



ARV teams are trained to respond to armed incidents, and to stop and search suspects, vehicles and homes.

The art of procurement

We all know that our policemen do an increasingly dangerous job, and need specialist equipment to protect them, but what happens when that equipment lets them down? **Lotte Debell** talks to **Nick Barnes** from Hertfordshire Constabulary about his determination to ensure his officers' safety.

Two Armed Response vehicle officers from two different forces recently suffered serious foot and ankle injuries during training for Dynamic Entry. ARV units are teams of uniformed officers who patrol specific areas and are trained to respond to, and control, armed incidents. They also stop and search suspects and vehicles and search premises for armed suspects. The accidents occurred during training using stun grenades, specifically 'NICO 9 bang' grenades. Imagine a lemon with nine pins in it. Throw it and it lands on a pin and goes off, then bounces onto another and goes off again... you get the picture. In both cases the grenades went off right next to the officers' feet, and the blast blew holes in their boots, causing the injuries.

When Nick Barnes, head of procurement and supplies at Hertfordshire Constabulary, heard about the accidents he immediately acted to stop Hertfordshire's ARV officers training in the make of boots that had been worn by the injured officers. 'The boots had been shown to have failed,' says Nick. 'I couldn't allow our officers to continue training in them, knowing that.' So instead he set himself the task of sourcing the market for a boot that was capable of withstanding a 9-bang grenade at such close proximity. There was some concern, he admits, that such a boot did not actually exist, and the only way to find out was to test them.

'The boots that failed were a combination of Cordura and leather and we couldn't be sure which material had failed,' explains Nick. 'In the end we chose four all-leather boots that met the criteria for specialist use: ladder grips, thick soles and protective elements such as toecaps. I asked some officers to wear the boots on duty to find out whether they were sufficiently comfortable and could do the job. As these boots have

to be worn for 12 hours, and sometimes longer, comfort is an important factor.'

Nick did not involve the manufacturers of the boots at any stage of the process. Each boot selected was done so independently, based on his own research into the products on the market.

Once the trial boots had been chosen, Nick persuaded the Hertfordshire ARV teams to test them in a rather unorthodox manner – using actual 9-bang grenades. 'We had to recreate the situation in which the injuries occurred in order to judge the effectiveness of the boots.' This meant ensuring that the grenades would go off as close to the boots as possible. So Nick took one boot from each pair, strapped a grenade to it, which was then electronically ignited. This replicated the worst-case scenario – a grenade going off while actually in contact with an officer's boot. It also put the boots to the test in the most extreme of circumstances.

And the results? Two tests were conducted. After the first, two of the boots had clearly failed.

“We had to recreate the situation in which the injuries occurred in order to judge the boots”

The two that survived were put through a second test, sustaining 18 hits in various ways. Only one boot came through both tests without penetration. Scorched and blistered perhaps, but in tact. This was the Elite 8" Leather WP boot from Magnum, the brand owned by Hi-tech Sports, and it is now the recommended boot for specialist training and operational use in Hertfordshire. The Constabulary is also in the process of reviewing all operational procedures with the

possibility of making the Magnum boot a mandatory item for ARV officers.

Why go to such extreme lengths? For Nick, it is all about providing the best possible protection for his officers, and how else could he be sure that the boots issued to the ARV teams were fit for purpose? It was an expensive test, he acknowledges, but the point he wants to emphasise is that Hertfordshire Constabulary was concerned enough to look at the health and safety issues and ensure that officers are supplied with proper kit. If that meant spending extra on boots and grenades to test them, so be it.

'The job is both ethical and personal with me,' Nick explains. 'If someone has an accident and their kit is ruined but they have survived, hopefully unhurt, then I don't worry about the kit or the cost. The kit has done its job and it needs to be replaced. The officer has been protected and I have done my job. I don't like to see people get hurt and I want to provide them with the best possible protection. Yes, there are budgetary issues, but I don't want injuries so I have to pro-

tect them within budgetary controls.'

As for Magnum, the company couldn't be happier that someone decided to strap a grenade to its boots. 'The first we knew of this test was when Nick contacted us to tell us the result,' says category manager Derek Robertson. 'We are delighted that our product has been proved fit for purpose – although we would never recommend that anyone blow up our boots! We don't test our products to these kind of



► extremes; we can't. Only the people who wear them know the specific conditions in which they will be used and the threats they will face. Magnum boots are all tested to European standards for slip resistance, compression, impact, etc etc, and we are always trying to take them to the next level. From our point of view it is great to get this kind of frontline feedback; it all helps to improve the product.'

Improving products, looking not just at what is available but what is coming in the future, is Nick's guiding philosophy when it comes to procurement. In the time he has been with Hertfordshire Constabulary, innovation, he says, has not been a major factor within the police as whole in terms of finding the best possible solutions to protect officers. Fit for purpose is one thing, the 'best possible' is another.

With his background at a plc – he spent many years at Tibbett & Britten – Nick is used to working within budgets, albeit much bigger ones, and he is used to saving money, making deals, and finding the best products, and he is bringing that experience to his new role at Hertfordshire. 'I am trying to build relationships with suppliers. I want to see the products that are available and which would be suitable for our use, and to get involved in the development of concepts at an earlier stage, to give suppliers an understanding of our requirements.'

Another area on which he recently set his sights is high-visibility. On a dark motorway at night, with someone wearing a high-vis jacket, what can you see? What can the driver see, travelling at 70mph, and how long does it take him to process what he is seeing? These are all questions that Nick has asked himself and he has tried to find the answers. He has accompanied the police high speed patrols at night, and visited 3M's light tunnel, a room that allows you to see how reflective tapes perform and how they interact with garments and environments. 'I was concerned that it took me three minutes to work out what I was seeing in a photo of a road traffic accident (RTA). A driver doesn't have three minutes, he doesn't even have one; he has seconds.'

So, in typical style, Nick went away and thought it over. How could he make his officers



more visible? '3M had mentioned certain products that I was interested in, and I went to some fabric manufacturers and got hold of some samples. I wanted something that could protect against blood-borne pathogens, then I looked at rip-stop, waterproof/breathable and the phosphorescence of fabrics against reflective tape. I looked at the standard (EN 471) and decided that just because there was a Class 3 – the highest level under the standard – this wasn't necessarily a maximum.'

At an RTA, Nick explains, officers must sometimes climb into wrecked vehicles – hence the need for rip-stop – and then they need maximum conspicuity in order to be seen. He compared a daylight view of an officer's uniform, then set about ensuring that the same was visible at night. 'I had one of the fabrics threaded with glass beads for the trousers. By day they look simply like black trousers, smart enough for uniform dress, but at night at an RTA these trousers are transformed to look like fibre optics, covered in little dots of light.'

And he didn't stop there. 'I changed the blue and white hat band to reflective tape so that the head would be visible, put tape around the wrists and collar of the jackets and along the shoulder line, back of the hood, down the side of the legs and looped around the bottom of the trousers.

Left: The Magnum boot survived the tests with blistering and scorching but no penetration. Below: Nick's adjustments to his officers' high-vis gear makes them more visible at night.

Then I accompanied some officers at night on some of the worst roads in the county at the darkest places. What could I see? The entire human outline! In some of the photos I took I could barely see the vehicle because my officers were so bright.'

All this is typical of Nick's determination to provide the best possible protection to his officers. 'It is essential to know your client,' he explains, 'and I have got to know mine: the police officer. I accompany them on their duties because I have to know the threats they face in order to know how best to protect them. It is a challenge. I have to work within the budgets and the rules and maximise them. It's all about spending money wisely to protect my officers, and so I am constantly looking at products, trying to find ways they can be improved for the better. The design concept is huge. For example, take a jacket that has three components. If one of these is not needed, it could be replaced with something that is required, or removed altogether. It is critical to know what products are available and what might come along in the future. Products never stay static, they have to change and develop, and I always have one eye on those that are just around the corner.'

This attitude perhaps typifies the change that has come about in procurement in recent years. As products become more technical, procurement managers have had to become more knowledgeable. 'We come across a lot of procurement officers doing what we do,' says Derek from Magnum, 'and Nick is a part of the change that is taking place at this level. They are more dynamic, they want to get the job done and to get it done properly, trying to protect people as best they can and taking the job to a higher level.' Which surely is good news for wearers everywhere. ■

The Magnum Elite 8" Leather WP

The Elite series from Magnum is a collection of four boots: the Elite 8" Leather WP, the Elite 8" Leather WP ST and the Elite 8" WP and 6" WP. All four are lightweight, athletically styled boots with composite shanks and high-traction, slip-resistant tyre-tread outsoles. The midsole is made from abrasion-resistant polyurethane and the insole features a three-layer foot protection system.

The 8" Leather WP, the boot that survived Nick's rigorous testing, is a full leather boot with a waterproof system that combines a Sympatex bootie with a Dri-Lex lining and incorporates AEGIS Microbe Shield Technology that controls the growth of bacteria and fungus, mould and odours.

A design feature that makes them ideal for ARV teams is the lower, more flexible calf area, making the boots more comfortable to wear while driving. ■