

FOI-ling the terrorist

CGN: Can you tell us the role that FOI have in CBRN defence? Are you just the research arm of the military forces or do you have a wide role in Sweden's CBRN defence capability?

AB: FOI is a governmental institute belonging to the MoD in Sweden and our main task is to provide research for the armed forces in Sweden – but we also provide support for the civilian society and crisis management for the civilian society. We support the civil authority in Sweden on chemical disasters and the crisis management authorities and also the health care ones. We support both the military and civilian forces with our expertise and laboratory capability. In terms of expertise, we would advise how to handle and manage different types of resources and in the CBRN field it is mostly chemical disasters and problems with radiological outlets. These are the main tasks with which we support the board of health and welfare and SEMA – with whom we work very closely.

CGN: You recently announced the launch of your Level 3+ lab. Can you tell us a little about that and how it will support Swedish capability?

AB: We have a Level 3+ lab in Umea, and as a 3+ it means we can work with Level 4 organisms in a hood. We also have access to a Level 4 lab in the Institute for Infectious Diseases if we want to do further testing. This means we have the ability to study and create vaccines for the most dangerous micro organisms like the haemorrhagic agents Ebola and Marburg, and also things like anthrax.

CGN: Do you find the work that the civilian and military forces ask you for is different? Or do they want the same but presented in a different way – one for urban settings, one ruggedised for the battlefield... How close are their requirements moving?

AB: There are both similarities and differences. For the military, the main issues revolve around how to protect the soldiers

CBW Gothenburg News (CGN) talks to Professor Anders Bucht, Research Director at the Swedish Research Agency FOI, about the work they are doing in CBRN defence



from threats during international missions. The main task for the armed forces is to go abroad and act in a potentially hostile environment in countries where there might also be natural biological threats, such as Africa or the Middle East. These threats and risks are different to the ones we would traditionally find in the Swedish borderline.

The civil force's main role is to protect the population within the country, and there are some differences in risks to CBRN exposures. At the homeland level we are looking at risks of chemical disasters, explosions or the movement of toxic industrial chemicals (TICs) for industrial purposes. In other countries that the military deploy to there are other environmental pollutants, for example. Also, the risk of toxic or emerging diseases in the third world is far

more prevalent. These need to be dealt with in some way. There are many differences, but we are in the field of environmental health risk both for military and civilian so there are also similarities as well as the differences. When you come to CWA and BWA there is also a threat in the homeland which is quite similar to what we encounter on

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international operations, so the differences tend to be on the industrial chemical side.

CGN: One of the major considerations would seem to be biological agents. Have you been approached by both military and civilian forces to get a workable bio detector – or are their theatres too different?

AB: The desire comes mainly from the armed forces. The primary interest comes from them and they want to place emphasis on research and development for bio detectors and the need for that comes from international missions. What they see there is the risk from the tropical diseases – natural outbreaks of diseases – and managing the threat of biological agents. This drives their need for better bio detectors.

CGN: Do you see a different civilian bio response? Are they driven towards things like syndromic surveillance rather than conventional bio detectors?

AB: From the civil side there is no development programme today; most of the development programmes are for the military. What we are doing with the civilians is establishing a network of laboratories for analytical purposes, so if there is a suspected outbreak of a biological agent we utilise the network that can rapidly identify the organism and after that we can make the right medical countermeasures to protect the population. These are for analytical purposes – analytical lab methods which can be allied with infectious diseases laboratories and conventional labs. That is FOI's main activity with the civilian biological threat.

CGN: In terms of the expertise that you provide, does this extend to deploying scientists into the field, or do you rely on a technical reachback via telephone or videolink?

AB: We are doing both. We have scientists that are now in the international environment from FOI and they are with armed forces to give field support. Currently there are discussions to extend this analytical capacity in the field, so we can support the military with increased analytical tools, take samples and send samples back home for analysis and then inform the military what kind of pollutants, or what kind of agents, they are facing on their international mission. So we combine scientists with armed force in many situations.

CGN: If you had to pick one innovation that FOI have introduced to the civilian forces, what would it be? Some of the work you have done on decision-making tools?

AB: That is a good example. These are based on different scenarios that we are working on, playing games for scenarios of chemical and biological attacks. By doing these scenarios we can train and educate the authorities as to what goes on in a chemical accident, or terrorist attack and what the consequences for the society or healthcare system are during the situation. How are the first responders trained to deal with such a disaster and what can medical responders do at a scene of a disaster – are there sufficient medical supplies, intensive care units sufficient for the situation, etc. We are doing exercises for the civilian authorities, making them aware of the problems with consequence management.

This is crucial information for the civil authorities; it provides them with decisions on how to handle the situation and what the right counter-measures are. We are working to develop these decision tools that will allow them to make quick, correct decisions. We want things like fast diagnostics of exposure – how do we know the exposure rate, or whether there is an emerging infection? We need to know these things for fast medical countermeasures – which can make all the difference.

CGN: You have been heavily involved with Impact, a multi-million Euro European Commission project to improve first responders' ability to deal with a CBRN attack [for more information see CBRNe World Winter 2006]. Could this be done through there?

AB: The EU would be the right arena to do this and we are looking to Impact to take these sorts of things forward in Financial Plan 2007 (FP7). We have had discussions with Director General Health to help in the management of chemical and radiological hazards and we hope the EU likes our ideas and takes them up.

CGN: The EU lags behind the US in some things, and one area that Impact has yet to deal with would be a Bioshield (multi million dollar vaccine stockpile for the population) level of protection. Could you see yourself pushing for that?

AB: Bioshield is a large scale programme with lots of money, and the EU is not on the

same scale. This will mean that the US will be ahead for a few years in both CBRN defence and development. I hope Europe will alleviate this problem by trying to collaborate for a common effort on research and development with the US. We have followed this line and have a joint Swedish-US agreement with the Dept of Homeland Defence (DHS). This is a collaboration for R&D with FOI scientists applying for funds from the DHS.

CGN: To return to decision tools, have you seen, or are you working on, a single integrated consequence management system? Something that can provide the incident commander with real-time situational awareness, so he can see police assets, fire assets, military assets, have the plume model tracked on there and have information like hospital capacity, etc?

AB: A fully integrated management system? That is in the pipe line but we would need a few more years to develop such a system. First we need to go through what constitutes a matter for the police – what are their problems, what are their routines for the management, what are the similarities and differences between police and armed forces. We will end up with an integrated system, but this is a long-term idea for future concepts.

CGN: I will be mean and ask, out of the whole range of Gothenburg presentations, which one is going to be the one you are most looking forward to?

AB: I am looking forward to the crisis management sessions. A few sessions are on triage, and triage is an important topic – how can we optimise treatment and how far can we go in fast diagnosis and Med CM – how should we optimise it? It is a great need in many countries and I think these presentations will be of great benefit.

