

OPINIONS

The uneasy reality of newly developed NBC weapons

to the attack, and finally the clean-up procedures after an attack.

It would be reasonable to say that Canada is a leader in the development of effective prophylactic and medical treatments for NBCW. The use of an acronym, or initials, usually distances one from the ultimate horror of the experience. Needless to say, these developments must be tested against real agents, which need to be manufactured in small quantities as required. This clearly poses a moral dilemma to a nation that has decreed the manufacture and stockpiling of such agents as indefensible. At this point, one either has to abandon testing procedures or rely on the operation of various checks and measures to ensure that objectionable materials are produced, used and subsequently destroyed under the strictest conditions. In this case, one must ultimately also rely on the good faith of all the personnel and organizations involved. The alternative is eventual inability to defend oneself from a NBC attack.

What constitutes NBCW offensive research is more difficult to define. For example, the development of new pesticides could lead to an unexpectedly toxic agent against mammals. Conversely, the mustard gas develop-

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ments have since led to effective antineoplastic agents against cancer. Studies of aerosol formation which help to assess the impact of pollutants in the atmosphere (not unlike studies going on at York) can easily be adapted to develop new delivery systems for chemical and biological agents. The development of vaccines against diseases such as AIDS could also be turned around to produce even more deadly versions that might even be viable outside the body for months. Pity the poor official charged with determining if this or that project could be used for evil purposes.

The advantages of chemical, and to a lesser extent, biological weapons to the user are several. The first is the ease and cheapness of production. The second is the ease of concealing one's intentions from international scrutiny. A kitchen blender can be used for making puree or mixing the ingredients of a chemical process to produce a poisonous material. A relatively common chemical substance might be the precursor to a medicament or to a

nerve gas. A third advantage is the ease of delivery behind enemy lines using conventional weapons such as long range artillery. If funds are available, ballistic missiles or air bombardment are also options. Hand delivery is also not out of the question.

Perhaps the most significant advantage, however, is that just the threat of delivery can greatly reduce an opponent's ability to manoeuvre because of the precautions that become necessary. Hampered by an impervious suit and mask, even the simplest manipulation such as firing a rifle becomes a major effort. Getting in and out of vehicles becomes awkward, and communication between two heads completely enclosed in rubber and perspex becomes almost impossible. A land army thus quickly becomes bogged down in a mass of rubber.

Even under the mildest of weather conditions there is a limit as to how long the human body can tolerate such an enclosure. At sea the problem might seem simpler since the hatches can be

battered and the ship surrounded by a protective spray of sea water. But sailors locked below decks are no longer an effective fighting force. The artificial rain-storm becomes a beacon for radar-guided missiles, as anyone who watches weather reports on TV can readily appreciate. This leaves only an already airborne force alert, but eventually it will have nowhere to land.

A well-trained soldier can go to full NBCW alert status in an incredibly short time. However, this status can only be maintained for a reasonable time. In conditions of extreme heat this time is very short, less than an hour. Once exposed to a contaminating agent the soldier cannot safely exit from the protective clothing without going through decontamination procedures. This normally requires some assistance and takes time. There might not be enough hours in a day to safely decontaminate a whole brigade. In the meantime one cannot expect the enemy to sit and wait. Contaminated clothing must also be dumped, and replacement clothing issued after each attack. Thus the limitation is not how fast a soldier can become combat ready, but how fast he or she can become decontaminated and ready for the next dose.

In my view, what this means is

that given the availability of nuclear weapons, a chemical-biological war would, by default, very rapidly escalate to a nuclear one. In many respects it would be swifter, cleaner and more humane. The clean-up procedures are essentially the same, and nuclear waste has definite advantages over chemical or biological waste. It has a calculable lifetime which is unaffected by any other environmental conditions, and it is incapable of reproducing itself or of metabolizing to produce even worse toxins.

"BCW can only be a brief intermediate phase before the big bang."

This all sharpens into terrible focus when one considers the current situation in the Middle East. Here we have a country which has already used nuclear weapons facing a country known to have, and to have used in very recent times, a selection of the most modern chemical weapons. There can be almost no doubt that a chemical strike by the one side would be countered by a series of "surgical" nuclear strikes by the other. Since high temperature incineration is about the only generally acceptable way of destroying poison gas stockpiles in compliance with international agreements, one can almost anticipate the justifications that might follow. It is even more chilling to have heard a Soviet spokesperson on a recent *60 minutes* programme indicate that such a response would be entirely understandable.

In the meantime, let us not be lulled into imagining that NBCW can proceed without the big N. As nice as it might be to have all the gear, antidotes and medicants at the ready, BCW can only be a brief intermediate phase before the big bang.

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