

Fighting smarter

It is a much-laboured truism to say that CBRNE is becoming more complicated with the emergence of non-state actors, TICs, forensics, biological detection, explosives, etc, etc. What is more remarkable is the fact that many CBRN/NBC schools have not risen to the task. Much of the skills curriculum is aimed at the lowest common denominator – the donning and doffing, correct use of basic detectors, etc, and that training has not changed, or needed to, in years. It is at the very top level that there is a need for specialist training, in disciplines like forensics or sensitive site exploitation; nature abhors a commercial vacuum, so it is no surprise that companies have sprung up in the last few years offering this high-end capability.

Crossing the Delaware

One of these companies is the Washington Security Group (WSG), located right behind Dulles Airport in Washington DC. WSG has a range of facilities specialising in highly sophisticated CBRN training. Perhaps the most interesting of these is “the box”, which is based at their DC site. This is designed for the specialist team – those tasked with either sensitive site exploitation (SSE) or sensitive site assessment (SSA). The former is the ability to go into a potentially unknown facility, understand the science on show (either high or low science) and safely recover samples and evidence that can successfully be used in a court of law. SSA is the ability to go in and make a field assessment for a commanding officer; this assessment would be based on the impact this equipment might have on the security situation – what the agent is, what purity the agent is, whether it is weaponised, how much might have been produced, what precursors they have got and where from, etc, etc. These are both highly skilled tasks aimed at perhaps the top five per cent of practitioners, and require the sorts of skills that Special



*‘Now what have we here? And I wonder what happens if I just...’
On the job training is not always ideal ©Washington Security*

Forces operatives have. Special Forces (SF) and this top five per cent are the core market for WSG, as Managing Director Sean Miller explained. “We don’t recommend classes higher than 12 as we are focussed on quality not quantity,” he said. “Within that dozen we focus on two to three-man teams. The average student’s background varies from military, government, civilian, PhDs or hard scientists to people with limited scientific experience. We do recommend that there is some type of recruitment and selection, especially some kind of assessment and selection period to be able to see if we can put them through some basic instruction to see whether they have the ability to follow certain procedures or discuss certain topics, discuss retention, etc. The key to a good final product is the recruitment and selection portion of it. If you just send 12 people at it they will come out trained, but if you throw the right 12 people at it they will come out as phenomenal operators.”

The level of scientific and operational understanding that WSG try to foster is very high; from the end of a course the applicants should be able to enter any laboratory – whether it is in a garage or potentially hostile government facility – and quickly and

accurately be able to judge what and how well it is being made and also the time sensitive nature of that intelligence. The fact that drug, explosive and toxic industrial chemical (TIC) labs are all likely to have the same chemicals and equipment suggests the level of scientific capability that the student will eventually walk out with. WSG sets up laboratories using exactly the equipment and chemicals (or rather stimulants labelled as the chemicals) in the way they would be in the threat venue – accurate right down to purchase orders in files, wrappers in bins and electronic communication and data storage. “The complexity of the material and infrastructure that has been put there is detailed and complex,” said Sean Miller. “We try to ensure it is higher [governmental] end, though we do the lower end too, but it is always complete. Unfortunately, many traditional facilities and exercise scenarios provide only the minimums of what you need – laboratory and reaction processes are not complete, there is no paperwork, no invoices, no trash, which are the other trails you can take. Our equipment is fully functional, although some companies use only a portion of the equipment because they feel that is all you need to

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train on, or it is broken so they don't have the security issues we do. People have learned about process, but how often do they see the entire process from beginning to final agent in a compete environment, whether it is house or lab, with the chemicals all set up as well? We try to make it as realistic as possible, so if the scenario calls for an ad hoc kitchen explosive lab or meth labs, then we will do that to the best of our ability and it will look like a real meth lab."

As you might expect the skills involved in this are various, but all high end. Sean Miller explained, "those trained to only do the lower-end, the "home-depot" level, cannot effectively or efficiently exploit a sophisticated lab and conducting a field assessment of that type of laboratory target will be almost impossible. We strive to produce complete operators that can take on the challenge of any target they may encounter."

While WSG has a serious amount of real estate, their facilities are far more modular than you might think. "The Box" is a flexible range of buildings within a large building, composed of panel walls. It can be designed to be any one or two storey building that the scenario demands. If the requirement is for a certain building, the chances are the Box can be designed to look like it; if it needs to be of a "type" then the team have the knowledge to be able to give a stab of what it is most likely to look like. Mr Miller explained the facilities they have. "From an infrastructure perspective we have one full service facility which is this facility in North Virginia – we have classrooms, government staging and storage areas, isolation rooms, four mission planning areas, and a government gear storage area. Then we have the dedicated area for training, which is "the Box" It is designed and set up to be modular – the walls are moveable, the floor plans can change, it can go from 200 to 2,000 square feet, and from a one bed apartment to several thousand square feet of complicated scenarios. It goes from something low end like a residence up to a pharmaceutical company. We do have other areas we train in; we have a place out west that is relatively large – about 130,000 acres or

575 square miles. This is an area where you can do mission rehearsals or build temporary or permanent targets, depending on what you are looking for. We also have a mobile capability where we can take our training programmes on the road to different venues in the US and either train or develop targets."

Donald Wenzlick, Vice President for Training, went into more detail. "Those targets can be built anywhere; we lease facilities, either short medium or long term and build targets in those facilities," he said. "That might be an urban or rural environment – it takes a bit if it is done in an urban environment. Even though they are not real chemicals, it takes a lot of liaison and co-ordination with police, federal, state and local government. They tend to be built into normal communities as you would find them, so if the target is an apartment then you will learn how to do it here. The benefit of the Box is we can move it around; today it is one way, tomorrow it can be a different floorplan. It can be a house, and then a different facility overnight – but if you are doing an exercise and you are hitting an apartment then it should be an apartment in a complex and it needs to be in a well written scenario and scripted accordingly. It isn't just that it needs to be technical, but you also need role players – whether that is scientist, lab technician, delivery man, wife or victim. If you add the human element to it, it opens up another dimension of exploitation and that gets very specific in terms of the rights of that individual and what is admissible in court, so it has to be well tailored. Our goal is that, when they hit a real target, they say they were well prepared, or even over-prepared, because their training was exactly like, or harder than, the target they went up against in real life. Training like this is sparse; usually it is focused on one key element."

While a great deal of WSG's work is with the US military, they are now opening up to worldwide civilian and military customers. Yet this is perhaps an area where some of their SF work tends to complicate matters. Special operations do not worry about things like career development and qualifications – yet if you are a specialised police officer you would like

a recognised qualification after what will be a significant investment in your potential. What qualifications authority, however, is able to adjudicate the work that WSG does, especially when it is so mission and force-tailored? Sean Miller admitted it was a problem. "Currently they get a graduation certificate," he said. "We are discussing various levels of certification, like a Microsoft certification, although it might be best to have an independent body. We have some queries over what the certification is going to be, as the units are so different – law enforcement, intelligence, military, etc. If it is universal it ends up being so basic, as certification has to be at the lowest common denominator. So it is under evaluation and we hope to have an answer soon. There is not a US or international standard organisation for conducting forensic, or SSE of CBRN labs, so there is going to have to be a development of protocols and an independent expert panel to review and validate that these are sound and they can be applied. Any individual organisation can say "Procedure 377 doesn't apply to us; we don't do it that", but does that mean they are not certifiable? It is going to take higher level policy approval."



High end skills are a prerequisite for this sort of training
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Entering the hot zone

At the other end of the Atlantic is a brand new company that is also dealing with this problem, but from a different angle. Hot Zone Solutions (HZS) is a training, equipment and consulting firm built out of the experience of instructors who understand the benefit of training when it involves experience in a real environment, with real agents. Prior to coming to the company, HZS personnel all have experience in international weapons inspection and come from backgrounds as military NBC defence Officers, forensic investigators, emergency responders and from the emergency medical field. They understand the power of live agent training because they all have current, relevant experience working in live agent environments. Live agent training is always a loaded subject – one of those which, as a member of the press, you bring up to get that twitchy look in the eye of the subject – but as politically significant as it might be, it is undeniably effective. While large-scale exercises utilising live chemical agent have potential, the real benefit comes out of small squad lessons, where they can learn confidence in the TTPs, SOPs and, most importantly, the detection and protection equipment. WSG has the business security of knowing very few CBRN or hazmat schools have the ability to copy their SSE training, but HZS understands that while there are a number of training sites that offer live agent training for military units, there are very few that offer tailored products aimed at the civilian market and civilian needs. HZS offers what emergency responders, forensic investigators, medical personnel and security services can't get elsewhere? "Firstly we offer our clients live agent training, not just an on-site simulant product," Peter Stacey of Hot Zone Solutions explained. "In addition, we bring more than 75 years experience of working in the demil, NBC defence, fire and hazmat, forensic and emergency medical fields. We have practical field experience with large quantities of live agents, while many people only have a theoretical knowledge. There are a lot of CBRNE trainers who have little or no practical experience, so there is only limited ability to understand how agents behave



Live agent training may become more freely available ©Hotzone Solutions

at different times of the year, how they behave on different surfaces or even how hand-held detectors really perform with live agent. We offer clients the opportunity to leverage off our knowledge, and to witness the behaviour of CWA under realistic conditions, in the field, not only under a fume-hood. We provide year round training and can show how agents look and behave differently depending on the season. It's not until people really see solid mustard in winter that they appreciate the value of understanding basic physical properties, or how hand-held detectors and monitors easily respond to GB, while they often sit idly by in front of a sample of VX. We offer individual skills-based training in detection, protection and decontamination, right through to scenario-based exercises involving the scene reconnaissance, non-destructive evaluation of chemical containing IEDs, live agent sampling and evidence collection. We also provide laboratory training for analytical skills. Each of us brings a relevant background in these areas and the courses are based around experience we've gained from doing each of these tasks during real situations. In

addition to our live agent training, we also realise the value of on-site, simulant based courses. Simulants allow larger groups of people to be trained, can be conducted at broader locations and are useful to a degree in building confidence in equipment and procedures HZS offers scenario-driven exercises using simulants that have been developed over the last five years to respond to a number of market-leading instruments such as AP2C, CAM and Raid-M. A lot of our current course participants are involved in international disarmament, but only a third come from backgrounds with previous live agent experience. In short periods, we train them to work effectively, not only to follow procedures, but to react to situations they encounter when they are in the presence of large quantities of agent. It's intensive, but rewarding.

While WSG is focused on a highly specialised percentage of the market, HZS has a wider remit – almost all-inclusive. At one end there are international weapons inspectors that want live agent training, and at the other are the military who want the forensic and high-end skills they can

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offer. What, then, is the sweet spot for HZS? "Our primary market is the emergency responder, emergency medical and law enforcement professional," said Peter Stacey. "We are also targeting the major event security market for CBRN training and certification. Security personnel at major events are often the first responders and the decisions they make and the intelligence they gather can have a significant affect on the outcome of an incident because they are there in those vital first few minutes. Our first market is the emergency responder – the specialists such as hazmat technicians, forensic and medical personnel. We also have the military as a target, and are working with alliance partners such as Blucher and Proengin to allow them to offer live agent training to their customers. If a company buys a Proengin detector, for example, their clients can be trained how to actually use it with chemical warfare agents."

The reason live agent training is such a loaded term has to do with accidents that have happened in the past (mainly with the old offensive training programme), and when millions of dollars (and roubles) have been spent on an agent designed to harm humans you want to ensure you don't get too closely acquainted with it. So how is insurance and health and safety of the facility organised? Serving military sign up for this sort of excitement, but for police and other responders there needs to be a high degree of safety. So who's insurance and health and safety guidance are the participants on? "Training does not remove the obligation from an employer to provide a safe place of work, even when using an external training provider" said Peter Stacey. "When clients come to our courses we realise that we must have complete safety management; and safety is our starting point for any decision or course of action. Everything we do is fully documented in our Safety Management System – which meets and exceeds the systems used within the international disarmament community. While police and emergency responders might not actively sign up for this kind of excitement in their daily lives, the current terrorism climate makes them

just as likely to face live agents as a soldier. Our view, which is supported by research, is that training with live agents actually improves safety for the first responders if delivered in a safe way. In approaching safety, we don't only take a qualitative approach to risk assessment. We have quantified the risk through air sampling and analysis at below permissible exposure limits. We have established the level of agents that can be safely used in each practical exercise and we know how to control the hazards. We provide indoor and outdoor training, so we conduct extensive testing in the breathing zone of a respirator and at specific distances from samples to determine where the highest levels are. We know that someone can approach and use a detector to get a good response, but that even at half a metre from the sample the risk is very low. The entire risk assessment is documented and available to our clients prior to training. We also have low instructor-student ratios, with a maximum of 4-1, plus additional supervision staff. While insurance for us is important, we don't want to rely on it – we want to make the workplace safe to begin with."

As opposed to WSG, and largely because of the live agent training, HZS does require a basic qualification of competence before the participants can be enrolled. "Particularly for the civilian market there is a pre-requisite derived from major standards – for example NFPA 472 and 473 are two one of the main ones," said Peter Stacey. "if you are at the responder level then you can attend, assuming you also meet security checks. We are also working on projects for the military that involve not just a standard training package, but products designed to meet specific needs. If the soldiers are raw (or civilian contractors) who have no background, we can provide basic skills training with live agents, but if they wanted to bring in an NBC battalion then we can start it at a higher level."

Yet HZS does have the same sort of problem with qualifications as WSG. "If a person leaves a course designed to meet an NFPA standard, we can say they have met the course objectives and provide a certificate," said Peter Stacey. "It might not certify them for anything, but it does say they have met

a certain level of performance. We provide assessment with our training, and we are currently developing certification programmes. There are established certification programmes within Europe for radiation, and we have Level Three qualified radiological operators who can offer certification for radiological workers and use of non-destructive evaluation tools; so we do offer certificates particularly with x-ray. We provide certificates for everyone that attends our training; and working cooperatively with the Czech live agent training facility, they also provide certificates to people who attend our courses."

Passing out parade

There is no doubt that both companies will be successful with civilian responders; there is a shortage of government institutions who offer chem/bio skills in the same way – the major problem will be budget. While CBRN defence remains the insurance policy for civil agencies, training – which is always an ongoing burden rather than a one-off capital cost like equipment – is often left behind after more pertinent issues, such as public order or hazmat. What is most likely is that those cities that have a particular threat – such as London, Paris, Washington DC, San Francisco, etc – and have the budget to sustain a programme of training will make use of it. The second tier of cities might well make use of it for specific events, such as G8 meetings, large sporting events, elections, etc, but this will be on the "as and when" cycle. The military is a trickier problem; SSE and forensics are highly specialised, to the extent that they are only for specific units when certain missions come up – and those are likely to be fairly rare. What might make the difference is if the military do get more involved in the counter-narcotics mission. This will bring a tempo to the operations far in advance of explosive or TICs workshops; there is unlikely to be a shortage of opium processing labs in Afghanistan, for example. As this mission comes on line, the skills needed for evidence collection and legal sampling will see a demand for the sort of training that both companies provide.