

In light of the attempted Times Square vehicle bombing during April, Tony Kingham examines the latest vehicle checkpoint solutions which are helping to mitigate the threat



# CHECKPOINT CHALLENGE

As New Yorkers come to terms with the latest attempted attack on their city, the security community is pondering the all-too-familiar problem of how to combat the vehicle-borne IED (VBIED). Although the New York attempt seems to have been

somewhat amateurish, it was only a matter of luck that the bomb was discovered and so didn't go off, killing and injuring large numbers of people. The other crucial factor in this particular case was that the perpetrator had no intention of blowing himself to

pieces along with his vehicle and his victims. If he had, the situation could have been tragically very different.

So the VBIED remains a weapon of choice for terrorists and insurgents worldwide, whether in New York, Glasgow, Baghdad, Islamabad or Kabul.



©Getty Images

The reason is simple: the VBIED offers speed, mobility, payload and relative anonymity. A larger bomb can be delivered direct to the target, giving the perpetrator freedom to change timings, routes and vary vehicles. In short, they are very difficult to spot, anticipate and to stop.

So how do we counter the VBIED? Vehicle checkpoints (VCPs) remain as crucial a tool in the fight against terrorism and insurgency as they were 25 years ago when the author was patrolling the country lanes and villages of South Armagh in Northern Ireland – when VCPs were one of the military's main pre-occupations. But today there is a new and dangerous twist – the appearance of

the suicide bomber. So when it comes to trying to stop a terrorist on the way to their intended target, or maybe just moving men and materials around, the VCP has become in some areas a very dangerous place to be.

Broadly speaking, there are really only two types of VCP – permanent/static and mobile, each serving a specific but overlapping purpose. We shall deal with each in turn. The primary purpose of the permanent VCP is to protect high-value facilities and buildings such as airports, ports, government buildings and so on. The first line of defence, therefore is good intelligence. If a building is being targeted there is a chance that, with trained and observant staff, a good CCTV system monitoring the closest roads and approaches, a licence plate recognition system and perhaps some pattern matching software, potential attackers could be picked up during this reconnaissance stage and possibly during any dry runs they might undertake. Mobile vehicle patrols with licence plate recognition and CCTV in and around the area are also advisable. This has the effect of keeping would-be attackers off guard, but it is important for the patrols not to set patterns or routines.

If it comes to an attack, then the next phase is defence. It is clearly important to give the security team as much time as possible to identify the threat and stop it as far away from the intended target as possible. This means extending the security perimeter as far out as the facility allows, using CCTV to monitor vehicles as they approach, deploying traffic slowing measures such as speed bumps, vehicle crash barriers and chicanes and employing under-vehicle surveillance systems (UVSS) with licence plate recognition.

The next phase will be the manned security checkpoint. It is here that trained staff with good equipment can be most effective, using careful questioning, good profiling techniques and equipment for physical inspection, such as search mirrors, endoscopes, trace swabs and hand-held devices like the Smiths SABRE EXV and 4000 and ICX Technologies' Fido.

Sniffer dogs are particularly effective in identifying explosives, and South African company Mechem suggests their dogs can detect explosives hidden inside a fuel tank. If you have the

budgets, large-scale non-intrusive X-ray scanners that provide 3D images of vehicle contents are another important asset. Manufacturers include companies like Smiths Detection, American Science and Engineering (AS&E), SAIC, L-3, Rapiscan and Nuctech. AS&E have sold many of these systems to the US DoD for use in protecting facilities in Iraq and other VBIED hotspots around the world.

It is at this stage that a potential bomber would be identified and detained – that is if they are not planning to blow themselves up. If the vehicle is being driven by a suicide bomber, any pretence that he is going to stop will probably be over as he exits the traffic calming measures; he will be revving the engine and accelerating towards his intended target. At this point, security personnel will clearly use firearms if they are available; heavy calibre weapons or shotguns being best suited to the job.

The last line of defence is barrier systems, and there are many on the market including pop-up vehicle crash barriers like those made by Frontier Pitts and Heald in the UK, and US companies like B&B ARMR. Temporary systems, such as those from J&S Franklin DefenCell are also available. The latter is a rapidly deployable geotextile cellular system that can be laid out quickly and filled with local aggregate, sand or earth to provide a temporary VBIED barrier and blast protection, which can be removed once threat levels are scaled down.

The mobile VCP is a proactive and more aggressive anti-terror measure, designed to keep the terrorist guessing where the next VCP may appear, thus keeping them off balance. By dominating the ground in the vicinity of potential targets, security personnel can gather intelligence and, with a very big bit of luck, catch the would-be terrorist either during their preparation or on the way to an attack. The equipment required for mobile VCPs is of much the same as for static VCPs, but lighter, portable versions are usually used of which there are many available. Dogs are again particularly useful, as are trace detectors, swabs, UVSS and so on. Electronic scanner companies also offer mobile versions of their vehicle X-ray systems, such as the Smiths HCVM and AS&E's Z Backscatter Van (ZBV). ▶



*Systems like the P.Eye-S allow vehicle inspections without putting personnel at risk*

► This latter is a low-cost, extremely manoeuvrable screening system built into a commercially available delivery van. ZBV gives users a “drive-by” capability which allows one or two operators to conduct X-ray imaging of suspect vehicles and objects while the ZBV drives past. Finally, temporary mobile barriers will be needed as well, and tyre shredders can be used to stop vehicles running the VCP.

Although the mobile VCP is an indispensable tool tactic an anti-terrorist and counter-insurgency campaign, it does leave security personnel conducting inspections dangerously exposed, as we have witnessed so many times in Iraq, Afghanistan and elsewhere. Since the problem of VBIEDs is not going to go away anytime soon, a technology that can positively identify VBIEDs from a safe stand-off position is to many the “silver bullet” in the fight against the threat. To this end Swedish company Portendo, in partnership with the Swedish Defence Research Agency (FOI), have been working to develop just such a product. The result is the P.Eye-S and, although the first finished product

does not roll off the production line until the later part of 2010, in its pre-production form it has been extensively tested by the FOI and a number of other interested agencies from around the world, with impressive results.

The product works is by aiming a laser beam at a particular area on the target object; the reflected light is collected by the apparatus and is analysed using the established Raman scattering method, which provides a unique molecular signature enabling selective identification. These particles are then compared and identified very quickly against an existing database of substances used in the manufacture of explosives. The system can detect and identify a wide range of explosive trace substances of less than 20 micrograms at ranges of 2-5 metres. It can be located at the side of the road and be operated remotely keeping security forces out of harm’s way.

The ultimate goal is obviously to increase the detection range and have a vehicle-mounted device offering operators increased protection, but at this stage the P.Eye-S is not ruggedised enough for use on vehicles as the

vibrations of the engines will adversely affect the results. Portendo has recently signed an agreement with BAE Systems to develop and sell ruggedised versions of the system for use in this role.

As the skills required to assemble VBIEDs continue to spread through the Internet and terrorist training camps, so radicalised individuals are more likely to attempt to use car bombs to attack vulnerable targets, both in the West and countries like Afghanistan and Iraq. Vehicle checkpoints will therefore become an increasingly important defence and deterrence against their use. It is essential that proper investment is made now in the correct equipment and techniques for seeking out these devices, to protect the lives of both the intended targets and the brave men and women who conduct the checkpoint inspections. **1**

**Tony Kingham** is publisher of World Security Report and [www.worldsecurity-index.com](http://www.worldsecurity-index.com), specialising in information products and public relations within the defence and security markets. He is also Media Director for Borderpol.