

Lt Col Warren Jolly, Deputy Director Engineering, and Major Shaun Higbid, Staff Officer CBRNE, from the Australian Department of Defence, discuss the creation of new CBRN life in the Australian Army

As Dave Lavers, Director of the Australian CBRN Directorate, pointed out in the last edition, there is a rebirth going on within the Australian Defence Forces (ADF). While there will be many on hand to see this new capability breach, the midwife will probably be the Joint Program 2110 (JP2110). This programme will see the ADF first become on par with many other CBRN nations, through the JP2110 1A part of the programme, and then quickly move on to taking that capability to a more mature standing – JP2110 1B.

Previously, the role of CBRN military responder had been the Incident Response Regiment (IRR), and they will retain an impressive capability augmented by JP3025. But quite what follows in their footsteps is still a little undecided. It could be that the ADF will go either for a broad approach like the US Chemical Corp (on a smaller scale), a dedicated, highly-specialised one like the Germans or the Czechs, or a lighter, more “all-arms” capability like the UK. Currently, this force is probably in its second trimester; we know it is coming – and when – but a lot of the features are still hard to define.

“You are right, that bit is a bit of a grey area,” said Lieutenant Colonel Jolly. “We are doing modelling with Defence Science and Technology (DSTO) and DSTL [the UK’s Defence Science and Technology Laboratory] and this is unfettered by past paradigms; we are remaining open. There are a lot of different factors that need to be considered – such as differences in the operating environments like urban or close terrain – which have an impact on the agent. We are relying heavily on the modelling to steer us to where we are going.”

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While there might be some uncertainty on the physical dimensions, at least we know what branch it is likely to belong to. As opposed to other nations that have a specialist CBRN cadre, the Australian approach will be to attach it to the engineers. It will be the combat engineer units that will get the major benefit of the JP2210 1B project – 1A will be rolled out across the armed forces – and it is this that will allow them to do the missions beyond mere self protection. Major Higbid went into

detail. “Alpha is specifically focused on detection – we have some latest-model detectors,” he said. “A lot of these have not been deployed to everyone, and some have them have been specifically deployed to Special Forces,

so we are trying to deploy them to wider conventional forces. 2110 is about bringing up

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the conventional forces' CBRN capability to a higher level. Detectors in service will have their life extended out to the next ten years, and there are a couple of upgrades we could take. Then IB is focused on the typical capability elements of CBRN defence: detection identification and monitoring, warning and reporting, physical protection (personal and collective), hazard management, containment and decontamination, medical support and training mechanisms."

The engineering branch is not a unique choice; other nations, such as the Danes, have done the same and there are advantages. For example, the commander is used to taking advice from engineering units – but does it take them too far away from the "teeth" and closer to the "tail"? If speed and mobility – the ability to get down-range and make a fast analysis – are crucial, then cavalry (like the French NRBC Regiment) or light infantry are more in line with that mission. Lt Col Jolly disagreed. "In my experience, from lessons learned, operations and history, a mix of different trades – the combined arms team – is what serves you best, and engineers in the past – through engineer reconnaissance – have had such a role," he said. "If speed is part of the requirement then the engineers will have to meet it. With gap-crossing and other skills being an important part of the manoeuvre battlefield, I think that engineers are well-placed to do this kind of recon."

## MARKET SURVEY FOR JOINT PROJECT 2110 PHASE B – CHEMICAL, BIOLOGICAL, RADIOLOGICAL, NUCLEAR DEFENCE (CBRND)

JP 2110 Phase 1B has been raised to update the Australian Defence Force (ADF) Chemical, Biological, Radiological and Nuclear Defence (CBRND) capability. This is to be achieved by developing a CBRND system of systems through the integration of mission systems aligned with the five doctrinal elements of CBRND as follows:

Detection, identification and monitoring; Warning and reporting; Physical protection; Hazard management; and Medical support.

In order to develop the system requirements, project business case, and effective acquisition strategies, it is proposed to distribute a Market Survey to industry for early engagement.

The Market Survey will canvass industry to provide: technically mature exemplar solutions; indicative acquisition and support costs; and to gauge the level of industry capability for systems integration.

The Market Survey will be released to industry in early 2010 concurrently with an industry briefing on the project. To be included on the distribution list for the Survey, please email your details to CBRN.Director@defence.gov.au

For further information on Joint Project 2110, contact Major Shaun Higbid, Staff Officer CBRNE, on +61 2 6265 7850 or email: shaun.higbid@defence.gov.au



IA is all about the common soldier, so it will involve CAM-type systems – small, simple to use and of immediate value to the squad. But if anyone else wants to hear about it, someone needs to get on the radio. This is not to say the project is being rolled out without a great deal of thought going into it. "Overall, we are trying to do things differently; we treating it as a system of systems," said Major Higbid. "Previously, people have gone out and bought a bit of this and one of those; we are trying to work out exactly what we need. CBRN defence is a system. The way I am doing it is via a big wish list of everything that is current – or even technically immature. So we capture everything that is available and we go through and do the analysis to work out when the time is right and whether that technology will be mature enough to use."

All these devices, though, are meant to be at the "keep it simple/stupid (KISS) level – using dosimeters, LCD etc – and this works quite well for chemical and radiological detection, but what happens with bio? Bio is intrinsically not KISS; it requires highly-trained operators even for the "simplest" systems – but where do you pitch it? For many countries, bio has to be something that is done properly – what good is half a warning? – which means mobile labs, SIBA, microbiologists, etc. It can be done at a lower level, but at some point the commander is going to want to know how trustworthy the information from your field detector is – and that means a lab. So what is the 2110 bio vision? "Detect-to-warn for bio is inherently difficult," admitted Major Higbid. "At the high end, the IRR will still look after that, and we will be looking at technical maturity and feasibility of implementing this into conventional forces. We will also be looking into detect-to-treat utilising the "lab in a box". It does exist, so the training burden will be low but we will have some level of detection in the field.

Yet there are two loaded phrases there. One is lab – what level, how many technicians, etc? – and the other is box – how big a box; cardboard or ISO container? Major Higbid elaborated. "It will be smaller than that," he said. "An example would be the Idaho Razor – we are still working out requirements, but that is the ballpark." While a Razor-type instrument is fairly straightforward, it still needs to be treated the right way and have samples collected and inserted correctly. This is something the team has recognised, and as such they will fit it into medical support – one of the medical subsystems is diagnostics – and that will see it treated differently from the other detectors.

The IRR capability Major Higbid mentioned is augmented by the very close relationship they have with DSTO scientists. This is possible because the intelligence the IRR get before they deploy is (one would hope) very specific, allowing them to choose the right scientist for the job. General operations are spread over a far wider area, are less specific and are more open to chance – so can this role transition along with the rest of the capability? "The close relationship between IRR and DSTO will remain," said Lt Col Jolly. "At this stage the focus on IB is taking that capability and spreading it through the wider force. If there is a more technical level of support required it will probably be on the reach-back basis. What we would be doing is trying to simplify as much as possible the

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complexity of the task and looking at getting as much benefit as we can from advances in the capability of the equipment and making complicated jobs quite simple.”

The current lack of visibility does make it difficult to get any traction on things like decontamination (who will have the capability to do thorough decon?) and reconnaissance – what level will it be; will it be mounted, dismounted, etc? Major Higbid admitted they were thinking about mounted CBRN recon, which would be a first for the ADF, but that it is too early to pre-judge. “We are still working through the requirements; it is early days,” he said. “We are talking about putting sensors into more vehicles, but if we are going to do dedicated CBRN recon survey then you need to have a vehicle that provides you with the right level of protection. It is not appropriate to have the driver sitting in MOPP 4; you have to have a dedicated vehicle. Whether that fits in the programme I don’t know yet, but we are going to look at it.”

One of the other aspects of reconnaissance that Dave Lavers mentioned in the previous edition is that of unmanned ground vehicles (UGVs). Yet these come in all shapes and sizes, from the backpack “first look” version, through to the major “wheelbarrow” type capability. What is the requirement and what sort of wheelbase is the ADF looking

at? “There are a lot of options out there with UGVs; we do monitor this, and it is down to the effectiveness of the sensors and how they are deployed,” said Major Higbid. “We will be looking at the kind of vehicle that can carry a recon team and a dedicated unmanned vehicle that can go places that initial indications indicate is not a place we want to send a person. We don’t have a wheelbase in mind; there is a proliferation of unmanned systems out there that gives us a number of options. We have been purchasing a lot of platforms in the C-IED space, and we need to look at the platforms we have to see whether they are an option, or whether we need to buy something new.”

It is not only the equipment and force that is in development, but also the procurement strategy. What the ADF don’t want to do is to have to enter into a myriad of contracts with a myriad of suppliers; they are keen to see whether one key strategic partner (KSP to borrow the UK MoD’s phrase) can bring them a capability, rather than just kit. The first stage of this is that the team will be doing a market survey to map exactly what is out there, and hold it up to their requirements. “[A KSP] is a possibility, and that is what the market survey is for – to work out what industry is capable of,” said Major Higbid. “Historically, they have looked after one element, such as decon or protection, so it would be

interesting to see what industry can come up with. We are trying to do smart procurement, so we won’t necessarily do huge buys of suits that end up on shelves. We will want a good turnover of stock, and are looking at what industry could provide should we ramp up.”

JP2110 is the ADF’s longed-for CBRN child; it will finally match the soldierly with the technical and scientific CBRN capability, which traditionally was at a far higher standard. As such, the team is keen to ensure they get it right – there are no second chances, JP2110 will be the foundation that everything else rests on – and it is reaching out to all industry to try and map out what is possible. All interested parties need to get involved in next year’s market survey’s (see the ADF advert on p.12). It will be interesting to see what impact a CBRN ADF will have on the region; with the exception of Singapore there isn’t really a CBRN-capable force until you get to China and Japan. Australia tends to force-protect a great deal, so there is a strong likelihood that, once they are equipped with JP2110, they may get invited by other nations to help them out. Undoubtedly the highly competent IRR would be in the first wave, but the balance of the task will fall on the combat engineer regiments and, with a first-gate approval in 2011 for 1B, this job will be coming sooner rather than later.



*Which way now? Much of the new capability is still being defined. ©ADF*

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