2009 ANNUAL REPORT

OF

THE BIOLOGICAL AND CHEMICAL DEFENCE

REVIEW COMMITTEE

THE COMMITTEE

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INTRODUCTION

The policy of the government of Canada is to press for global, comprehensive and verifiable treaties to ban all biological and chemical weapons. Even so, the threat from such weapons persists. Accordingly, Canada has an obligation to ensure that members of the Canadian Forces (CF) have adequate training and equipment to protect themselves against exposure to chemical and biological agents. This protection is required for deployments on foreign soil and, as the threat of terrorist action exists in Canada, it is also required for any military response to domestic emergencies.

The Canadian public has the right to be assured that Canada's policy of maintaining only a defensive capability in this field is fully respected at all times, and that any research, development and training activities undertaken pose no threat to public safety or the environment.

To facilitate this assurance, the Biological and Chemical Defence Review Committee (BCDRC) was established by the Minister of National Defence in May, 1990. The Committee is mandated to review annually the research, development and training activities in biological and chemical defence (BCD) undertaken by the Department of National Defence (DND) to ensure that they are defensive in nature and conducted in a professional manner with no threat to public safety or the environment.

The BCDRC is usually comprised of a chairperson and two members representing disciplines relevant to BCD such as chemistry, microbiology and toxicology. The Chairperson is appointed for a term of five years by the Deputy Minister of National Defence (DM) and the Chief of the Defence Staff (CDS) from amongst the existing Committee members. Committee members are recommended by learned Canadian scientific societies and are chosen by the Chairperson. The present members are:

Chair	Dr. Sheldon H. Roth	Professor University of Calgary (Toxicology and Pharmacology)
Member	Dr. Pierre G. Potvin	Professor York University (Chemistry)
Member	Dr. Julia M. Foght	Professor University of Alberta (Microbiology)

Commencing in 1990, Annual Reports have been submitted. All have been made available to the public and many are reproduced on the BCDRC Internet web page (http://www.bcdrc-cepdbc.forces.gc.ca/index-eng.asp). The reports use many military and government abbreviations and acronyms. The abbreviations are used only after the

full terms they represent are spelled out at least once. However, to make the reports easier for the reader, the abbreviations are summarized in Annex C.

SUMMARY

In this report, the BCDRC recounts its activities in 2009. Its assessments of the state of implementation of the 1988 Barton Report recommendations and of the progress made on its own recommendations from previous years are presented as annexes. Following a discussion about The Defence Research and Development Canada (DRDC) Defence and Security Science and Technology (S&T) Strategy and a review of some of BCDRC's previous recommendations and the progress that has been made to meet them, the BCDRC makes the following new recommendations:

- that a series of seminars be regularly held at DRDC Suffield to publicize current and proposed research and development (R&D) so that both DRDC and external audiences are fully aware of the research.

- that DRDC and the Canadian Forces Health Services Group (CF H Svcs Gp) work more closely to achieve Health Canada (HC) approval of medical countermeasures originating in DRDC laboratories.

COMMITTEE ACTIVITIES - - 2009

During 2009, the BCDRC made its annual visits to DND establishments involved in the BCD program. These establishments included:

- National Defence Headquarters (NDHQ) with briefings from or meetings with:

    - DRDC Corporate Centre, including meetings with the Assistant Deputy Minister (Science and Technology), and the Directors for S&T – Integrated Capability and S&T – Personnel and members of their staffs;
    - The Directorate for Arms Proliferation Control Policy (DAPC Pol) including a briefing about the Chemical Weapons Convention (CWC) and the Biological and Toxins Weapons Convention (BTWC) and Canada's participation in them;
    - The CF H Svcs Gp/Director Health Services Operations/Operational Medicine (CF H Svcs Gp Op Med or just Op Med);
    - The Directorate for Chemical, Biological, Radiation and Nuclear (CBRN) Defence which is replacing the Directorate for Joint

Capability Production (DJCP); specifically DJCP 5: CBRN Requirements and Projects; and

- The Chief of Defence Intelligence (CDI)

- DRDC Suffield, Alberta, with briefings about the responsibilities, resources and activities of the research establishment and the BCD program. The Committee also heard about the status of the Counter Terrorism Technology Centre (CTTC) and was briefed about some CBRN Research and Technology Initiative (CRTI) projects in which Suffield participates. The Committee toured some facilities and met with scientists from several research groups in the establishment. Time was made available to allow any member or groups of members to approach the Committee to discuss matters of concern. While at DRDC Suffield, the BCDRC met with the Director General, the Deputy Director General/Head of CTTC, the acting head of the BCD program and other members of the senior staff. The Committee held discussions with the General Safety Officer and the Environmental Safety Officer;

- DRDC Toronto where the Committee reviewed the ethics policy for human subjects in experimental trials;

- the Canadian Joint Incident Response Unit – CBRN (CJIRU – CBRN);

- 1 Canadian Air Division, Winnipeg and 17 Wing, Winnipeg; and

- the Canadian Forces Firefighter Academy/Canadian Forces Nuclear Biological and Chemical School (CFFA/CFNBCS), at CFB Borden, Ontario.

The BCDRC also visited:

- the Department of Foreign Affairs and International Trade (DFAIT) in Ottawa where the members received briefings about the Global Partnership Program; and

- the Canadian Science Centre for Human and Animal Health (CSCHAH) in Winnipeg for briefings about CRTI projects conducted in partnership with DRDC.

The BCDRC reviewed DND's 2009 BCD R&D Program and determined that it was in accordance with current Canadian Government policy. Current R&D contracts and publications lists were examined. In addition, the DRDC accountability document was scrutinized.

To enhance the perspective of the concerns of Canadians in Canada's BCD activities, the Committee invites any group of concerned citizens to meet and discuss

issues. Any group or individual that wishes to make representation to the Committee should contact the executive officer. Contact information is found in the Introduction section of the web site.

In the past, during meetings with groups of citizens and of the media, some concerns about DND's BCD program have been identified and reasoned responses were given by the Committee at those times. These comments were repeated in the BCDRC annual report until 2001 (the 2001 and earlier reports are available on this web site). Please refer to these reports for explanations of the difference between offensive and defensive biological and chemical research and means of obtaining information about BCD from DND.

DISCUSSION

The BCDRC wishes to thank all of the organizations that it visited in 2009. The Committee received cordial welcomes and was able to engage in open and honest discussions at all establishments visited. During the visit of the Committee to the CSCHAH, the Operation Centre and staff were fully involved with the first phase of the swine flu (H1N1 virus) pandemic yet people still took time out to discuss their research with the members of the BCDRC.

During visits, staff at DRDC Suffield, DRDC Toronto and the DRDC Corporate Headquarters informed the BCDRC about the DRDC Defence and Security Science and Technology (S&T) Strategy. The aim of this initiative is to maximize the impact of S&T on the Canadian defence and security capacity and on the nation's innovation capacity. The strategy broadens the scope of the Defence S&T Strategy enunciated in 2006, basically expanding it from a departmental scope to one focusing on national issues. This is a logical development for DRDC as it has been integrated with 21 government departments or agencies to identify, assess and address Canada's public security threats. DRDC has become the principle R&D agency for Public Safety Canada (PSC). In that role, as a national resource, its relationship with industry and academia in Canada will change. That is one of the goals of the new S&T Strategy. A part of the public security threat in Canada a CBRNE (the final E representing energetics or explosives) threat is identified.

This focusing on a broader philosophy at DRDC should not directly affect the mandate of the BCDRC where it interacts with DRDC. However, implementation of the Defence and Security S&T Strategy will be an important factor in the way R&D for the DND BCD programme is delivered. DRDC Corporate Headquarters has completed an internal reorganization. Partner Groups have become an important element of the new structure. R&D in the fields of BCD is the work of two Partner Groups: Partner Group 0, Integrated Capability, supporting the Chief of Force Development and Partner Group 4, Personnel, supporting the Chief of Military Personnel. In broad terms, Partner Group 0 develops equipment for CBD and Partner Group 4 develops medical countermeasures (MCM) for soldiers.

Partner Groups are not universally popular. Doubt has been expressed that they will be sufficiently responsive to the needs of the users of equipment and medical counter measures: the soldiers, sailors and airmen involved in military operations. DRDC is poised to broaden the scope of its R&D but it must continue to pay attention to the BCD needs of the elements (Army, Navy and Air Force) and the commands (Special Forces and commands for Canadian internal and overseas operations). These users provide their priorities to DRDC and monitor progress of research and development as part of the partner group. They may question whether their priorities will be considered as strongly as they were when the Army, Navy and Air Force were employers of R&D resources rather than partners in their use.

Previous BCDRC Recommendations are listed in Annex B. Some of the recommendations were made almost two decades ago. For example, the first recommendation in the annex was made in 1990. It concerns the need for good flow of information at the defence research establishments. With the adoption of partner groups, the need for good communication remains critical. A partner group is made up of a matrix of people, some who are working on projects full-time but others who participate in partner group work a small part of their time. Some of these people cannot see the value of the partner group system. The BCDRC found that senior people at both DRDC Suffield and DRDC headquarters were receptive to having seminars in which scientists would review their work for other members of their establishment, for staff doing comparable or related work at other DRDC facilities, for members of the responsible partner group, for the BCDRC and for other interested parties.

Another early recommendation from the BCDRC, the second on the list in Annex B, dating from 1993, concerns the inventory of agents at DRDC Suffield. Recent work at Suffield on the organization of its inventory of agents is producing excellent progress. In 2009, there was a marked reduction in the number of biological samples. Material which had become redundant to BCD research had been eliminated. However, the evident improvement in the chemical and biological inventories of agents is not reflected in the toxins stocks where more control and organization remains necessary.

Less satisfactory progress has been made on a recommendation from 2006 that is related to the development and implementation of medical countermeasures. Considerable, successful research and initial development in MCMs is conducted at DRDC Suffield but it is difficult to take the product beyond these early stages. It is very costly to move the product through development to achieving Health Canada approval so that it can be used on human subjects as an MCM. DRDC Suffield has completed work on a “good laboratory practices” (GLP) facility in which data can be collected to satisfy some HC requirements. However, clinical trials with human or animal subjects, or both, are often also necessary but very expensive and, usually, with no mass market for the final product, pharmaceutical companies are not interested in either participating in trials or paying for the work. The BCDRC now recognizes that the complete solution to this problem is beyond the resources of DND. Therefore, BCDRC will drop its 2006 recommendation. The integration of DRDC, PSC and HC in the current effort to counter

the domestic terrorist threat may lead to a solution without the involvement of the CF Health Services. The use of a product developed in a DRDC establishment for use by soldiers could, potentially, be effective as an MCM for the general public. The broader use would make the investment in clinical trials more palatable and possible. The partnership of DRDC and CF H Svcs is still desirable for the development of MCMs for strictly military use.

Information gathered during a visit to the CJIRU-CBRN allowed the Committee to determine that the unit is well integrated into the military force structure and the shortcomings of its predecessor, the Joint NBCD Company, noted in a 2004 recommendation, have been overcome.

The success of the CJIRU-CBRN has led to a plan to form a new military trade for service people employed in CBRN defence work. A dedicated trade has been discussed for years as a solution to the problem of finding experienced and qualified people to be employed in CBRND work at the CFNBC School and within units and formation headquarters. The BCDRC welcomes such a development insofar as it would foster competence and continuity in training standards and readiness levels, and help secure the required staffing.

CONCLUSIONS

Although the introduction of the DRDC Defence and Security Science and Technology Strategy will cement partnerships as the basis for future R&D, DRDC must meet the BCD needs of the Elements (Army, Navy and Air Force) and the Commands (Special Forces and Canadian internal and overseas operations). The need for good, two-way communications is of utmost importance.

The BCDRC will drop its 2006 recommendation for the integration of CF H Svcs Gp into product development projects involving other government departments. There is still a need for CF H Svcs Gp Op Med to work with DRDC on the development and approval of MCM for purely military use.

RECOMMENDATIONS

The BCDRC recommends that a series of seminars be regularly held at DRDC Suffield to publicize current and proposed R&D so that both DRDC and external audiences are fully aware of the research.

The BCDRC recommends that DRDC and CF H Svcs work more closely to achieve Health Canada approval of medical countermeasures originating in DRDC laboratories.