AFGHANISTAN
Improvised Explosive Devices (IED)

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This document is intended to provide a brief examination of Security related to the use of Improvised Explosive Devices (IED) in Afghanistan. More comprehensive information is available on the Civil-Military Overview (CMO) at www.cimicweb.org. Hyperlinks to original source material are highlighted in blue and underlined in the embedded text. Several articles are linked more than once.

The Improvised Explosive Device, or IED as it is commonly known, is not a new phenomenon on the battlefield. According to historyofwar.org, it has been a widely-used and very effective weapon in many conflicts in the past. IEDs were used by the Irish Republican Army (IRA) during the Troubles in Northern Ireland and also in the Middle East, where the 1983 bombing of the marine barracks in Lebanon claimed over 200 victims, writes CBS News. The Joint IED Defeat Organisation (JIEDDO) states that better access to technology, military grade explosives and the availability of “dual use items” from agriculture and industry has led to an increased use of IEDs in various conflict zones around the world. Generally referred to as the “roadside bomb” and often the weapon of choice for terrorists, insurgents and separatist movements, IEDs have been the major cause of death for coalition troops and civilians in recent conflicts in Afghanistan and Iraq. The problem appears to be getting worse in Afghanistan: IEDs were responsible for 75% more civilian deaths in 2010 compared to the same time period in 2009, according to USA Today.

The IED is effective on a number of levels. Since the device is usually very easy and cheap to make, (a simple pipe bomb, for example), insurgents have the potential to engage an enemy armed with a much larger and more sophisticated military apparatus. As Strategy Page indicates, in a conventional military situation ad hoc “bombers” would be inferior in fire and man power. However, the IED gives its user a certain advantage in that it can be placed and

1 A CMO user account is required to access some of the links in this document.
detonated remotely, or equipped with a trigger device. This allows the bomb maker to be at a safe distance when the device is detonated. In addition to the physical devastation and damage an IED can cause, IED use can also have a strong psychological effect on its victims. This demonstrates the power of the bomb maker, enabling him to cause intense disruption to his enemies while creating exposure and drawing attention to his cause. The impact of IEDs is felt in both military and civilian spheres. They undermine military operations and they limit the progress of convoys or patrols, making them vulnerable to ambushes. In the civilian world, meanwhile, delays caused by long waiting-lines at security checkpoints cost billions of US dollars each year.

IEDs come in many shapes and forms and can consist of almost any material, including agricultural and medical equipment, according to Defense Update. The article states that IED use does not require a high degree of technical knowledge. Instructions obtained over the internet or via a CD-Rom can be enough for an insurgent to create a bomb. This way of operating makes it easier for the bomb-maker to remain undetected on the battlefield or when attacking a high-profile civilian target. IEDs need explosives and a detonator, as well as some sort of power source, and aim to combine blast, fragmentation and armour penetration to create a maximum destructive effect. The American organisation Global Security describes the three main types of IED:

- Package Type IED
- Vehicle Born IED (VBIED)
- Suicide Born IED or Person Born IED

JIEDDO also adds Victim Operated IED (VOIED; pressure plate/switch), Radio Controlled IED (RCIED) and Command Wire IED (CWIED) to this list, which continues to evolve. An IED location can be covered by additional fire support or small arms fire to inflict more casualties on an already vulnerable opponent. Total protection against IEDs is virtually impossible due to their unconventional and unpredictable nature; they can be disguised as, or hidden in, virtually anything, including human beings. The most effective way to counter the threat posed by IEDs is by improving physical protection measures, in addition to employing the correct tactical behavior, something that civilians are often unaware of, making them more vulnerable to attacks.

**IEDs in Afghanistan**

The Afghanistan Conflict Monitor reports that the number of IEDs detonated or defused in July 2010 alone (more than 1300) has increased by 42% compared to July 2009. The article also states that the number of casualties has increased by 68%, with IEDs claiming 53 deaths in July 2010. The armoured protection of vehicles and personnel is the main reason why the number of casualties is not higher. In response to this, the number of Mine Resistant Ambush Protected
(MRAP) vehicles present in Afghanistan has increased from fewer than 3,000 to 9,400 in a year. According to Global Security, the MRAP family of vehicles is designed to protect against IED and mines. According to the US Marines the most common IED is just below the surface of the road, triggered by a pressure plate or wire.

As already mentioned, the effects of IEDs are not limited to coalition and Afghan forces. The number of civilian casualties either killed or maimed by IEDs remains high, and Reuters suggests that IEDs “tend to inflict more harm on civilians than military personnel”, partly because the military is generally better protected by intelligence, armour, and tactics, while the Afghan population is more vulnerable. United Nations Mission in Afghanistan (UNAMA) analysis shows Anti-Government Elements (AGE) were responsible for 2,477 civilian casualties in the first 6 months of 2010. This is partly a result of the fact the AGE use larger and more sophisticated IEDs.

IEDs also present serious challenges for the local population going about their daily business in Afghanistan, says IRIN. Travel to medical facilities, field cultivation, and freedom of movement are severely limited by (the fear of) IEDs and landmines in Afghanistan. Coalition troops are also affected by such limitations on their ability to move freely, possibly leading to tactically dangerous situations and hindering the overall effectiveness of the coalition effort. The steep increase in IED use has forced Afghan and coalition troops to improve their Counter-IED capability by training in detecting and defeating IEDs, providing protection for bodies and vehicles and improving the capability to prevent insurgents from using IEDs. The graphs displayed below show the increase in IED caused deaths as well as a percentage of the total casualty number according toicasualty.org and specified numbers according to JIEDDO.

### IED Deaths by Year in Afghanistan

<table>
<thead>
<tr>
<th>Period</th>
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<th>Pct</th>
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<tr>
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<tr>
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<td>451</td>
<td>60.98</td>
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<tr>
<td>2010</td>
<td>247</td>
<td>427</td>
<td>57.85</td>
</tr>
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### Countering IEDs

The impact and quantity of IEDs in recent conflicts like Iraq and Afghanistan have brought about the need for extensive Counter-IED (C-IED) policy development. NATO has a dedicated C-IED task force which focuses not only on tactical issues like intelligence and electronic warfare, but also looks into concepts, doctrine development, training and experimentation. NATO Allied Command Transformation’s Mobile Advisory Teams (MAT), as part of the C-IED Integrated Project Team, provide hands-on training in detecting and defeating IEDs, while the US Army runs “search and destroy” missions focused on finding and disabling IEDs, according to CBS News.

The general strategy for countering IEDs as adopted by NATO and US Joint Forces Command in Allied Joint Publication AJP3.15 has three main components:

- **Attack/defeat the IED system/network**: this includes actions that disrupt the chain of events leading up to the detonation of an IED (see Figure 2). Intelligence on IED activity plays a major part. This is where winning the “hearts and minds” of the local population is vital

- **Defeat the device**: actual disarming of the IED. Effects are immediate and instantly save lives. Gathered intelligence on the type of IED and tactics used feed into the “attack/defeat the IED system” strategy

- **Training and education**: it is vital for units which are about to deploy to receive the most up-to-date training, including “Lessons Learned” from earlier IED incidents. Training takes place at different tactical levels and includes pre-deployment and in-theatre training. Host nation troops can receive training along with NATO forces.
Both NATO and US Joint Forces Centres of Excellence (COE) continue to develop and provide doctrine and training on countering IEDs on a technical as well as a tactical front. National experts and Task Forces, usually embedded in engineer corps or Explosive Ordnance Disposal (EOD) units, contribute to these COE’s by providing C-IED knowledge and training.

**Technology**

Technology plays a major role in detecting and defeating IEDs. A number of technological development programmes make significant contributions to Counter-IED efforts. For example, the US Army Research Laboratory is developing autonomous robot snakes designed to operate in small areas, identifying IEDs and potentially helping in search and rescue missions, reports MSNBC. Various companies are actively developing technologies that are able to detect IEDs or parts of IEDs, which will hopefully increase safety at airports, large scale events and other high-risk terror targets. These civilian efforts, like the continued development of detection equipment such as X-ray machines as depicted in Figure 3, can also benefit the military and coalition forces, consequently leading to a safer Afghanistan.
Saint Louis Today reports that technology alone is not sufficient to combat the threat posed by IEDs. The IED signature in Afghanistan makes the IED more difficult to detect than the typical IED lay out in Iraq, which was usually an artillery shell. In Afghanistan, the IED signature is often a plastic jug containing homemade explosives which usually consist of fertiliser and fuel. These devices are hard to find because they elude metal detectors, according to the article. Furthermore, the terrain in Afghanistan, with its dirt paths and rain channels, lends itself well to camouflaging IEDs, and as a consequence, the US Army has increased the use of bomb sniffing dogs and ground penetrating radar. The article also emphasises the importance of training, and suggests that troops should not rely purely on technology to counter IED threats; as one officer stated, “technology is great, but it’s still the human that needs to know how and where to deploy it”.

As IEDs and the methods used to deploy them get more sophisticated, Counter-IED tactics and training must develop accordingly in order to create a safer Afghanistan for coalition troops and the local population. Training by coalition forces of Afghan troops are ongoing and will continue to contribute to the vital understanding of Counter-IED activities.

Useful links:

Allied Joint Publication AJP3.15
JIEDDO
Australian C-IED Task Force
NATO
Global Security reference
US Army field manual

The Civil Military Fusion Centre (CFC) is an Information and Knowledge Management organisation focused on improving civil-military interaction, facilitating information sharing and enhancing situational awareness through the web portal, CimicWeb. CFC products are developed with open-source information from governmental organisations, non-governmental organisations, international organisations, academic institutions, media sources and military organisations. By design, CFC products or links to open sourced and independently produced articles do not necessarily represent the opinions, views or official positions of any other organisation.

2 IED signature describes a typical lay out and components of an IED