abrams* tank, the upgraded M113 is equipped with the best side-blast protected armour of the three armoured vehicles in service with the Australian Army. But, due to the M113's flat-bottom hull design, the vehicle's protection against under-vehicle IED is inferior to more modern hull configurations such as the ASLAV (see below).

Following purchases that commenced in the early 1990s, the Army now has a fleet of 257 ASLAV light armoured vehicles. These 8x8 wheeled quasi-amphibious vehicles provide an armoured reconnaissance and personnel carrier capability sufficient to equip two cavalry regiments. Each vehicle can carry eight troops in the armoured personnel carrier variant or four in the gun variant, which is equipped with a turret mounted 25mm gun. Protection for ASLAV occupants is inferior to that of the M113 due to increased vulnerability to light anti-armour weapons and ballistic projectiles.

ASLAVs have been deployed to the Middle East and Afghanistan since 2004. Operational experience has no doubt influenced the recently-announced decision to up-armour 113 ASLAVs in order to provide better combat protection against ballistic projectiles, fragmentation and blast. (Vehicles in theatre have received 'bar' armour for protection against RPGs[5].) At a cost of $302.8 million, the project is scheduled to begin in 2012, but may be brought forward if circumstances allow.

The most recent addition to the Army's range of armoured vehicles is the *Bushmaster* protected mobility vehicle. After extended delays, hundreds of these vehicles have now been delivered, with a total of 737 on order. The *Bushmaster* has also been sold to the Netherlands and United Kingdom armed forces (as well as the South Australian Forestry Commission). Each of the 4x4 vehicles is capable of carrying up to ten personnel. When complete, the *Bushmaster* fleet will provide mobility adequate for roughly four battalions plus supporting elements.

The *Bushmaster* has inferior mobility over rough terrain compared to the M113 and ASLAV and is not designed as a fighting vehicle. Its roof-mounted machine gun gives it inferior firepower to the ASLAV (although there are variants with the MAG-58 remotely-operated weapons system). However, it has proven to be a rugged and reliable vehicle that provides similar protection to an ASLAV against ballistic projectiles and superior protection against mines and IEDs. For that reason it has been well-suited to the Army's recent operations in Afghanistan.

Taken together, the Army's eventual fleet of over 1,000 armoured vehicles will provide protected mobility and firepower for two cavalry regiments and seven to eight infantry battalions and some supporting elements depending on how assets are allocated. Efforts are underway to improve protection against evolving threats such as IEDs. On current plans, replacement of the M113 and ASLAV fleets will commence in the second half of this decade. (The DCP notes that government consideration will be 'after 2016'.) While it is much too early to identify a replacement vehicle, there is potential for there to be some tension between the protection available from top-end infantry fighting vehicles and the likely levels of funding.

Aviation

Transport

Army no longer operates any fixed-wing aircraft. The Army's air transport capability currently comprises thirty-four *Black Hawk* and six CH-47D *Chinook* helicopters. The *Black Hawk* can carry eight fully-equipped soldiers and the twin-rotor *Chinook* thirty-three. In practice, the resulting deployable single-lift capacity would be enough for several infantry companies but not a battalion.

The *Black Hawks* will be phased out progressively as forty-six MRH-90 troop lift helicopters are progressively delivered to Army and Navy (where they will replace the *Sea Kings*). The European-designed MRH-90 is a medium-lift helicopter with capacity for twelve to fourteen fully-equipped troops. The MRH-90 will come equipped with a modern missile self-defence system and will be capable of operating as an embarked helicopter on the RAN's amphibious vessels. In the 2010–11 financial year, budget estimates are for twenty-three aircraft to fly 3,420 hours.

The six D-model *Chinooks* will be replaced by seven F-model aircraft over the 2014–2017 period. Being essentially 'off-the-shelf' purchases through the United States Foreign Military Sales program, the aircraft will incorporate only minor Australian-specific equipment changes, including crashworthy crew and passenger seating, fitment of Miniguns, and underfloor ballistic protection.

The self-defence suites on Army's *Chinook* helicopters have been progressively improved over the previous couple of years. As well, twelve *Black Hawks* will receive a basic level of self-protection. This is somewhat overdue—while the *Chinooks* have had a workable (but far from optimal) defensive suite, and hence have been able to operate in the relatively permissive air threat environment in Afghanistan, the *Black Hawks* have been unable to be deployed even there. Upgraded aircraft will be equipped with sensors and a countermeasure dispenser tailored for the aircraft's flight characteristics and to the likely threat environment.

Aerial reconnaissance and fire support

Forty-one *Kiowa* light observation helicopters provide the Army with a flexible aerial reconnaissance capability. However, since the retirement of the last six *Iroquois* gunships in 2004, the Army has been without a dedicated aerial fire support platform. The replacement for both capabilities—the '*Tiger*' Armed Reconnaissance

Helicopters (ARH)—was initially due to enter service in financial year 2004–05 but experienced a protracted development and delivery process. Delivery of the final aircraft is expected to occur later this year, with full operational capability not expected until late 2012.

Designed as an anti-tank attack helicopter for the Cold War, the *Tiger* will be a much more capable platform than either the *Kiowa* or *Iroquois* in their respective roles. Inevitably, however, the purchase of only twenty-two aircraft will deliver a reduced rate of effort, more limited concurrency for reconnaissance, and the loss of flexibility provided by the utility *Iroquois*. (Thirty-seven *Kiowas* will be retained as training platforms until a dedicated replacement is acquired.)

Artillery

The Army currently has a total of one hundred and nine 105mm towed Hamel field guns and thirty-six 155 mm towed medium howitzers. Both weapons were acquired in the 1980s. The Hamel guns are divided between Field Regiments attached to 3rd Brigade and 7th Brigade while the medium howitzers are held by a Medium Regiment in 1st Brigade.

The present inventory of guns and howitzers are in the process of being replaced. In keeping with trends for other equipment types, a numerically smaller but qualitatively improved capability will be acquired. Because more than half of the existing guns and howitzers are not in use, the reductions will leave the scale of the permanent Army's artillery capability unchanged. What will be lost is the capacity to expand, although the relegation of existing assets to the Reserve could mitigate this.

The current towed howitzers will be replaced by around eighteen protected self-propelled 155mm howitzers, while the existing 105mm guns will be replaced by thirty-five lightweight towed 155mm howitzers. The 155mm calibre of the replacement pieces will provide greater range—perhaps 30 km rather than 11.5 km for the old 105mm guns.

Indirect fire support can also be provided by mortar tubes. The Army currently has only 81mm man-portable mortars, with a maximum range of around 5 km. A larger mortar (such as a 120mm system) would provide a rapidly deployable indirect fire support asset with a range of 8 km or more (depending on the munitions) and with a much smaller logistics footprint than artillery. The DCP includes a project for a mortar system replacement, to be fielded around 2015, but there is no indication of the type of mortar to be acquired.

Engineers

The Army maintains a large number of engineering capabilities. The heaviest capabilities are the construction engineering units, which can build infrastructure for deployed forces or deliver projects as part of a civil action program—as in Afghanistan today. As an integral part of a combined arms team, combat engineers provide a range of capabilities including bridging, construction of field defences and the elimination of physical obstacles. However, the Army's present combat engineer capability lacks the protection needed to support manoeuvre operations in all circumstances.

Other units are more specialised, such as the IRR that can respond to chemical, biological, radiological and nuclear incidents domestically or in support of deployed forces.

Air defence

Following the retirement of the *Rapier* surface-to-air system in 2005, the Army's air defence capability now comprise a regimental headquarters and two batteries equipped with the short-range RBS-70 system. With a range of 8 km and a ceiling of around 16,000 feet, the man-portable RBS-70 provides local protection against low flying aircraft and helicopters but is ineffective against high altitude aircraft and medium-range stand-off weapons. The RBS-70 system is further limited by employing a laser guided missile that requires manual guidance to intercept.

The DCP includes an enhancement or replacement of the existing RBS-70 system. The 2009 DCP does not include a timeline (other than 'beyond 2013), but previous indications were for a $1 billion project, with a delivery date around 2018. If that is still the case, it should be possible to acquire an improved short- to medium-range system that, nonetheless, will fall well short of a long-range wide-area defence system like the US *Patriot*. Until then, the Army will have to hope that either RAAF or coalition assets are available to protect against an even moderately capable air threat and, even then, the persistence required for 24/7 protection against the full range of air threats (including low-level unmanned aerial vehicles) will be difficult to arrange.

Muddying the waters somewhat, the DCP conflates protection from aircraft with technologies and weapon systems capable of countering rockets, artillery and mortars. These systems are, by definition, short-range systems designed to intercept incoming projectiles and would seem to have little overlap with genuinely medium- to long-range air defence systems. The next DCP, promised for later this year, may shed further light on the subject.

Land transport

All parts of the Army depend extensively on motorised transport and the total fleet of general service vehicles is commensurately large—some 7,000 vehicles and 4,000 trailers. The fleet consists of militarised fleets of light and lightweight *Perentie* Land Rovers, *Unimog* 4 tonne trucks, Mack 8 tonne trucks, International S Liner prime-movers and general service trailers.

Although the extant fleet was purchased progressively between 1959 and 1994, plans for replacement under a single project have been on the books for well over a decade. The intention is a solution based on a common family of vehicles, with the aim of reducing whole-of-life cost, rationalising vehicle types and numbers, incorporating new road safety and legislative design features and bringing together new ideas from industry. Fuel consumption would be an important consideration. In practice, replacing the fleet in a single purchase (or, more accurately, a series of coordinated purchases) has proven difficult and progress has varied by vehicle type.

By mid-2010 a number of Mercedes Benz G-Wagon lightweight vehicles have been acquired (for testing and validation) and contracts have been let for various trailers and modules. Defence anticipates a contract with the winning tender for the medium to heavyweight vehicles being signed by the second half of 2011. (ASPI's 2010–11 *Cost of Defence* Budget Brief contains much more detail.)

An import component of the vehicle fleet is the light protected mobility vehicles (PMV-L). Given the dispersed nature of the threat in environments such as Afghanistan, all vehicles need to provide enhanced protection against ballistic projectiles and blast. Consequently, the light and lightweight vehicle classes will be upgraded with new vehicles with enhanced survivability, mobility, payload carrying capacity and connectivity. In May 2010, the government invited Australian companies to compete against US-sourced vehicles for the provision of up to 1,300

PMV-Ls. These vehicles will be provided to the Army's combat units and Air Force's Airfield Defence Guards.

Taking into account the number of armoured vehicles as well, this means that Army will operate a total approaching eight thousand vehicles. Given the total size of Army, a fleet of this size translates into a demanding maintenance requirement.

Logistics and combat support

The Army has to be able to support a wide range of combat capabilities in adverse environments over large distances. The requisite logistic and combat support capabilities include health, construction, survey, intelligence, surveillance, transport, signals, equipment repair and maintenance, engineering, and the resupply of fuels, stores, munitions, rations and water. A detailed analysis of these many specialised areas is beyond the scope of the broad assessment being attempted here.

The critical question is whether the scale, quality and range of logistic and combat support align with what the Army's combat elements might demand? The answer is a qualified 'yes'. The Army has demonstrated for nearly a decade that it can support simultaneous and far-flung deployments, but it is the support elements that have felt the most strain. Problems with recruitment and retention in some specialist trades remain a concern. And an extended deployment on a larger scale than presently underway would place strain on many support areas—a problem that will only be exacerbated by the addition of two more infantry battalions.

That said, Army has made good progress in the previous decade. By the end of the 1990s, its support capabilities had degraded significantly following an extended period of budget-driven constraints and limited operational demand. After the East Timor deployment in 1999, a higher priority was placed on support capabilities. This saw new investment in a number of areas and the allocation of personnel to remove hollowness in support units. As a result, the Army of 2010 is much better placed to support and sustain deployments than it was a decade earlier.

To alleviate the current strains, there are essentially two options (which are not mutually exclusive). Army could rebalance its forces to provide greater depth and sustainability and/or it could make more extensive use of the private sector. Over the last several years, the ADF has employed private sector support in East Timor, Solomon Islands, Iraq and Afghanistan. This has helped to reduce the demands made on Army's organic support capabilities. Generally speaking, the ADF has learnt how to make good use of private contractors where operationally feasible to do so but continues to resist taking the next step, which is to engage the private sector on a stand-by basis, as is routine practice for the US and UK military.

Civic-military operations

As the 'boots on the ground' in operations around the globe, the Army very often finds itself working within local communities. Recent operations in East Timor, Solomon Islands, Iraq and Afghanistan prove that the Army can do so effectively. While the enduring good nature of the Australian soldier has no doubt played a big role in these operations, there was also a high degree of conscious effort to build and maintain constructive relations. Doing so requires a range of human intelligence, language, and specialist communication and liaison skills.

While the Army has adapted quickly to develop these sorts of capabilities as demands have arisen, it is an area where further development and refinement will be necessary if the recent pattern of deployments continues. As well, recent experience suggests that Army will have to further develop the skills required to work with other arms of government, and with civilian NGOs in complex environments.

Endnotes

1 *The hardened and networked Army*, Australian Government, Canberra, 2005. Available at http://www.defence.gov.au/update2005/defence_update_factsheet.pdf

2 Provides force-level surveillance and target acquisition, electronic warfare, intelligence, force-level construction engineer support, ground-based air defence weapon systems to defend airspace and mobile surveillance and reconnaissance forces in support of the national surveillance effort.

3 Provides operational-level combat service support forces with integral command and control, communications, supply chain management and distribution capabilities. This includes: water and beach operations, air dispatch and parachute rigging, health and psychological support, deployed personnel support and force preparation, and military police.

4 *Army's future land operating concept*, Army Headquarters, Canberra, September 2009. Available at http://www.defence.gov.au/ARMY/docs/adaptive_campaigning-future_land_operating_concept.pdf

5 RPG is an acronym from the Russian term *ручной противотанковый гранатомёт* – 'hand-held anti-armour grenade launcher', not the commonly-used 'rocket-propelled grenade'.

About the Author

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