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# ***Countering the improvised explosive devices threat<sup>1</sup>***

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Australian Defence Force Counter-IED Task Force

*The improvised explosive device (IED) has become an enemy weapon of choice in the urban guerrilla warfare being waged against coalition forces in Iraq and Afghanistan. The Australian Defence Force has formed a counter-IED task force to study this development and to devise counter measures. In this paper, the nature of the threat is explained and actions being taken to counter it are outlined.*

### **Introduction**

Coalition Force operations in Iraq and Afghanistan in recent years have featured a new form of asymmetric warfare, with insurgents often attacking vehicles and targeting dismounted patrols with improvised explosive devices (IEDs). Footage of Coalition Force soldiers targeted in the attacks is also readily available on easily-accessible websites, as insurgents use the internet to gain support and quickly disseminate news of their successes. Compared to conventional weaponry, IEDs are relatively cheap and easy to use – instructions on how to make and employ these weapons are circulated easily. In an era when Coalition Force personnel face adaptive and resolute enemies, the IED has emerged as an enemy weapon of choice. Globalisation and technological advances allow the enemy to communicate with increasing ease and to transfer information and knowledge faster than ever before, leading to increased use of IEDs.

While IEDs are not a new phenomenon, their increased deployment over the past few years has compounded an infinitely more complex type of warfare which is taking place in an urban environment, often amongst the civilian population. The insurgent 'blends in' with non-combatants and is not easily recognisable. General Rupert Smith has summarised this succinctly, saying that our adversaries now are 'of and amongst the people'<sup>3</sup>. Supporting this definition of irregular warfare, it is becoming evident that conventional armies are being targeted by resourceful enemies who use classic insurgent tactics and cheap IEDs for strategic effect in order to weaken Western willpower.

IEDs have various definitions – at times they are considered to be mines, booby traps or other items of ordnance. The agreed North Atlantic Treaty Organisation definition, to which Australia also subscribes, is: "A device placed or fabricated in an improvised manner, which incorporates destructive materials designed to destroy and harass"<sup>4</sup>.

Like many other nations, the Australian Defence Force (ADF) recognised the potential for Australian casualties from this type of insurgent warfare and that there was a continuing trend in modern warfare towards the use of a networked, asymmetric model. In mid-2006, the ADF formed a dedicated Counter-IED Task Force to better understand the growing trend of insurgent and terrorist use of IEDs as a tactic of choice across the globe. The Counter-IED Task Force is comprised of military, scientific and intelligence experts, many of whom have served in combat zones such as Iraq and Afghanistan. Specific individual skills include explosive ordnance disposal, ammunition technical officer, clearance diving and intelligence.

### **IEDs – a global threat**

IEDs are likely to remain a significant enduring threat to coalition forces. It is generally agreed that the emergence of the IED in recent years as a weapon of choice for insurgents has resulted in operational surprise for many conventional military forces. Despite the past experiences of the British in Northern Ireland and the Israelis in the Lebanon, the ramifications of widespread use of IEDs have only recently become fully appreciated by many other military forces. IEDs have become by far the largest cause of Coalition Force casualties in the Middle East and, as a consequence, there has been significant 'catch up' in expenditure by many nations in an effort to pursue counter-IED structures and technologies. For Australia, this has meant that the ADF has had to 'test and adjust' in its approach to the counter-IED battle. It has focused largely on prevention and protection against the device, better training of our forces and discreetly attacking the IED networks. While the ADF quickly devoted resources to the problem, there still is much to be done to harness all synergies of the Australian Defence Organisation to its solution.

### **Versatile, adaptive and creative enemy**

In Iraq, mobile phone initiation of IEDs has been common and future IED threats could well involve expanded-frequency radio-controlled IEDs. As well as the ongoing exploitation of advanced technology, it is expected insurgents will continue to employ low-technology 'tried and true' methods, such as old-fashioned 'Vietnam era' command-wire and pressure-plate IEDs, to counter

<sup>1</sup>This paper is based on an address to the Institute on 29 April 2008 by Brigadier P. D. Winter, CSC, Commander ADF Counter-IED Task Force, which was attended by 90 members and guests.

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<sup>3</sup>General Sir Rupert Smith (2005). *The Utility of Force – the Art of War in the Modern World* (Penguin Books Ltd: Great Britain).

<sup>4</sup>Military Dictionary: <http://www.answers.com/topic/improved-explosive-device> [downloaded 25 March 2008].

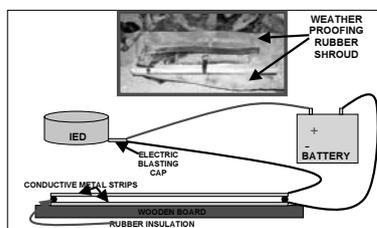
increased ADF force protection measures. Newer forms of attack in Iraq are the explosively-formed projectile and under-belly buried IEDs, which continue to be used against vehicles and icon targets. Buried or under-belly IEDs target the underside of most coalition vehicles, as well as the vehicle's crew compartment. Explosive charges used include artillery munitions, aircraft bombs and bulk explosives, with explosive-charge sizes varying from as little as 20 pounds to over 1000 pounds.



An explosively-formed projectile before (left) and after (right) detonation [Photos: Department of Defence].

In Afghanistan, while the IED threat includes radio-controlled IEDs, low-technology pressure-plate and command-wire IEDs pose a significant threat. These types of devices are difficult to detect and defeat and require great effort to maintain good threat awareness and route clearance drills. Suicide IEDs are also increasing steadily in Afghanistan as the Taliban employs martyrs, rigged with suicide vests, to deliver explosive payloads. Some suicide bombers are as young as twelve.

Since 2003, victim-operated IEDs have become an escalating threat in both the Iraq and Afghanistan theatres. With the increasing effectiveness of coalition tactics, techniques and procedures at mitigating the threat of radio-controlled IEDs, insurgents increasingly turn towards low-technology 'tried and true' initiation methods such as command-wire IEDs and pressure-plate IEDs. In Oruzgan, where the majority of Australian military personnel are operating, pressure-plate IEDs are often employed by insurgents. Pressure-plate IEDs are relatively simple to design, very difficult to detect and are often used in a 'lay and forget' manner, where terrain and conditions are appropriate. They also offer an increased degree of accuracy, as they remove the human element of targeting, and explosive charges can be placed to target the passenger areas of vehicles or dismounted troops patrolling an area.



A victim-operated pressure-plate IED depicted diagrammatically. Insert: photograph of a pressure-plate IED recovered in the Middle East [Diagram and photo: Department of Defence].

Australians operating in the Middle East thus are facing an expanding plethora of technologies. There is a race along the electro-magnetic spectrum, and Coalition Force countermeasures – be they tactics, techniques, procedures or equipment – must be agile and responsive to cope with this expanding threat suite. The scale of IED

development and evolution of systems that occurred over the last 30 years in Northern Ireland has occurred in Iraq in less than three years. Further, the complexity of the modern age, the global reach of terrorists, increasingly porous state borders, and the globalisation of information and technology, are all contributing to the escalation in the number of IEDs being seen worldwide.

The term, IED, can even be misleading as it suggests a well-defined category of weapon, with specific characteristics that may render it vulnerable to countermeasures. It is all too often thought of just as an explosive device hidden on the side of the road. The reality is that most devices incorporate low-technology conventional weapons used in unconventional ways. Alongside the improvised suicide vest and shaped charges, insurgents employ explosive components from projectiles, mortars, rockets and landmines. Combining these with an ever expanding range of initiation methods and tactics, the IED threat is fluid, diverse, ever changing and enduring. Thus, there can be no single 'silver-bullet' solution. Most Coalition Force partners agree that the ADF needs to be agile, adaptive and focused on new methods and technologies to attack the entire network of our future enemies.

#### Coalition efforts: a collaborative approach

The dramatic impact of the IED has led many of our coalition partners to create specific counter-IED task forces. The United States Joint IED Defeat Organisation is the biggest, with an annual budget of billions of dollars and some 450 staff. Forces of similar size to the ADF, such as Canada, have also created new dedicated counter-IED structures, with the notable exception of the United Kingdom, whose previous experiences in Northern Ireland meant they were better prepared for this type of counter insurgency. They have been treating the situation within the Middle East in a 'business as usual' manner – although their tempo has significantly lifted amidst their existing processes.

In Australia, in response to this significant emerging threat, the Chief of the Defence Force directed the Chief of Army to raise the ADF Counter-IED Task Force in March 2006. The Chief of Army, in turn, directed the Counter-IED Task Force to sensibly examine any issue that impacts on our joint counter-IED response. Significantly, the mission covers both the offensive operational environment and support to the civil authorities in the domestic arena – given that it is expected that IEDs will be an enduring feature of warfare for our forces overseas and possibly on mainland Australia. The Counter-IED Task Force role is to exercise technical control over all counter-IED-related activities and facilitate better joint processes and training, whilst highlighting key issues to senior leadership.

#### Australian Defence Force approach

The Counter-IED Task Force operates as a joint 'Tiger Team' across five main cells. The positions are filled by a mix of Navy, Army, Air Force and civilian personnel. An operations and coordination area is engaged with the whole-of-government arena, in particular the state and territory police departments. The Counter-IED Task Force is also heavily involved in providing force protection advice

to Joint Operations Command and the single services, guiding many changes to counter-IED pre-deployment training, and addressing the ADF's needs for tactics, techniques, procedures and doctrine in specific force-protection areas. The Counter-IED Task Force also assists the Explosive Centre in Brisbane, which delivers tactical-level counter-IED training to joint forces. The intelligence cell of the Task Force analyses the IED threat picture, comparing theatre and wider allied IED reporting. The Task Force's science and technology cell is engaged with the Defence Science and Technology Organisation and Army has funded additional positions to focus this cell's efforts in certain areas. The acquisition and strategic engagement representative provides the conduit for the Task Force into the Defence Materiel Organisation (DMO) and the capability development area of the Department of Defence. In addition, DMO has introduced a Land Self Protection System Program Office to support counter-IED work and provide management of new equipment to assist in force protection.

### Responding to the threat – improved technologies

The Counter-IED Task Force employs three lines of operation – train the force; defeat the device; and attack the network. Initially, there has been a focus on defensive measures to protect our force and defeat the device. Whilst this will offer short-term benefits, the real 'battle' against the insurgents and terrorists will be won by attacking the network of bomb makers and financiers, as well as the more immediate requirements of stopping the IED and changing our training culture. In this context, attacking the root-causes of the insurgency and countering proliferation can be considered key force-protection capabilities.

IEDs utilising large buried devices and modified, or home-made, shaped charges have led most coalition forces to re-examine current levels and types of armour protection and the requirement to up-armour their existing fleets, particularly troop-carrying vehicles. For example, the United States mine-resistant ambush protection vehicle will see an investment of over US\$24 billion for 23,200 vehicles over two years and is, under direction from United States Defence Secretary Gates, a top acquisition project. Other nations are also reviewing their vehicle fleets.



*An Australian light armoured vehicle damaged in a vehicle-borne IED attack in Baghdad in 2004  
[Photo: Department of Defence].*

The battle against the IED also requires greater personal protection and further research into the immediate treatment of complex IED and blast injuries and the long-term care of victims. The Counter-IED Task Force is engaged with Defence Health Services to ensure that we are addressing these issues and learning from our allies as they deal with the significant number of soldiers wounded-in-action in IED incidents, including their medical and psychological recovery. The training provided to our soldiers, especially likely first responders such as an explosive ordnance disposal team, is also being reviewed to ensure that any specific treatment required for such IED injuries is up-to-date and 'leading edge'.

A new capability that the Task Force is sponsoring is the ADF's strategic response to the complex nature of the counter-IED battle, through organic weapons technical intelligence (WTI) capabilities. WTI facilitates: accurate technical IED reporting; forensic evidence analysis; device exploitation; analysis of insurgent tactics, techniques and procedures; and counter-measure development. The United Kingdom and the United States have fielded similar capabilities in operations in which ADF members are embedded in the Middle East. The Task Force is upgrading this indigenous ADF capability for operations in Afghanistan and, later, whenever Australia may lead operations in our region; and may involve assistance from the Defence Science and Technology Organisation, the Australian Federal Police and industry. Details of an IED can inform our future force-protection capabilities and lead to new counter-measures or revised tactics, techniques and procedures; or it may highlight areas in which to focus our science and technology efforts. Finally, the WTI process can enable us to identify patterns in insurgent tactics, techniques and procedures, gain biometric data, predict future activity, link groups to particular methods of attack, and ultimately target specific networks with offensive action.

### Conclusion

In an age of increasing asymmetric warfare, the IED is a weapon of choice for anti-coalition forces, particularly in Iraq and Afghanistan. The enemies which ADF personnel are currently facing overseas are resourceful and adaptable. The situation being faced is not dissimilar to that of the insurgent and guerrilla warfare campaigns of earlier wars. The differences, however, come in the rate of IED attacks and new technologies. Through training, attacking the network and defeating the device, the IED threat can be managed. The ADF process to review these current counter-IED lines of operation is ongoing. By developing ADF relationships with coalition partners, engagement on a whole-of-government level, and taking a lead in the counter-IED battle, both regionally and globally, the ADF is actively striving to confront this new form of asymmetric warfare.

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