he technologies used in armouring and up-armouring vehicles have moved on rapidly in recent years, and are now widely deployed by police, NGOs, VIPs and border patrol personnel across the world's trouble spots. But it is easy to forget the human element of the equation – specifically the skills of the drivers themselves. Their ability to skilfully manoeuvre these armoured vehicles is essential to thwarting attacks, especially given that up-armoured vehicles are typically much heavier and have a different centre of gravity compared to standard road-going models.

Over the years the conflict in Northern Ireland has never been far from the headlines, and it is therefore not surprising that the Police Service of Northern Ireland (PSNI) has tremendous experience deploying armoured vehicles in the face of terrorism and large-scale public disorder. While the level of terrorism may have fallen sharply since the height of the "troubles", so-called "recreational rioting" is still a regular occurrence in Belfast, and other interface areas across the province – especially in the summer months.

Garrath McCreery, the force's chief inspector in charge of tactical support groups, is well-acquainted with the territory's public order requirements. "Our primary vehicle for deployment in serious disorder is the armoured Land Rover." he said. "On occasions. vehicles are coming under live fire and are attacked with improvised explosive devices, petrol bombs, paint bombs and an array of missiles, including bricks, bottles and heavy pieces of masonry. There have even been concerted attempts to gain access to the interior using sledgehammers and crowbars."

In such testing circumstances, the drivers require extraordinary skills. "They need to be capable of manoeuvring, often in narrow streets and in a context where persons are surrounding them and actively rioting and targeting the vehicles," said McCreery. In addition, drivers are required to deploy their vehicles alongside other police vehicles and to implement tactics which can contain hostile crowds, and to manoeuver in conjunction with officers operating on foot.

McCreery highlighted enhancements made to the PSNI's latest models of armoured Land Rovers, including improved visibility compared to previous iterations. But there are still some issues and McCreery stresses that drivers need to keep their wits about them especially, at night: "There is more limited vision at night when disorder levels can be high and street lights may have been deliberately put out," he said. "Drivers need to have real confidence and experience to remain professional and deliver the tactics." Paint or petrol bombs have in the past been used to obscure the drivers' visibility still further. In spite of this, they must

be able to react in a timely way to rioters running out in front of them and a plethora of obstructions being thrown out into the vehicle's path: "The sorts of things our drivers have to negotiate their way around include wooden pallets, pieces of scaffolding, and on occasions industrial bins," he said.

McCreery reiterated the importance of drivers remaining calm and not overreacting to an attack and, by the same measure, not underreacting where quick action is necessary to take the vehicle out of a given situation and remove it from danger. This, he explained, places a heavy burden of responsibility onto their shoulders: "They are accountable for the safety of the

> AV drivers must have real confidence and experience to remain professional and deliver the tactics."





PSNI AV drivers responding to civil disorder must be able to react effectively to fast-developing situations public around them and the safety of their crew," he said. "Driving in the context of serious disorder isn't an excuse to drive carelessly or dangerously."

While the responsibility for driving armoured vehicles safely remains with the PSNI, Rosie Leech, an inspector with the PSNI's Roads Policing Department, notes that the manufacturing process does not; the police's own workshops have now largely stopped manufacturing bespoke armouring and armoured vehicles. "Now the vast majority of our fleet is being bought with factoryfitted armouring," she explained. This change of tack is having positive repercussions for police drivers, with the most prevalent armoured saloon vehicle for the PSNI, the Vauxhall Jasmine, being a case in point. "There is the confidence that vehicles handle to all intents and purposes like a standard saloon, and that their braking capability is top notch for the weight," said Leech. One practical implication of this is that vehicles are now approved to operate at the posted national speed limit: "Previously we would have imposed speed restrictions of 50 mph, so it gives us a lot more flexibility and options," she concluded.

The CEO of UK-based Intelligent Training International Limited, Alex Bomberg, has strong

views regarding how best to train drivers to safely handle these up-armoured and armoured vehicles. "Many companies concentrate on military driving standards, but actually military driving standards are not particularly good without police driving standards," he said. "We strip people back to the basics and start at safe driving. It doesn't matter whatever you go on to do; assessing the threats and the dangers, thinking about stopping distances and cornering, and reading the road or a track is what it all boils down to."

Bomberg therefore argues that it makes more sense to teach core driving skills to somebody in a normal vehicle before taking them into a high-performance armoured vehicle. "An armoured vehicle is not very easy to throw around because of the weight," he said. "It is a completely different set-up. You have got to start with the basics. When you are teaching people how to drive an armoured vehicle, or to do defensive driving, you need a good, conscientious, driver."

Bomberg is also keen to dispel some of the myths of what constitutes good defensive or evasive driving. "We try to put people through scenarios based on stuff we have seen in the field – the J turns, Y turns, breaking out drills, ramming," he said. "One of the biggest

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Sand trap: driver training must be conducted in conditions similar to those the driver will face in the field

misconceptions of defensive driving is that people think 'handbrake turn', but you should never, ever, use a handbrake turn because what you are doing with a handbrake turn is that you are putting the side of the vehicle, the largest part of the vehicle, facing the threat."

Across the Atlantic, Scott Bryan, assistant chief patrol agent at the US Border Patrol Academy, agreed on the importance of ensuring a firm foundation for those who may be called upon to drive a range of vehicles, including up-armoured, out in the field: "At CBP [Customs and Border Protection] and the Border Patrol Academy we strive to keep our driver training curriculum updated with the latest skills, techniques, and technologies that can benefit agents and the public," he said. While the Border Patrol Academy does not conduct specific training for up-armoured vehicles, Bryan believes that many of the basic skill sets and manoeuvres that are engrained into agents can be utilised when dealing with an up-armoured vehicle. As well as theory in the classroom, more than two-thirds of the training for agents at the Academy is conducted on driving laboratory ranges. After covering initial skill areas such as emergency driving, non-emergency driving and skid control, students receive additional day/night training in elements such as 4x4 off-road operations, vehicle pursuits and offensive driving techniques.

Mike O'Neill, managing director of Optimal Risk Management Ltd, argued there is new level of awareness among the leading security organisations of ensuring AV drivers have the right skillset. "They [organisations] ensure it is taken care of, and it is also something that is required by clients in many areas – for instance if you win a US DOD contract or an equivalent UK contract. Sectors like oil and gas are also very hot on health and safety." On the other hand, O'Neill laments that there are still cases where people simply turn-up and drive armoured vehicles without any prior knowledge or experience. "These days reputable suppliers put a lot of

work into the suspension and braking systems; the real question is whether the operator is really up to the task and understands the difference," he said.

One vehicle manufacturer which has recently ramped up its training Al Khaimah in Dubai is Streit Group. This effort reflects Streit's view that a vehicle's manoeuvrability, and the ability of the driver, is just as important as physical protection levels. "We build a solid platform at all levels but it is down to a skilled driver to know how to use that platform," said Andrew Patterson, the company's general manager for training. "With certain platforms, in certain scenarios, we have discovered that when people don't use them properly the result is firstly, damage to that vehicle and, secondly, being unsafe tactically."

Concerted efforts are now being made to bridge this knowledge gap. "As from March of this year within a contract we are offering our clients a training package of two drivers per vehicle," said Patterson. "We are just finishing building a circuit at Ras Al Khaimah with ramps and sandpits, water troughs, logs, elephant steps, kerb stones, acceleration and deceleration areas, so we have a pretty good training area here." Even with this facility Patterson still envisages the bulk of Streit's training happening off-site in the client's country of origin, however. "There is no point training in the desert for an area of Africa where you might be driving through the jungle," he said.

Great strides have certainly been made in recent years on the type of protection which can be built-in or retrofitted to today's vehicles. Given this, it is imperative that the corresponding skills of the drivers behind the wheel are also up to speed. Whether it is a public disorder scenario, a terrorist attack or a border patrol incident, the last thing anyone needs is for somebody to be in charge of a vehicle who doesn't know how to respond to events and, if necessary, take the vehicle's occupants out of harm's way.

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