



ANNUAL REPORT

CANADIAN POLICE RESEARCH CENTRE

2 0 0 2 • 2 0 0 3



www.cprc.org

CANADIAN POLICE RESEARCH CENTRE

**ANNUAL REPORT
2002 - 2003**

This Annual Report is a publication of the Canadian Police Research Centre.
For additional copies or further information contact:

Canadian Police Research Centre
P.O. Box 8885, Ottawa, Ontario K1G 3M8
Telephone (613) 998-6343, Facsimile (613) 952-0156, www.CPRC.org

©HER MAJESTY THE QUEEN IN RIGHT OF CANADA (2003) as represented by the Solicitor General of Canada
Cat. No. JS61-3/2003 ISBN0-662-67527-4 ISSN1181-6244 PAID411

TABLE OF CONTENTS

Chairman's Message.....	iv
Introduction	1
CPRC Executive Board and CPRC staff members	2

PROJECTS

Category A

HEALTH AND SAFETY: PROTECTING THE POLICE IN HAZARDOUS SITUATIONS

Baton Study.....	4
Blast Suppressant Foam Containment System	4
Blunt Trauma Protective Equipment: Performance Standards.....	4
Canadian Soft Body Armour Standard and Multi-hit Test Procedure.....	4
Enhanced Torso Protection Systems	4
Hazardous Material Portable Burn System.....	4
Minuteman Ballistic Shield.....	5
Police Riot Helmets and Faceshield Protection: Performance Standards.....	5
Remote Wireless Explosives Disruptor Initiator.....	5
Robot Accessory for Fuming Fingerprint Evidence (RAFFE).....	5
Taser Technology: Less Lethal Technology.....	6
Training for Crowd Management and Conflict Resolution	6

Category B

OPERATIONAL EFFECTIVENESS: FIGHTING CRIME, GATHERING INFORMATION, INTELLIGENCE AND EVIDENCE

Alberta Public Safety Network	7
Arson Crime Linkage Analysis System	7
ATV Gated Laser Imaging.....	7
Biometrics Research	7
Canadian Field Trials: Treatment of Porous Exhibits	7
Decomposition in the Great Lakes Environment.....	8
Decomposition in the Marine Environment	8
Dispatch Prediction Engine	9
Distribution of Sequence Heteroplasmy in Human Mitochondrial DNA from Skeletal Remains.....	9
DNA Identification Act Research Project	9
Drugs in Homicide Victims	9
Effects of Various Environmental Regimes on Blow Fly Maggot Development.....	9
Electronic Crime Scene Investigation	9



NRC-CMRC



Extraction of DNA from Teeth 10

Fingerprint Research 10

Forensic Entomology Across Canada 10

Kingston Global Positioning System (GPS) Tracking Evaluation 11

On-line Reporting..... 11

Ontario Police College (OPC) E-learning: Advanced Patrol Training 11

Open Source: Open Architecture..... 11

Physical Matching Feet to Footwear..... 12

Pressure Sensitive Paint (PSP) 12

Removable Equipment Package (RS3P) (Restricted) 12

Surveillance Kit Power Source..... 12

Use of Force Training Simulators Evaluation..... 12

Category C

PROTECTING THE PUBLIC: TRAFFIC, CUSTODY, CRIME PREVENTION

Cell Design 13

Cybercops: The Game 13

Pedestrian Crash Test Dummy 13

Smart Side: "Strategically Managing Applied Road-Safety Technologies:
Stop Impaired Driving Everywhere" 13

SPECIAL INITIATIVES

CRTI: Chemical Biological Radiological and Nuclear Research and Technology Initiative..... 16

National Building Security Code 16

PoliceLearn.com 17

Project BlueBear 18

SCCan: Security Communities Canada 19

LINKS AND LEVERAGES

Technical Reports and Technical Memoranda 22

Financial Case Study..... 24

Assistance to the Private Sector..... 25

Industrial Research Assistance Program (IRAP)..... 26

Technology Partner Program 26

Technology Partner Associates..... 27

Interaction With Others 28

Protection of Intellectual Property Assets..... 29

Submitting R&D Proposals 31

CHAIRMAN'S MESSAGE

New demands and expectations are constantly placed on police and first responders in Canada and throughout the world, particularly in the aftermath of September 11, 2001. There has been a concerted effort in Canada to examine and develop effective technologies to help police and other professionals meet these demands. The Canadian Police Research Centre (CPRC) continues to have a prominent role in researching, evaluating and developing such new tools and technologies. As Chair of CPRC, I am pleased to provide this overview of the activities of the Centre in the past year.

In 2002, the police community realized that it was necessary to get together to create a consortium, unique in Canada, to address e-learning opportunities. Under the guidance of the CACP, letters were sent to all Chiefs asking for interest in PoliceLearn.com (PLC) (www.policelearn.com). In February, stakeholders representing Canadian police colleges and police services met to create a strategic plan, under the direction of the CPRC at the National Research Council in Ottawa. We anticipate that PLC will be underway in 2004.

With funding provided under the U.S.–Canada Agreement on Cooperative Research and Development Concerning Counter-terrorism, scientists from the RCMP, Defense R&D Canada, and a number of other federal government departments are researching various aspects of evidence recovery from contaminated crime scenes.

CPRC continues to support and encourage studies in forensic entomology. A project currently underway in the Maritime provinces will add another chapter in the Canada-wide database providing information on insect succession on cadavers.

Impaired driving is the leading criminal cause of death in Canada. The number of deaths from this crime are almost triple the murder rate. SMART SIDE is a world-leading project that, through technological means, aims to stop people from driving while impaired by alcohol (and perhaps other drugs).

This year the networking forum "Security Communities Canada" (SCCan) was hosted by CPRC in partnership with the National Research Council's Canadian Technology Network. This highly successful inaugural forum brought together the first-responder community, government, technology organizations, and Canadian industry to discuss their needs, challenges, and potential solutions. We anticipate that there will be several similar forums this coming year across Canada.

I am pleased once again to note the accomplishments of the CPRC. The enhancement of public safety, the protection of police personnel, and the improvement of operational effectiveness are admirably addressed by the CPRC. I look forward to the CPRC's continued commitment to these goals and success in the coming year.



CHIEF VINCE BEVAN
CHAIRMAN, CACP OPERATIONAL RESEARCH COMMITTEE

INTRODUCTION TO THE CANADIAN POLICE RESEARCH CENTRE (CPRC)

MISSION

To provide leadership and focus for a national program of research, development, evaluation and commercialization in the law enforcement and public safety sectors in Canada.

GOAL

To ensure that the best equipment and information is available to the Canadian police community and to offer Canadian expertise and enterprise an opportunity in this specialized field.

The CPRC is a partnership between the Canadian Association of Chiefs of Police (CACP), the Royal Canadian Mounted Police (RCMP) and the National Research Council (NRC) Canada. It and is staffed by personnel from the RCMP and NRC. Its structure and terms of reference allow it to deal effectively with research regarding police equipment and information research, development, and evaluation.

The objectives of the CPRC can be summarized as follows:

- to develop the best tools (equipment and information sources) for the police community;
- to strive to keep necessary technology affordable;
- to forge partnerships with Canadian industry and the national and international research community.

The CPRC strives works to ensure that the interests of the Canadian police community are best served with the available resources. The ultimate objective is to ensure that CPRC expenditures result in the timely transfer of technology to the police user for greater safety, increased efficiency, and effectiveness.

The CPRC has a national focus, a single coordinated effort to support research and develop technologies for Canada's law enforcement community. It promotes interaction between the police community, government, industry, universities and other research organizations.

The CPRC ensures that research results, expertise, information, and facilities are shared amongst all partners. Equally important, the CPRC provides "technology partner" evaluation services to Canadian police agencies, participating government agencies, security firms, and Canadian industry. This benefits Canadian industries by giving them an opportunity to test security oriented products under operational conditions. Canadian products are thereby given credibility to compete successfully in domestic and international markets.

The collaborative effort of the CACP, RCMP and NRC, via the CPRC, continues to result in the sponsorship of numerous research projects and in the development of new products and information sources for the public safety market.

2002/2003 CPRC EXECUTIVE BOARD



CHAIRMAN

CHIEF VINCENT BEVAN

Ottawa Police Service,
P.O. Box 9634, Station T,
OTTAWA, Ontario K1G 6H5
Office: (613) 236-1222, Ext. 5581
Fax: (613) 236-9360



MR. STEVE PALMER

Director, IRAP National Initiatives
National Research Council
Bldg M-55, Montreal Road Campus
1200 Montreal Road
OTTAWA, Ontario K1A 0R6
Office: (613) 993-3996
Fax: (613) 952-1079



DR. BRIAN RICHARDSON

Assistant Commissioner
Forensic Laboratory Services
Royal Canadian Mounted Police
1200 Vanier Parkway
OTTAWA, Ontario K1A 0R2
Office: (613) 998-6348
Fax: (613) 952-0156
(Retired in 2002)

CPRC STAFF MEMBERS



BARRY GAUDETTE

Manager
Canadian Police Research Centre
1200 Vanier Parkway
OTTAWA, Ontario K1A 0R2
Office: (613) 998-6340
Fax: (613) 952-0156
(Retired in 2002)



JOHN EVANS

Project Manager (on secondment to
CPRC)
Edmonton Police Service
9620 - 103A Avenue
EDMONTON, Alberta T5H 0H7
Office: (780) 421-2853
Fax: (780) 421-3587



JOHN ARNOLD

Chief Scientist
Canadian Police Research Centre
National Research Council
Bldg M-50, Montreal Road Campus
OTTAWA, Ontario K1A 0R6
Office: (613) 993-3737
Fax: (613) 993-8054 954-2524



JULIE GRAHAM

Project Manager
Canadian Police Research Centre
1200 Vanier Parkway
OTTAWA, Ontario K1A 0R2
Office: (613) 990-9533
Fax: (613) 952-0156



GLENN CARROLL

Project Manager
Canadian Police Research Centre
1200 Vanier Parkway
OTTAWA, Ontario K1A 0R2
Office: (613) 998-6341
Fax: (613) 952-0156



DERYK PENK

Project Manager
Canadian Police Research Centre
1200 Vanier Parkway
OTTAWA, Ontario K1A 0R2
Office: (613) 993-5635
Fax: (613) 952-0156



JUDY DONNELLY

Office Manager
Canadian Police Research Centre
1200 Vanier Parkway
OTTAWA, Ontario K1A 0R2
Office: (613) 998-6343
Fax: (613) 952-0156
(Transferred in March 2003)

An aerial, black and white photograph of a forest. A central path or stream bed winds through the trees, leading towards the top of the frame. The trees are densely packed, and the overall scene is captured from a high angle, showing the intricate patterns of the forest canopy.

PROJECTS

CATEGORY A — HEALTH AND SAFETY: PROTECTING THE POLICE IN HAZARDOUS SITUATIONS

BATON STUDY — CONCLUDED

PROJECT MANAGER:

John Evans, CPRC (780) 421-2853

REPORT:

TR-02-2003 "Collapsible Baton Study"

Edmonton Police Service reviewed collapsible batons being used, specifically to determine whether the size of batons in use were adequate. The conclusions of this report will be made available via the CPRC.

BLAST SUPPRESSANT FOAM CONTAINMENT SYSTEM — ACTIVE

PROJECT MANAGERS:

Glenn Carroll, CPRC (613) 998-6341
John Bureaux, Canadian Bomb Data Centre (613) 993-7880



REPORT:

TM-06-95R "Blast Suppression Foam"

Development continues with this award-winning technology comprising foam delivery, foam formulations, and containment apparatus.

Commercialization has also been completed and the Blast Guard system, as well as specific components, are available to first-responders through NBC Team Limited (Phone: 905-643-8801).

BLUNT TRAUMA PROTECTIVE EQUIPMENT: PERFORMANCE STANDARDS — ACTIVE

PROJECT MANAGERS:

Randy Gaw, Correctional Services Canada (613) 995-3981
Julie Graham, CPRC (613) 990-9533
Dave Shanahan, Canadian Standards Association (416) 747-2586

Correctional Service Canada, RCMP, various user agencies, and representatives of industry are working to create performance standards for protective equipment for police and correctional officials.

CANADIAN SOFT BODY ARMOUR STANDARD AND MULTI-HIT TEST PROCEDURE — CONCLUDED

PROJECT MANAGERS:

Tony Bosik, Bosik Consultants Limited (613) 822-8898, ext 226
Julie Graham, CPRC (613) 990-9533

The Canadian General Standards Board (CGSB) has established a Canadian Standard for daily personal use body armour. Bosik Consultants Limited has developed an instrument that performs a reproducible, multi-hit test designed to represent shots from an automatic weapon. It fires a series of three shots that strike the target in close proximity. The rate of fire is variable; each barrel is laser aimed and the speed of each round is recorded. A database of results has been created and was used to develop a test procedure relating to the standard.

ENHANCED TORSO PROTECTION SYSTEMS — ACTIVE

PROJECT MANAGERS:

Julie Graham, CPRC (613) 990-9533
Dr. Michael Worswick, University of Waterloo (519) 885-1211, ext. 5830

The objectives of the project are :

- to develop mechanical test procedures to evaluate the performance of thoracic body armours against large calibre ballistic impact
- to develop numerical models capable of predicting the performance of such equipment and suitable for use in optimizing the design of competitive, effective equipment
- to support the development and eventual marketing of enhanced body armour designs

University of Waterloo researchers, in association with researchers from Defence R & D Canada (Val Cartier) and with representatives from several Ontario industries concerned with the production of personal protection systems, are involved in this project, which is also supported by Materials and Manufacturing Ontario (MMO) and CPRC.

HAZARDOUS MATERIAL PORTABLE BURN SYSTEM — ACTIVE

PROJECT MANAGERS:

Glenn Carroll, CPRC (613) 998-6340
Derick Ivany, RCMP Technical Operations: Explosive Disposal & Training Section (EDTS) (613) 993-9896

EDTS has developed a solution to hazardous materials removal in the form of a cost-effective, mobile incinerator. It is capable of destroying ammunition, drugs,



tobacco, limited pyrotechnics, and other exhibit materials in a safe, controlled, environmentally-friendly manner.

The project group (Cpl. Ivany and a Hamilton-Wentworth Regional Police Service member) researched the background technology, consulted with industry, and developed partnerships with a number of other police agencies.

Other agencies have provided in-kind contributions in the form of prototype testing (RCMP 'B', 'H', and 'J' Division Explosives Disposal Units, Sûreté du Québec, and Peel RPS). Prototyping, field trials, and environmental assessments have been completed. Commercialization via licensing is in progress with anticipated release to market in 2003.

MINUTEMAN BALLISTIC SHIELD — CONCLUDED

PROJECT MANAGER:

John Evans, CPRC (780) 421-2853

CPRC was introduced to an innovative ballistic shield that can be folded into a compact carrying case. Its compactness allowed it to be useful for front line officers who are often the first to confront high risk situations. CPRC had the shield field tested and evaluated by officer safety staff. Staff viewed the unit favourably but noted several items for minor improvements. These were forwarded back to the manufacturer, who is incorporating them into the design.

POLICE RIOT HELMETS AND FACESHIELD PROTECTION: PERFORMANCE STANDARDS — CONCLUDED

PROJECT MANAGERS:

Julie Graham, CPRC (613) 990-9533
David Shanahan, Canadian Standards Association (416) 747-2586

Spear-headed by the Correctional Service Canada, and with input from user agencies and industry, the Canadian Standards Association has revised

Canadian Standard CAN/CSA-Z611-M86 (July 86). It was published in August 2002.

REMOTE WIRELESS EXPLOSIVES DISRUPTOR INITIATOR — ACTIVE

PROJECT MANAGERS:

Glenn Carroll, CPRC (613) 998-6341
Sheldon Dickie, RCMP Technical Liaison Branch, Technical Operations Directorate (613) 993-7126
Scott Sheppard, Canadian Police College (613) 993-4566

The RCMP 'E' Division Explosive Disposal Unit have developed, in conjunction with the Canadian Bomb Data Centre (CBDC), a small light weight transmitter/receiver system that can initiate explosive charges and fire disruptors from a remote command post without the use of a ground line. Current technology requires using such a ground line, presenting a physical safety hazard and a tactical disadvantage.

Further refinements (such as making it smaller and more rugged) are in progress with a private sector collaborator, Inuktun Services Inc. (250-729-8080). The company is preparing to take this technology to market in 2003.

ROBOT ACCESSORY FOR FUMING FINGERPRINT EVIDENCE (RAFFE) — CONCLUDED

PROJECT MANAGER:

John Arnold, CPRC (613) 993-3737

REPORT:

TR-01-2003 "Development of a Robot Accessory for Fuming Fingerprint Evidence"

This project stemmed from a need expressed by Dave Wood of the Calgary Police Service Tactical Unit. He said that police need a remotely-controlled device (affixed to a Bomb Disposal Robot) to acquire fingerprints from suspicious packages. This project found that the cyanoacrylate fuming process requires high heat, controlled low airflow conditions, and a certain degree of humidity. Six design alternatives were created based on principles of conduction, convection, and maximizing the amount of glue surface area to heat. The most promising design alternative was developed into a working prototype, called RAFFE (Robot Accessory for Fuming Fingerprint Evidence). It is recommended that future design enhancements consider the addition of a fuming shelter and a steam emitter.

Field testing on RAFFE is required to determine how best to deploy the device with the robot under various operating scenarios (for example, indoor versus outdoor use). The working prototype has been delivered to the Calgary Police Service for such testing.

TASER TECHNOLOGY: LESS LETHAL TECHNOLOGY — CONCLUDED

PROJECT MANAGERS:

Julie Graham, CPRC (613) 990-9533
Darren Laur, Victoria Police Service (250) 995-7654
Peter Sherstan, RCMP (780) 412- 5230

REPORTS:

TR-01-2000 "TASER Technology Research Paper"
TR-08-2002 "The Conducted Energy Weapon Evaluation Report" (Restricted)

TR-01-2000 outlines the six month study undertaken by the Victoria Police Service. The RCMP has concluded a further evaluation of this less lethal technology in several British Columbia and Alberta locations.

TRAINING FOR CROWD MANAGEMENT AND CONFLICT RESOLUTION — CONCLUDED

PROJECT MANAGERS:

Julie Graham, CPRC (613) 990-9533
Shirley Paré (613) 747-9089

REPORT:

TR-05-2001 "Crowd Management and Conflict Resolution Pilot Workshop Evaluation"

Saint Paul University's program in conflict studies led to the establishment of the Crowd Management and Conflict Resolution initiative which supports the Canadian government's dedication to public order and peace at home and abroad.

A series of workshops and seminars generated a strategic frame of reference used to develop a paper and a textbook that will be used for the widespread training for police and others responsible for security. The text will also be useful for people from the media, crowd organizers, and participants, as well as political and business leaders who may find themselves the targets of crowds. It is expected that the text will be available in 2004.

CATEGORY B — OPERATIONAL EFFECTIVENESS: FIGHTING CRIME, GATHERING INFORMATION, INTELLIGENCE AND EVIDENCE

ALBERTA PUBLIC SAFETY NETWORK (APSNET) — ACTIVE

PROJECT MANAGER:

John Evans, CPRC (780) 421-2853

The Alberta Public Safety Network is a project to integrate several of the primary police databases in the province of Alberta. For many years people have intended to integrate these databases but the work was seen as too expensive and complex to tackle. The CPRC took on research in this area to find an acceptable solution. A series of presentations were facilitated by CPRC to senior and technical staff in the Alberta policing community demonstrating emerging technical solutions to their integration challenges that would be less expensive, less complex, and more flexible by adhering to open architecture standards.

The result was a re-invigoration of this project and support by the Alberta Association of Chiefs of Police. The project has progressed at a fast pace to date and is targeted to be operational by late 2003.

ARSON CRIME LINKAGE ANALYSIS SYSTEM (ACLAS) — ACTIVE

PROJECT MANAGER:

John Evans, CPRC (780) 421-2853

Research into the behaviours of serial arsonists indicates their crimes can be linked in much the same way as the crimes of serial rapists and killers. With this in mind, Arson Crime Linkage Analysis System is a branch off the Violent Crime Linkage Analysis System (ViCLAS) database.

It is designed as an arson database and linkage system. CPRC has interest from some police agencies to holding trials of it. Other agencies that have an interest in participating in these trials should contact the CPRC.

ATV GATED LASER IMAGING — ACTIVE

PROJECT MANAGERS:

Denni Bonnier, Obzerv (418) 657-7006
Glenn R. Carroll, CPRC (613) 998-6341
Sheldon Dickie, RCMP Technical Liaison Branch, Technical Operations Directorate (613) 993-7126

CPRC continues working with Obzerv, a Quebec-based Institut National d'Optique (INO) spin-off company that has developed a product with a potential law enforcement application. A portable gated laser imaging system is in the prototype stage.



BIOMETRICS RESEARCH — CONCLUDED

PROJECT MANAGERS:

Glenn R. Carroll, CPRC (613) 998-6341
Heather Riou, RCMP Technical Security Branch, Technical Operations Directorate (416) 993-7407

Biometric technology continues to develop and the RCMP and other government agencies have renewed interest in security and biometrics. With that in mind, this high-priority project addresses the examination, testing, and evaluation of many different forms of biometrics and their relation to security processes. The objective of the project is to determine the extent to which current biometrics products and methods are applicable to access control and other applications for police and government use. Proposed work products are:

- a biometric device comparison report that will include guidelines for using this technology
- a formal licensing agreement for use of these biometric devices
- material to be used in training workshops

Since the start of this evaluation, an intra-departmental working group has been struck to monitor the technologies and policies surrounding this sector.

A technical report summarizing this initiative is being prepared.

CANADIAN FIELD TRIALS: TREATMENT OF POROUS EXHIBITS — ACTIVE

PROJECT MANAGERS:

Julie Graham, CPRC (613) 990-9533
Dr. Della Wilkinson, RCMP Forensic Identification Research Section (613) 993-3059



The study will compare the treatment of porous exhibits with the forensic chemical 1,8-Diazafluoren-9-One (DFO), with Ninhydrin, and with the sequential use of DFO followed by Ninhydrin. Many other countries process porous exhibits in a sequential manner; this process has not been adopted in Canada. This field study will provide an opportunity to introduce this sequential and standardized approach to the field. The results will allow identification personnel to evaluate sequential processing against their current practices.

DECOMPOSITION IN THE GREAT LAKES ENVIRONMENT — ACTIVE

PROJECT MANAGERS:

Dr. Gail Anderson, Simon Fraser University
(604) 291-3589
Julie Graham, CPRC (613) 990-9533

REPORT:

TR-08-2001 "Underwater Digital Photography Equipment for Evidence Recording"

Working in co-operation with Dr. Gail Anderson of Simon Fraser University, the Niagara Regional Police Service Underwater Search and Recovery Unit (USRU) is studying aquatic death/crime scenes. The study involves the use of pig carcasses and is being conducted in Lake Ontario.

The purpose of the study is to determine the post mortem interval of submerged bodies by identifying:

- stages of decomposition in fresh water at various depths and water temperatures
- scavenging patterns and aquatic organism succession
- re-float patterns based on depths and water temperatures

DECOMPOSITION IN THE MARINE ENVIRONMENT — ACTIVE

PROJECT MANAGERS:

Dr. Gail Anderson, Simon Fraser University
(604) 291-3589
Julie Graham, CPRC (613) 990-9533

REPORT:

TR-09-2002 "Determination of Time of Death for Humans Discovered in Saltwater Using Aquatic Organism Succession and Decomposition Rates"

Dr. Gail Anderson of Simon Fraser University, in co-operation with the Vancouver Public Aquarium, the Canadian Coast Guard, the Canadian Amphibious Search Team, and the RCMP, has been studying arthropod succession on pig carcasses placed at varying depths in the ocean. The purpose of the study is to develop a system to determine time of death for bodies that have been disposed of in saltwater.



DISPATCH PREDICTION ENGINE — ACTIVE

PROJECT MANAGER:

John Evans, CPRC (780) 421-2853

CPRC has entered into dialogue with the University of Alberta to investigate developing a prediction engine using machine learning technology. The project intends to demonstrate the ability of machine learning techniques to accurately predict calls for service by type, location and volume to enable police to more adequately deploy resources.

DISTRIBUTION OF SEQUENCE HETEROPLASMY IN HUMAN MITOCHONDRIAL DNA FROM SKELETAL REMAINS — ACTIVE

PROJECT MANAGERS:

Julie Graham, CPRC (613) 990-9533
Dr. Dean Hildebrand, British Columbia Institute of Technology (604) 451-7027

Dr. Hildebrand and his colleagues are investigating the consistency of heteroplasmy in the hard tissues of an individual. If it is not consistent, they will investigate how it varies between different regions of the skeleton.

DNA IDENTIFICATION ACT RESEARCH PROJECT — CONCLUDED

PROJECT MANAGER:

Glenn R. Carroll, CPRC (613) 998-6340
Dena Roberts, RCMP Technical Operations (613) 993-1228

In Canada, Section 487.04 of the Criminal Code requires that persons convicted of "primary designated offences" provide samples of bodily substances from which DNA information can be extracted for inclusion in the National DNA Data Bank as per the DNA Identification Act. Primary offences are major crimes of violence such as murder and sexual assault. However, for persons convicted of "secondary designated offences", which tend to be large volume crimes such as break and enter, robbery, and arson, the Crown must be able to convince a judge to order that a bodily substance be taken for DNA analysis. As a consequence, DNA information from many persons convicted of secondary offences is not included in the National DNA Data Bank, thereby reducing its potential effectiveness.

This project examines Canadian criminal records to determine the correlation between the occurrence of primary and secondary offences. The research will attempt to determine how often a secondary offence appears on the same criminal record as a primary offence and how often it occurs prior to a primary offence. The objective is to produce a published report that the Crown can use in court arguments to persuade a judge to order that DNA samples be taken from someone convicted of a secondary offence.

A technical report summarizing this initiative is being prepared.

DRUGS IN HOMICIDE VICTIMS — ACTIVE

PROJECT MANAGERS:

Dr. Gail Anderson, Simon Fraser University (604) 291-3589
Julie Graham, CPRC (613) 990-9533

Dr. Anderson and her colleagues are investigating the effects of various drugs on the development of Canadian insects. This information is necessary in order for forensic entomologists to determine time-since-death in homicide investigations where drugs were used by the deceased. It is known that drugs will alter insect development but the impact of drugs on Canadian species is currently unknown.

EFFECTS OF VARIOUS ENVIRONMENTAL REGIMES ON BLOW FLY MAGGOT DEVELOPMENT — ACTIVE

PROJECT MANAGERS:

Dr. Gail Anderson, Simon Fraser University (604) 291-3589
Julie Graham, CPRC (613) 990-9533

This project will determine the effects of various environmental regimes such as fluctuating temperatures, very high and very low temperatures, varying humidity, food deprivation, etc. on the development of blow fly larva. The study of these effects will assist in time-since-death determinations.

ELECTRONIC CRIME SCENE INVESTIGATION — CONCLUDED

PROJECT MANAGERS:

John Arnold, CPRC (613) 993-3737
Michele Cronin, Fredericton Police Force (506) 460-2412

The CPRC, in partnership with the City of Fredericton and its police service and the Fredericton company LearnStream Inc., developed an "Electronic Crime Scene Investigation" course for delivery over the Internet. The project's goal was to develop and distribute a learning technology product on Internet crime that will lead to staff in policing and other organizations rapidly learning new skills and knowledge.

The following nine modules contribute to investigators in all Canadian police agencies acquiring new skills, no matter what the size of the organization:

- Taking the Call and Gathering Evidence
- Judicial Authority
- Electronic Evidence
- Electronic Devices as Potential Evidence
- Investigative Tools and Equipment

- Evidence Collecting, Packaging, Transporting, and Storing
- Electronic Evidence by Crime Category
- Technological Crime Investigator
- Reporting, Charges, Disclosure

The modules are accessible to all police agencies across Canada and around the world. While the content, based on Canadian legislation, will be aimed primarily at Canadian police, the project leaders are confident that much of the material will also be of interest internationally. A team of over a dozen subject matter experts from across Canada, Hong Kong and the United Kingdom provided input and feedback.

This project was supported by its partners and Human Resources and Development Canada's Office of Learning Technologies in the Workplace.

The course, which is self-paced, can be accessed at www.cybercrimecourse.org

EXTRACTION OF DNA FROM TEETH — CONCLUDED

PROJECT MANAGERS:

Julie Graham, CPRC (613) 990-9533
 Dr. David Sweet, Bureau of Legal Dentistry, UBC (604) 822-8822

REPORT:

TR-03-2003 "Comprehensive Assessment of the Potential to Extract Forensic DNA Evidence from Various Regions of Human Teeth"

Dr. David Sweet, of the Bureau of Legal Dentistry, University of British Columbia, has completed a report on the potential to extract forensic DNA evidence from various areas of human teeth. The project investigated different areas of teeth (crowns and roots) and various types of teeth (incisors, molars, and pre-molars) to determine whether there are significant differences in the concentration of DNA in the different regions and classes of teeth.

FINGERPRINT RESEARCH — ACTIVE

PROJECT MANAGERS:

Julie Graham, CPRC (613) 990-9533
 Dr. Della Wilkinson, RCMP Forensic Identification Research Section (613) 993-3059

REPORT:

TR-05-2002 "Evidence Recovery From Chemically Hazardous Scenes" (Restricted)

In co-operation with Defence Research and Development Canada (Suffield), Dr. Wilkinson continues her research into the recovery of fingerprints from chemically contaminated crime scenes. This work has received funding from the US Department of Defense.



The project has three phases:

- a study of the effects of chemical agents on physical evidence such as fingerprints and DNA
- a study of the effects of decontamination on physical evidence
- a study of the effects of biological agents on physical evidence and development of procedures to separate the DNA of the biological agents from that of the physical evidence.

FORENSIC ENTOMOLOGY ACROSS CANADA — ACTIVE

PROJECT MANAGERS:

Dr. Gail Anderson, Simon Fraser University (604) 291-3589
 Julie Graham, CPRC (613) 990-9533
 Dr. Doug Strongman, Saint Mary's University (902) 420-5754

REPORTS:

Training video available. A 23 minute video, produced by the Audio-Visual Unit of 'E' Division Training, deals with the collection of entomological evidence.



- TR-09-2002 "Determination of Time of Death for Humans Discovered in Saltwater Using Aquatic Organism Succession and Decomposition Rates"
- TR-04-2002 "Insect Succession on Carrion in the Edmonton, Alberta Region of Canada"
- TR-10-98 "Freshwater Invertebrate Succession and Decompositional Studies on Carrion in British Columbia"
- TR-09-97 "Aquatic Forensics: Determination of Time Since Submergence Using Aquatic Invertebrates"
- TR-02-96 "Forensic Entomology: Determining Time of Death in Buried Homicide Victims Using Insect Succession"
- TR-03-96 "Forensic Entomology: The Use of Insects in Death Investigations To Determine Elapsed Time Since Death In Interior and Northern British Columbia Regions"
- TR-05-95 "Forensic Entomology: The Use of Insects in Death Investigations to Determine Elapsed Time Since Death"

Dr. Anderson continues to direct studies involving insect succession on pig carcasses in Saskatchewan and Manitoba. An additional project is currently underway in the Maritime region.

The information gathered from these studies will assist in determination of time-of-death in homicide cases. The goal is a countrywide database covering all of the biogeoclimatic zones within Canada.

KINGSTON GLOBAL POSITIONING SYSTEM (GPS) TRACKING EVALUATION — ACTIVE

PROJECT MANAGERS:

John Arnold, CPRC (613) 993-3737
 Scott Geoffrey, Kingston Police
 (613) 549-4660, ext. 2263
 Mickey Marshall, ATS, Asset Tracking Services Inc.
 (403) 213-5577

Global Positioning System (GPS) technology has matured to the point where it is reliable and has a number of applications. The purpose of this evaluation is to put the technology into the hands of the police user.

CPRC brokered an evaluation proposal between the Calgary company ATS, Asset Tracking Services Inc. and the Kingston Police. The project addresses the following:

- police use of GPS technology for battered women's assistance
- police use of GPS technology for cruiser tracking (automatic vehicle location)
- police use of GPS technology in the "man down" situation as a personal alarm

The project also focussed on obtaining sufficient experience to develop operational guidelines to optimize the performance of the GPS device for each scenario.

The project is nine months long, with the project report expected by the end of December 2003.

ON-LINE REPORTING — ACTIVE

PROJECT MANAGER:

John Evans, CPRC (780) 421-2853

Calgary Police Service is partnering with the CPRC in examining on-line reporting of complaints or information. The project will involve examining the results and experiences of other police agencies that have done this, as well as examining the technical methods employed by industry. The goal of the project is to complete a document outlining the pros, cons, and best practices of providing on-line reporting service to the public. This document will be made available to assist other agencies contemplating offering this service to the public.

ONTARIO POLICE COLLEGE (OPC) E-LEARNING: ADVANCED PATROL TRAINING — CONCLUDED

PROJECT MANAGER:

John Arnold, CPRC (613) 993-3737

The Ontario Police College (OPC) partnered with the CPRC to investigate the potential of e-learning using one of OPC's modules in its "Advanced Patrol Training" course. This course is currently being delivered on a compact disc in a classroom teaching environment. The objective of this project is to evaluate the long distance delivery of the material in a timely fashion over the Internet.

The "Crime Scene Protection" module was delivered to the OPC in May 2002.

OPEN SOURCE: OPEN ARCHITECTURE — ACTIVE

PROJECT MANAGER:

John Evans, CPRC (780) 421-2853

There is a rapidly emerging trend among governments and their public agencies, including police, to adopt

Open Source and Open Architecture computing environments. CPRC is liaising with police and government organizations within Canada and in other countries to examine the impact of this trend. Further information on this initiative will be forthcoming.

PHYSICAL MATCHING FEET TO FOOTWEAR — CONCLUDED

PROJECT MANAGERS:

Julie Graham, CPRC (613) 990-9533
Robert Kennedy, RCMP Forensic Identification Research Services (613) 990-9086

REPORT:

TR-10-2001 "The Statistical Analysis of Footprint Data Report 2000–2001"

This project involved collecting and analysing statistical footprint data. The purpose of the project was to scientifically support the theory that feet can be identified to footwear. Results of this study were published by the American Academy of Forensic Sciences in the *Journal of Forensic Sciences*, Vol.48, No. 1, January 2003.

PRESSURE SENSITIVE PAINT (PSP) — ACTIVE

PROJECT MANAGERS:

Glenn R. Carroll, CPRC (613) 998-6341
Jean-Yves Vermette, RCMP Explosives Disposal & Technology Section (613) 993-7880

This project examines enabling technology that is used to simplify the instrumentation necessary to measure blast effects and to verify blast modelling methods. Accurate modelling information is necessary to mitigate blast attacks directed against buildings, motorcades, etc. Additionally, information gathered in this co-operative effort with the Department of National Defence can be used to provide the same service to soldiers and police officers deployed outside of Canada in peacekeeping roles.

In order for this modelling approach to be dependable, it must be verifiable. Verification is accomplished by conducting a sufficient number of live tests to conclude that the modeler is accurate enough for field use. Current technology demands that data is captured by

placing large numbers of pressure transducers in the blast zone, connecting them to oscilloscopes (eight channels per oscilloscope), then capturing outputs from the oscilloscopes for computer for analysis. This project attempts to develop a polymer (with bonded dye) with properties that will allow the pressures emitted from a blast to react with it in a way that indicates the precise pressure change across a surface coated with the polymer. The change, and therefore the data, is captured in one of two ways. Either the polymer property changes are retained long enough to capture via a video tape recorder, or the longevity of the property changes is short and must be captured via high speed photography. The question will only be answered after a usable quantity of polymer is synthesized and tested.

REMOVABLE EQUIPMENT PACKAGE (RS3P) — ACTIVE (RESTRICTED)

PROJECT MANAGER:

Glenn Carroll, CPRC (613) 998-6341

A modular system is being developed to allow portability and rapid deployment of equipment.

SURVEILLANCE KIT POWER SOURCE — ACTIVE

PROJECT MANAGER:

John Evans, CPRC (780) 421-2953

Many surveillance devices are limited in their performance due to power supply. CPRC is working with a Calgary electronics firm on the development of an alternate power source for these devices.

USE OF FORCE TRAINING SIMULATORS EVALUATION — ACTIVE

PROJECT MANAGER:

Glenn Carroll, CPRC (613) 998-6341

Having located a potential champion in academia, CPRC is continuing to facilitate an information gathering exercise aimed at:

- collecting and collating data and features of commercially available systems
- studying the pedagogical basis for simulator training

CATEGORY C — PROTECTING THE PUBLIC: TRAFFIC, CUSTODY, CRIME PREVENTION

CELL DESIGN — ACTIVE

PROJECT MANAGERS:

Nancy Chevrier, RCMP (613) 993-1993
Julie Graham, CPRC (613) 990-9533

REPORT:

- TR-03-2000 "Proposals for Modification and Design Changes to Jail/Holding Cells: Psychological Impact on Aggressive and Self Destructive Behaviour"
TR-06-2002 "The Perceived Characteristics of Holding Cell Environments"

The initial phase of this project was a study of the psychological impact of aggressive and self-destructive behaviour by detainees in holding cells. Recommendations from that study were incorporated in cell retrofits in selected detachments. Questionnaires were presented and a post retrofit survey was conducted. Results are currently being analysed and a final report is expected later in 2003.

CYBERCOPS: The Game — ACTIVE

PROJECT MANAGER:

John Evans, CPRC (780) 421-2853

"Cybercops" is an interactive computer game designed to educate older children (approximately 14–16 years) about the risks of Internet predators and to present strategies to keep them safe. It is based on a similar computer game called "Missing", which was designed for ages 11–14. "Missing" has had great success and is now used by schools and youth organizations around the world.

CPRC is contributing towards a training guide for police officers who will use this new product. For more information visit <http://www.livewwwires.com>

PEDESTRIAN CRASH TEST DUMMY — ACTIVE

PROJECT MANAGERS:

Eric Brewer, RCMP (250) 828-3139
Julie Graham, CPRC (613) 990-9533

Training courses in the area of Pedestrian Collision Reconstruction require dummies to prove formulae and collision dynamics. Crash testing allows technical investigators to observe first-hand what evidence may be found and where. Dummies provide the ability to examine the interaction between vehicles and bodies and this allows the student to better understand and deal with speed estimates and pedestrian trajectories. Personnel in the Mechanical Engineering Department of the University of British Columbia have designed and are in the process of completing a prototype dummy for use in training courses.

SMART SIDE: "Strategically Managing Applied Road-Safety Technologies: Stop Impaired Driving Everywhere" — ACTIVE

PROJECT MANAGERS:

John Arnold, CPRC (613) 993-3737
Jack Cronkhite, RCMP (306) 780-3130
John Evans, CPRC (780) 421-2853

The objective of this proposal—received from the RCMP North-West Region—is to stop impaired driving. This would be done by developing micro-technologies to detect ethanol molecules in the air of the passenger compartment of motor-vehicles and, if detected, cause the vehicle to perform certain actions to avoid collisions, or alert other road users and the police. Once the technical solutions are developed, a motor vehicle safety standard could be created through Transport Canada and US National Transportation Safety Board. Such a standard would require that the technology be included in any new vehicle sold in North America.

Given the capabilities of nano-technology, this is a realistic and achievable objective, and its technical feasibility is considered high. Enforcement and education, combined with engineering and the political will to create the vehicle safety standard, can end impaired driving. The proposed passive detection system, perhaps using nano-technology, could reduce today's sophisticated and expensive instruments to the micro-chip level.

CPRC, in collaboration with 'F' Division, has a contract with researchers at the University of Alberta to investigate the potential of these cutting edge technologies, in the hopes of identifying some breakthrough applications in the fight against impaired driving. The contract will focus on targeted research on potential possibilities, and then focussed examination of the chosen option(s). A report is expected in the coming year focussed on the next steps for the project. In parallel funding, sources are being approached to support the SMART SIDE project.

An aerial, black and white photograph of a forest. A path or road winds through the trees, leading from the bottom center towards the top center. The trees are densely packed, and the path is clearly visible as a lighter-colored line. The overall tone is dark and moody.

SPECIAL INITIATIVES

CHEMICAL, BIOLOGICAL, RADIOLOGICAL, AND NUCLEAR RESEARCH AND TECHNOLOGY INITIATIVE (CRTI)

In response to the events of September 11, 2001, the Canadian government set up a research and development program called **CRTI** (**C**hemical, **B**iological, **R**adiological, and **N**uclear **R**esearch and **T**echnology **I**nitiative). This five year R&D program is administered by Defense Research Development Canada (DRDC). The priority categories for the CRTI program are:

1. Lab Cluster Management and Operations
2. Collective Command, Control, Communications, Coordination and Information (C4I) Capabilities for CBRN Planning and Response
3. Equipping and Training First Responders
4. Prevention, Surveillance, and Alert Capabilities
5. Immediate Reaction and Near-Term Consequence Management Capabilities

6. Longer-term Consequence Management Issues
7. Criminal Investigation Capabilities
8. Science and Technology Dimensions of Risk Assessment
9. Public Confidence and Psycho-Social Factors

The CRTI proposal and project selection team had few evaluators who had any experience in dealing with the first responder community. For this reason, the CPRC's Chief Scientist served on the selection team which reviewed over three hundred and fifty (350) research proposals.

This experience provided an opportunity to forge a closer business relationship between CPRC and DRDC and to establish additional contacts for the CPRC network.

NATIONAL BUILDING SECURITY CODE

This project was brought to the NRC by the RCMP and the department of Public Works and Government Services Canada (PWGSC). In the summer of 2002, the Director of NRC's Institute of Research and Construction Fire Research program approached the CPRC to ask for assistance to develop this project. A contract was put in place and managed by CPRC to conduct Phase 1, the purpose of which was to poll the Canadian building security community to see whether there was the interest

and motivation to support developing a National Building Security Code. Over 200 surveys were sent out. The response indicated that there was interest.

This coming fiscal year, the CPRC will continue to work with the project team on phase 2 of the project, which will mean developing a full proposal and time line for a National Building Security Code.

POLICELEARN.COM (FORMERLY KNOWN AS PS3)



In 1997, John Arnold and John Evans of the CPRC, in response to the PS3 Initiative (Public Safety in the 3rd Millennium), developed the concept of a national not-for-profit consortium of police educators. The mandate of the PS3 Initiative was "to provide cost-effective information technology to policing in Canada". The PS3 initiative evolved into PoliceLearn.com. It was suggested that the creation of a national consortium of all police educators be explored and developed to provide various types of e-learning (including Internet-based) to all police officers in Canada.

The history of this initiative follows:

- May 2001: The initial concept was presented by CPRC to the CAPE (Canadian Association of Police Educators) conference in Vancouver, British Columbia.
- November 2001: The consortium approach was fully endorsed by the CPRC Executive Board.
- May 2002: CPRC presented the consortium concept to the members of CAPE at their National Conference in Halifax, Nova Scotia.
- August 2002: CPRC presented the concept, now known as PoliceLearn.com (PLC), to the members of the CACP (Canadian Association of Chiefs of Police) at their annual conference in Quebec City, Quebec.

- September 2002: The CPRC, in cooperation with the Canadian Association of Police Educators (CAPE), sent an invitation to the entire Canadian police community to participate in the creation of the not-for-profit PLC consortium that would support the development and delivery of various types of e-learning to the Canadian police community. The goal of the consortium is to bring high quality police training and technology courses to police learners nationwide ("by policing for policing").
- February 2003: Twenty-seven stakeholders representing the Canadian provincial police colleges, major Canadian police services, and the NRC/ CPRC met at the National Research Council in Ottawa to create PLC's strategic plan. This meeting generated PLC's Vision, Mission, and Corporate Values/Principles. A six member working group was established to direct the development of a PLC business plan and incorporation document for the next meeting, held in Ottawa May, 2003.

It is anticipated that PLC will open for business in 2004.

For further information on the PLC initiative contact:
John Arnold at John.Arnold@nrc-cnrc.gc.ca or
John Evans at John.Evans@CPRC.org

PROJECT BLUEBEAR

As indicated in last year's report, CPRC hosted a technology showcase on facial recognition at the National Research Council in Ottawa. As a result of the interest shown, CPRC, working in collaboration with the Ottawa company VisionSphere Technologies (VST), started to work on the PS3 pilot project on facial recognition technology (FRT). This pilot project is called "BlueBear".

VST was selected for this pilot project because it has developed an advanced, fully-integrated FRT system. Their inexpensive camera is software controlled, dramatically improving the accuracy, reliability and scalability of the technology in operational conditions. The FRT converts existing "mugshot" pictures to a facial recognition bio-metric. This digital "template or number" is then stored in a computerized facial recognition database. The computer's rapid search capabilities then produces a match—with varying degrees of accuracy—from this facial recognition database.

The production of the facial recognition bio-metric allows police investigators to carry out FRT searches using a captured suspect mugshot, as well as police artist composite sketches. The pilot project will also evaluate images extracted from video surveillance tapes, news video, passports, photographs, and negatives to determine the FRT's degree of accuracy.

This is the first PS3 project where promising technology is being rolled-out to the police community, providing them the opportunity to evaluate promising technologies in a non-operational test bed environment. The Chatham-Kent, Windsor, and York police services volunteered to become members of the pilot project.

The major goal of project BlueBear is to examine the many aspects of this technology to see if it is a worthwhile investigative tool in the police environment.

The project is divided into two main phases. They are as follows:

PHASE I: FRT STAND ALONE EVALUATION

VST is providing a FRT system, at no cost, for the duration of the project. All the necessary hardware and software will be included for network-based suspect identification, using face recognition technology. The FRT system requires no special lighting. Enrolments are done in minutes; searches in seconds. VST will provide training and technical support. Software will be provided to convert existing digital mug shot databases to the FRT. Participants will provide a written evaluation.

PHASE II: SHARING INFORMATION USING FRT OVER A SECURE NETWORK

Police services will be given access to a secure network that will link them to the other pilot members' databases. The success of the pilot project will depend upon all police services adhering to a strict set of protocols. Each police service will co-operate, report, and seek assistance from CPRC for the duration of the project. Each department's database will remain under their ownership. Police services linked to BlueBear will be able to quickly search mug shot records of all participating police services, verifying identities and locating duplicates or multiple suspect identities.

Over the past year, progress on this project was limited due to the amount of time required to get official police approvals for the pilot project. It anticipated that the pilot will be completed by the Fall of 2003.

SCCAN: SECURITY COMMUNITIES CANADA

The events of 9-11 indicated that, more than ever before, the business of security and public safety is critical to the well being of Canadians. New ways of doing business to quickly respond to these pressures must be in place to guarantee the safety and security of our communities. In order to address fast emerging safety and security issues from both government and business perspectives, it is necessary to quickly, effectively and efficiently communicate and network to address situations such as the terrorist attacks of September 11, 2001.

To have an impact on terrorism, we need to know what innovative technologies are available in Canada. First we need to examine what technologies can be applied immediately to the terrorism problem. Then we need to identify potential technologies that could be used. It is possible that Canadian capabilities are not well known. This is where security communities become important, by sharing the information that they have.

A security community is a regional collection of security technology. Its main purpose is to provide a forum for networking and collaboration—a voice and focus for the public safety and security community, from the user perspective and the provider (industry) perspective. The community provides a level of comfort to meet, discuss, share, and educate the users and providers in the field of security and public safety technology issues.

The proactive approach of the Security Communities Canada (SCCAN) was developed by the CPRC and the National Research Council (NRC), in partnership with NRC's Canadian Technology Network (CTN). SCCan supports and maintains the necessary dialogue to get security issues dealt with today, rather than tomorrow. NRC's Industrial Research Assistance Program (IRAP) has a crucial role to play in the technology identification process. There is no other organization in Canada that has the connectivity and knowledge of what is going on in the Canadian technology community of the small- to medium-sized enterprises (SMEs). In a typical year, IRAP deals with about 12,000 SMEs, and only some of these have technology that is appropriate to user needs. The SCCan initiative addresses this void.

The objectives of SCCan are to:

- provide an identity for the Canadian technology companies in matters concerning public safety and security issues
- share and discuss technology issues of importance to the safety and security of Canadians
- provide a venue that allows for dialogue and awareness of local capabilities between the developers and the users of these technologies
- create an environment for discussion of problems and solutions
- provide a voice for local input into government security concerns
- provide a platform for inter-regional exchanges of capabilities
- connect, via the Internet, regional security clusters for the benefit of all Canadians

The initial SCCan Forum was held November 20, 2002. CPRC, with the assistance of two students, worked with IRAP and CTN to organize the event, which was attended by more than 250 people. The SCCan web-site (www.securitycommunities.org) was created with the assistance of NRC's Canadian Institute of Scientific and Technical Information (CISTI). SCCan has enabled CPRC to interact with Industry Canada, Department of Foreign Affairs and International Trade, Defense Research and Development Canada, the Atlantic Opportunities Agency, the Canadian Commercial Corporation, Communications and Information Technology Ontario, Photonics Research Ontario, PRECARN, and a number of local companies.

Four potential SCCan forums are in the planning stage for 2003. They include Alberta, Sault Ste. Marie, St. John's, and Halifax.

For further information on the SCCan initiative contact John Arnold at John.Arnold@nrc-cnrc.gc.ca

An aerial, black and white photograph of a forest. A path or road winds through the trees, leading from the bottom center towards the top center. The trees are densely packed, and the path is clearly visible as a lighter-colored line. The overall tone is dark and moody.

LINKS AND LEVERAGES

TECHNICAL REPORTS AND MEMORANDA

This section lists all the Technical Reports and Technical Memoranda that the CPRC has published since 1997. These documents can be downloaded from our web site at www.cprc.org. As well, the web site contains a complete listing of earlier Technical Reports and Memoranda, which are also available for downloading.

It should be noted that in 2000, CPRC ceased using the designation "Technical Memorandum". All documents containing scientific and technical information about CPRC projects are now termed "Technical Reports".

2003 TECHNICAL REPORTS

- TR-01-2003 "Development of a Robot Accessory for Fuming Fingerprint Evidence"
- TR-02-2003 "Collapsible Baton Study"
- TR-03-2003 "Comprehensive Assessment of the Potential to Extract Forensic DNA Evidence from Various Regions of Human Teeth"

PREVIOUS TECHNICAL REPORTS

2002

- TR-01-2002 "PS3 Workshop"
- TR-02-2002 "Coverup: Protective Covers for Evidence"
- TR-03-2002 "Resistance of Exterior Walls to High Velocity Projectiles"
- TR-04-2002 "Insect Succession on Carrion in the Edmonton, Alberta Region of Canada"
- TR-05-2002 "Evidence Recovery from Chemically Hazardous Scenes" (**Restricted**)
- TR-06-2002 "The Perceived Characteristics of Holding Cell Environments"
- TR-07-2002E "Vehicular Terminals and Visual Fatigue: Patrol Officers with the Sherbrooke Regional Police (SRP)"
- TR-07-2002F « Terminaux véhiculaires et fatigue visuelle : le cas des patrouilleurs du service de police de la région sherbrookoise (SPRS) »
- TR-08-2002 "The Conducted Energy Weapon Evaluation Report"
- TR-09-2002 "Determination of Time of Death for Humans Discovered in Saltwater Using Aquatic Organism Succession and Decomposition Rates"

2001

- TR-01-2001 "The Eye in the Sky: Evaluation of Police Helicopter Patrols (The London Police Service Helicopter Research Project)"
- TR-02-2001 "Evaluation of the Test Delivery of the Investigator's Guide to Internet Relay Chat"
- TR-03-2001 "Illicit Crop Information Management Using Satellite Imagery"
- TR-04-2001 "Drug Section Safety Cabinet"
- TR-05-2001 "Crowd Management and Conflict Resolution Pilot Workshop Evaluation"
- TR-06-2001 "Arson Crime Linkage Analysis System (ACLAS)"
- TR-07-2001 "Canadian Police College Library Catalogue on the Internet"
- TR-08-2001 "Underwater Digital Photography Equipment for Evidence Recording"
- TR-09-2001 "Hangings: A Practical Study of Ligatures and Suspension Point Morphology"
- TR-10-2001 "The Statistical Analysis of Footprint Data Report 2000-2001"
- TR-11-2001 "Side Scan and ROV Based Sonar for Locating Submerged Cadavers"
- TR-12-2001 "Conducting Internet Operations & Investigations Manual (CIOIM2000)"
- TR-13-2001 "CIOIM Supplement 1: Child Pornography Investigations (CIOIM Supp1)"
- TR-14-2001 "CIOIM Supplement 2: Using AOL & ICQ (CIOIM Supp2)"
- TR-15-2001 "CIOIM Supplement 3: Deception Hosts (CIOIM Supp3)"
- TR-16-2001 "CIOIM Supplement 4: Digital Officer Safety (CIOIM DOS)"

2000

- TR-01-2000 "TASER Technology Research Paper"
- TR-02-2000 "Update on Footprint Research"
- TR-03-2000 "Proposals for Modification and Design Changes to Jail/holding Cells: Psychological Impact on Aggressive and Self Destructive Behaviour"

1999

- TR-01-99 "Low Back Pain Among RCMP Officers: An Investigation Into Vehicles, Duty Belts and Boots"
- TR-02-99 "Back Pain in a Large Canadian Police Force"

1998

TR-01-98E	"Vision Standards in the RCMP: Are They Reasonable and Fair?"
TR-01-98F	« Normes visuelles de la GRC : Sont-elles raisonnables et équitables? »
TR-02-98E	"To Wear or Not To Wear: A Survey on Current Contact Lens Use in the Royal Canadian Mounted Police"
TR-02-98F	« Sondage sur le port des verres de contact à la Gendarmerie royale du Canada (GRC) »
TR-03-98	"Lead Shot Penetration in 10% Ordnance Gelatin"
TR-04-98	"Physical Ability, Fitness and Police Work"
TR-05-98E	"Violent Incidents"
TR-05-98F	« Incidents violents »
TR-06-98	"Ontario Provincial Police Holster Committee Report"
TR-07-98	"Computer Assisted 2D and 3D Comparison of Bite Mark Evidence and Tooth Exemplars"
TR-08-98	"Incidence of Human Bite Marks in a Selected Adult Population"
TR-09-98	"Multicultural Communication Awareness for Police"
TR-10-98	"Freshwater Invertebrate Succession and Decompositional Studies on Carrion in British Columbia"
TR-11-98	"Penetration of Exterior House Walls by Modern Police Ammunition"

PREVIOUS TECHNICAL MEMORANDA

2000

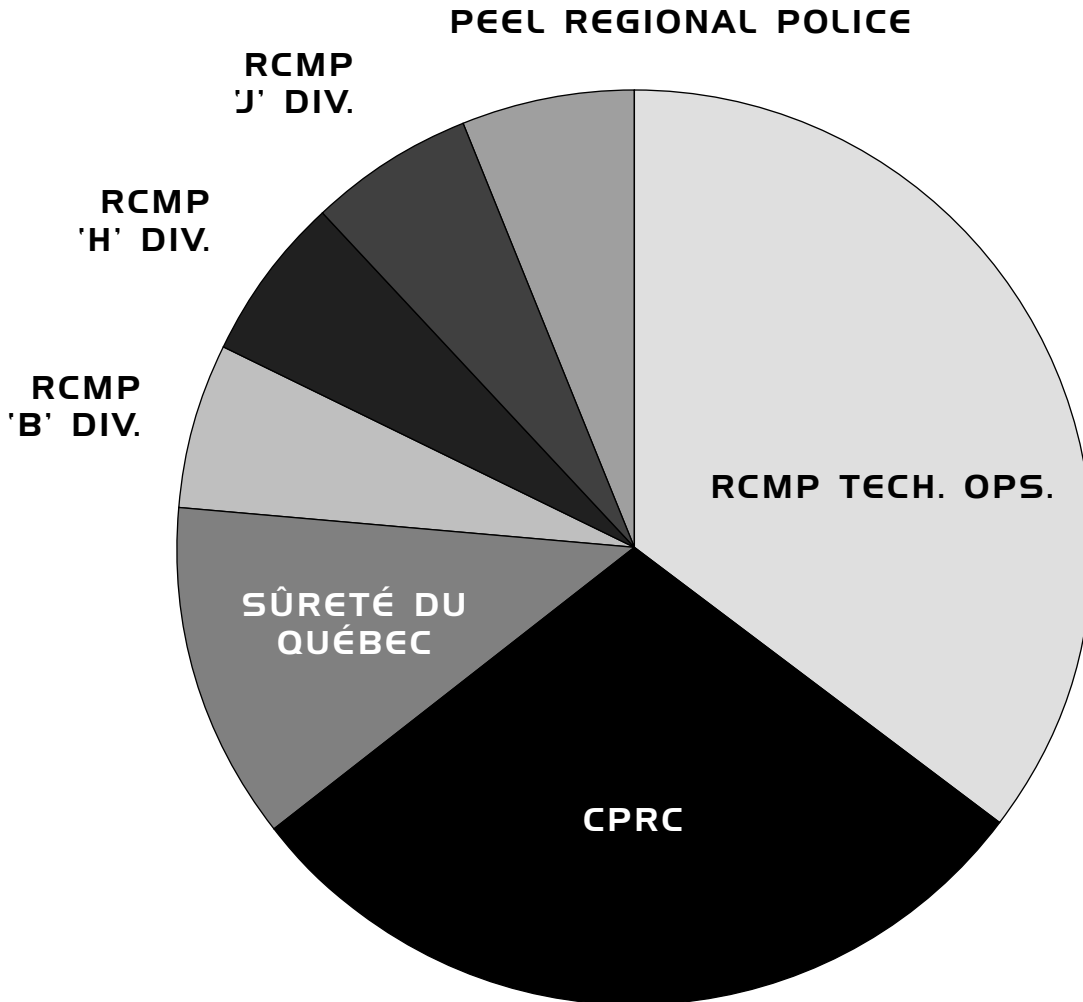
TM-01-2000	"Evaluation of the Millennium Backsaver Suspender"
TM-02-2000	"Needs Assessment for Microwave Imaging"
TM-03-2000	"Nylon Duty Belt Field Trials"
TM-04-2000	"Evaluation of the ResQ Disc"
TM-05-2000	"Introduction to Security: Computer, Internet, Network Security (Secman2000)"

1999

TM-01-99	"Saving Court Time Using A Visual Presenter"
TM-02-99E	"Crime Scene Protocols for DNA Evidence"
TM-02-99F	« Protocole de recherche d'éléments de preuve génétiques sur les lieux du crime. »
TM-03-99	"Evaluation of International Colour Code System"
TM-04-99	"Practical Applications of Digital Imaging in the Field of Forensic Firearms Identification"
TM-05-99	"12 Gauge Bean Bag Ammunition Penetration"
TM-06-99	"Laser Range Finders in Forensic Firearms Examination"

1998

TM-01-98	"Comments on the Use of Capsaicin Spray"
TM-02-98E	"Common Chemical Techniques Used For Latent Fingerprint Detection"
TM-02-98F	« Techniques chimiques courantes de détection des empreintes digitales latentes »
TM-03-98	"Improvements to Police Forage Cap Design"
TM-04-98R	"Prototype Audio/Video Transmitter/Receiver" (Restricted)
TM-05-98	"Edge of Light Operational Assessment"
TM-06-98	"Ampel Probe Evidence Collection Device"
TM-07-98	"Emergency Equipment Mounting Bracket"
TM-08-98	"OC Spray - A Review of its Possible Risks Including Carcinogenicity"
TM-09-98	"Communicable Diseases Standards - Ontario Policing Standards Manual"
TM-10-98	"Testing of Garment Components of Crowd Control Equipment in Relation to Protection Against Heat and Flame"
TM-11-98	"Advanced Internet Investigations Course Evaluation Report"
TM-12-98	"Testing of the Road Spike as a Tire Deflation Device"



HAZARDOUS MATERIAL PORTABLE BURN SYSTEM

Leveraging limited financial resources is an important key in CPRC's product development strategy. For example, CPRC has partnered with RCMP Technical Operations Directorate, who have in turn collaborated with other Canadian law enforcement agencies, to develop a hazardous material portable burn system. A project this size would normally be out of the reach of a single agency.

By bringing together several organizations, and providing seed funding, the CPRC is able to give life to innovative research that might not otherwise be possible. For more details on the hazardous material portable burn system project, please see the project description under Category A.

ASSISTANCE TO THE PRIVATE SECTOR

In addition to the companies involved in our projects and technology showcases, CPRC offers assistance to enterprises in the public safety field. Such assistance includes provision of information, consultation, brokerage, and general networking. The following is a listing of companies we have worked with in the past year. For more information on any of these companies or our services, please contact us at cprc@cprc.org

- Academic Press (publishing), London, UK
- Agilent Technologies Inc., St-Laurent, QC
- Allwend Consultants (information technology consultants), Ottawa, ON
- AmikaNow! Corporation, Kanata, ON
- Anjura Technology Corporation (business processes), Ottawa, ON
- Arius3D, Toronto, ON
- AST Asset Tracking, Calgary, AB
- Bajai, Ottawa, ON
- Biokinetics & Associates Ltd., Ottawa, ON
- Bosik Consultants Limited, Manotick, ON
- CAI Inc. (software), Ottawa, ON
- Canadian Bank Note Company, Ottawa, ON
- Canadian Network Systems Group, Brampton, ON
- CATA, Ottawa, ON
- Caris Universal Systems (geographical information systems), Fredericton, NB
- C-Com Satellite System Inc., Ottawa, ON
- CIRI Lab, Gatineau, QC
- Cyberdev, Montreal, QC
- Davtair Industries (metal fabrication), Ottawa, ON
- DNA Genotek Inc, Ottawa, ON
- DSM Law Enforcement, Orangeville, ON
- eConcordia, Montreal, QC
- EEDO, Gatineau, QC
- EMS Technologies, Ottawa, ON
- Engine-Lock, Gatineau, QC
- EOD Performance (bomb disposal equipment), Ottawa, ON
- EWA (intelligence systems), Herndon, VA, USA
- Exploranium, Mississauga, ON
- Forensic Technologies, Montreal, QC
- Gigatron, Ottawa, ON
- Guigne Industries, St. John's, NL
- Heimann Systems Inc, Laval, QC
- HEFTI, Ottawa, ON
- HGI Wireless, Inc., Woodridge, ON
- I2 Inc., Springfield, VA, USA
- Identix, Penticton, BC
- IdMouse Montreal, QC
- Innuktun Services (robotics), Nanaimo, BC
- OBZERV (vision systems), Quebec City, QC
- Integrated Telecommunications Systems — Special 'I', Vancouver, BC
- Keigan Systems Inc., London, ON
- King Carter Inc. (inventor, moulding expert), Kingston, ON
- LDI3 (forensic diagnostics), Ottawa, ON
- Learn Stream (e-learning), Fredericton, NB
- Life-Safer, Inc. (rescue device), San Diego, CA, USA
- Lojack Canada (vehicle recovery), Toronto, ON
- M83 Technologies Inc., Victoria, BC
- March Networks (video systems), Kanata, ON
- Maxwell Technologies, Belleville, ON
- Mawashi Inc., Laval, QC
- Med-Eng Systems Inc. (bomb and riot suits), Ottawa, ON
- Microsoft, Redmond, WA, USA
- MSA Canada, Arnprior, ON
- NBC Team Ltd., Fort Erie, ON
- Nokia Internet Communications, Ajax, ON
- Nor E First Response Inc., Bellingham, WA, USA
- NORLEANS Technologies Inc., Ottawa, ON
- NOVO Technologie Inc., Lévis, QC
- Okulus, Ottawa, ON
- PCI Geomatics, Richmond Hill, ON
- Phoenix Bio-Tech Corp. (filtration/fume hoods), Toronto, ON
- PredictiveIT (application service provider), Ottawa, ON
- Premier GPS (global positioning satellite systems), Calgary, AB
- Proparms Ltd, Carignan, QC
- RLX, Woodlands, TX, USA
- Rightsmarket, Toronto, ON
- RSA Security, Ottawa, ON
- Scintrex Trace, Ottawa, ON
- S.I.C. Biometrics, Vaudreuil-Dorion, QC
- Salient Manufacturing & Security Products, Brampton, ON
- SAS Institute (Canada) Toronto, ON
- Scienton Technologies Inc., Toronto, ON
- Senstar-Stellar Corporation, Carp, ON
- StorageQuest (digital storage systems), Ottawa, ON
- SUN Microsystems (computer systems), Ottawa, ON
- The Current Sales Corporation, Port Moody, BC
- The Halifax Group (information technology), Ottawa, ON
- Tek Gemini, Ottawa, ON
- Thomson Nielsen Electronics, Nepean, ON
- Versaterm (police information systems), Ottawa, ON
- Visionsphere, Ottawa, ON
- Whatman-Fitzco (filtration), UK
- WinMagic Inc., Mississauga, ON
- ZOX Technologies, Toronto, ON
- XWAVE, Ottawa, ON
- 4th Watch Systems (information technology), Toronto, ON

INDUSTRIAL RESEARCH ASSISTANCE PROGRAM (IRAP)

Helping the Police by Supporting Industry

The police community often does not network with the Canadian innovation community. One major objective of CPRC is to provide the opportunity for these two diverse communities to interact.

The National Research Council's (NRC) Industrial Research Assistance Program (IRAP) is a major Canadian player in the innovation community. IRAP provides Canadian industry with technical advice, linking companies with appropriate technologies and assisting industrial research, development, and adaptation. IRAP's 270 Industrial Technology Advisors (ITAs) deliver this highly successful innovation program to Canada's small-to medium-sized enterprises, thereby sharing risk in new product development. IRAP's 2002–03 contributory budget was approximately \$130 million.

IRAP works with CPRC's technical/operational experts to assist in evaluating potential IRAP projects in the police and security area. CPRC solicits operational feedback from police agencies to see if the IRAP client's proposal addresses a true police need and whether it can save time and/or money.

Through the "Technology Partner Associate" (TPA) process, CPRC and IRAP together match their client needs (for the CPRC, the client is the police; for IRAP, the client is Canadian industry). This process encourages the local ITA to deal directly with their local police community, and allows decentralization of local police needs and local industry products.

We encourage anyone in the Canadian police community to contact us whenever they become aware of a potential police product which may qualify for IRAP support. If you need assistance in identifying your local NRC-IRAP ITA, do not hesitate to contact the CPRC or call the National Research Council number that can be found in your local phone book.

TECHNOLOGY PARTNER PROGRAM

The CPRC receives many requests from industry concerning new and proposed products or new technological ideas that might benefit the police community. As well, there are many technological ideas and requests that come from the police community itself. New products or ideas must be evaluated by the police community with respect to operations (for example, does it serve a police need, does it make the job easier, more effective, or more cost efficient). When the CPRC receives a proposal, it sends it to a Technology Partner Associate (TPA) in a police agency, who in turn circulates the idea within their department to get an operational opinion. This opinion is returned to the CPRC, which then decides on the course of action.

In the case of a new prototype product, which might be the product of research or an idea from industry, the CPRC will want an operational opinion on its effectiveness. Most often these new ideas are in the form of a single prototype. The CPRC canvasses the TPAs to solicit evaluators who are interested in testing a prototype. If the CPRC is able to get a number of departments to evaluate the product, they have a corresponding number of pre-production prototypes made and sent for evaluation under criteria that are set

by the CPRC and industry. A report, addressing each of the criteria, is written by the department and submitted to the CPRC. This enables industry to provide a better final product. The evaluation of a new product is an interactive process which, in the end, provides a new and better device to the police community.

The Technology Partner Program also provides a mechanism for dissemination of some police technical information received by CPRC, such as reports, brochures, videos, and the like.

The Industrial Research Assistance Program of the National Research Council (NRC/IRAP) is of prime importance in the "technology partner" implementation. IRAP participation is encouraged in all regions of Canada by having the regional IRAP Industrial Technology Advisor (ITA) interact with the local police department. As noted earlier in this report, the IRAP ITAs are responding positively to the CPRC TPA network.

TECHNOLOGY PARTNER ASSOCIATES

POLICE SERVICE

Abbotsford
 Barrie
 Belleville
 Brandon
 Brockville
 Calgary
 Camrose
 Canadian Pacific Railway
 Delta
 Durham Regional
 Edmonton
 Fredericton
 Gatineau
 Halifax Regional
 Halton Regional
 Hamilton
 Kingston
 Lévis
 London
 Medicine Hat
 Miramichi
 National Defence - DND
 Defence R&D Canada - Valcartier
 New Westminster

 Niagara Regional
 Ontario Provincial Police
 Ottawa Police Service
 Peel Regional
 RCMP 'D' - Winnipeg
 RCMP 'E' - Vancouver
 RCMP 'H' - Halifax
 RCMP 'J' - Fredericton
 RCMP 'K' - Edmonton
 Regina
 Revenue Canada
 Royal Newfoundland Constabulary
 S.P.C.U.M.
 Saint John
 Samia
 Saskatoon
 Sault Ste Marie
 Solicitor General
 Solicitor General
 Greater Sudbury
 Summerside
 Sûreté du Québec
 Taber
 Thunder Bay
 Toronto
 Vancouver
 Victoria
 Waterloo Regional
 Windsor
 Winnipeg
 York Regional

TPA CONTACT

Insp. R. Gehl
 Ms. Barb Howse
 S/Sgt. Tony MacKinnon
 Chief F. Richard Bruce
 Chief Barry King
 Ms. Diana Bloom
 Insp. Darrell Kambeitz
 Insp. Bruce Berringer
 Sgt. Tom Davidson
 Supt. Greg Mills
 Ms. Carol Wagar
 Mrs. Michele Cronin
 Mme Sylvie Deschamps
 S/Sgt. Daniel Young
 Mr. Keith Moore
 Sgt. Alison Hood
 D/Chief Robert Napier
 Deny Blouin
 Sgt. Scott Blandford
 Insp. Gord Earl
 Sgt. Robert Bruce
 MWO Pete MacFarlane
 Mr. Phil Twardawa
 Chief Constable
 Lorne Zapotichny
 Det Constable Craig Moore
 C/Supt. Gary Witherell
 Sgt. Gerry Doucette
 Insp. Len Favreau
 S/Sgt. Kevin Miller
 Insp. Jim Begley
 Cpl. Al Harding
 Sgt. Bernie Arbour
 Mr. Wing Mah
 Ron Davis
 Pierre Pilon
 Sgt. Robert Escott
 Alain Tonthat
 A/Deputy Chief Brian Fillmore
 Sgt. Frank Rodin
 Mr. Don Bodnar
 Insp. Art Pluss
 J.P. Labonte
 Noreen Alleynea
 Ms. Liz Mazza
 Ian N. Drummond
 D/DG Normand Proulx
 Terry Dreddy
 Mr. Peter Worrell
 Ms. Susan Deane
 Insp. Dave Jones
 Sgt. Ole Jorgensen
 S/Sgt. Matt Torigian
 Mr. Barry Horrobin
 Insp. Gary Sandell
 Supt. Bruce Herridge

PHONE

(604) 859-5225
 (705) 725-7025
 (613) 966-0882
 (204) 729-2305
 (613) 342-0127x4222
 (403) 206-8425
 (780) 672-5940
 (403) 319-7007
 (604) 946-4611x5284
 (905) 579-1520x4302
 (780) 421-2249
 (506) 460-2412
 (819) 595-7680
 (902) 490-5138
 (905) 825-4830
 (905) 546-3870
 (613) 549-4660
 (418) 839-1922x402
 (519) 661-2583
 (403) 529-8413
 (506) 623-2124
 (613) 945-7279
 (418) 844-4000x4393

 (604) 517-2410
 (905) 688-4111x4222
 (705) 329-6178
 (613) 236-1222x5556
 (905) 453-3311x4740
 (204) 983-8138
 (604) 264-2040
 (902) 426-7460
 (506) 452-4188
 (780) 412-5591
 (306) 777-6615
 (613) 954-4112
 (709)729-8242
 (514) 280-6922
 (506) 648-3301
 (519) 344-8861x6078
 (306) 975-8336
 (705) 759-7350
 (613) 842-1849
 (416) 314-3015
 (705) 675-9171x2630
 (902) 432-1201
 (514) 598-4411
 (403) 223-8991
 (807) 625-1307
 (416) 808-7769
 (604) 717-2749
 (250) 995-7297
 (519) 653-7700x713
 (519) 255-6866
 (204) 986-7870
 (905) 830-0303x7900

Email

rgeh@city.abbotsford.bc.ca

 r.bruce@city.brandon.mb.ca
 bking@brockvillepolice.com
 dbloom@calgarypolice.ca
 dkambeitz@camrose.com
 bruce_berringer@cpr.ca
 davidson@dccnet.com
 gmills@drps.ca
 carol.wagar@police.edmonton.ab.ca
 croninm@city.fredericton.nb.ca

 keith.moore@hrps.on.ca
 ahood@hamiltonpolice.on.ca
 admin@police.kingston.on.ca
 dblouin@ville.levis.qc.ca
 sblandford@city.london.on.ca
 gorear@city.medicine-hat.ab.ca
 cpsec@nbnet.nb.ca

 philip.twardawa@drcd-rddc.gc.ca

 lzapotichny@nwpolice.org
 ccmoore@nrps.com

 leonard.favreau@peelpolice.on.ca
 millerkj.ddiv_hq.ddiv

 al.harding@rcmp-grc.gc.ca
 barbour.jdiv_hq.nb.fredericton
 wing.mah@rcmp-grc.gc.ca
 rdavis@police.regina.sk.ca
 Pierre.Lab.Pilon@ccra-adrc.gc.ca

 brian.fillmore@cityofsaintjohn.com
 frodin@police.samia.on.ca

 a.pluss@cityssm.on.ca

 Elizabeth.Mazza@police.sudbury.on.ca
 idrummond@city.summerside.pe.ca
 normand.proulx@surete.qc.ca
 police@town.taber.ab.ca

 corporateplanning@torontopolice.on.ca
 pdjones@vpd.city.vancouver.bc.ca
 jorgenseno@police.victoria.bc.ca

 bhorrobin@police.windsor.on.ca
 gsandell@city.winnipeg.mb.ca
 257@police.york.on.ca

INTERACTION WITH OTHERS

The CPRC's mandate of developing equipment for the Canadian police community naturally involves interaction with others. Some of the many agencies and the interactions that took place during the year included:

CRIMINAL INTELLIGENCE SERVICE OF CANADA (CISC), CRIMINAL INTELLIGENCE SERVICE OF ALBERTA (CISA), CRIMINAL INTELLIGENCE SERVICE OF ONTARIO (CISO), AND THE ONTARIO TECHNICAL INVESTIGATORS ASSOCIATION (OTIA)

The CPRC regularly attends CISC, CISA, and CISO technical seminars that address current police technology and equipment issues.

FEDERAL PARTNERS IN TECHNOLOGY TRANSFER (FPTT)

The Federal Partners in Technology Transfer initiative brings together the various federal science-based departments and agencies involved in technology transfer. In addition to providing a forum for discussions on best practices, this organization provides excellent networking and learning opportunities. The CPRC is now able to participate fully in this organization because we share a membership with the RCMP Intellectual Property Office. Current initiatives through this organization include CPRC's input into an updated website (www.fptt-pftt.gc.ca) and knowledge management working group.

INTERNATIONAL ASSOCIATION OF CHIEFS OF POLICE (IACP)

CPRC exhibited at the 2002 IACP Law Enforcement Education and Technology Exposition in Minneapolis, Minnesota. In addition to highlighting all CPRC products and services, we featured the RCMP's youth initiative DEAL/CHOIX (www.deal.org and www.choix.org).

ONTARIO ASSOCIATION OF LAW ENFORCEMENT PLANNERS (OALEP)

As an associate member, CPRC representatives attend meetings of the Ontario Association of Law Enforcement Planners, contributing experience and expertise in the applications of technology. This organization is an excellent forum for the discussion of new ideas and issues of interest to police.

UNITED KINGDOM HOME OFFICE POLICE SCIENTIFIC DEVELOPMENT BRANCH (PSDB)

A Memorandum of Understanding (MOU) is in place between the United Kingdom Home Office Police Scientific Development Branch (PSDB) and CPRC to establish a program of coordination and collaboration for the research, development, evaluation, and operational use of law enforcement technologies and to enhance the existing co-operation between the two agencies.

UNITED STATES DEPARTMENT OF JUSTICE, NATIONAL INSTITUTE OF JUSTICE

CPRC has negotiated a Memorandum of Understanding (MOU) with the National Institute of Justice (NIJ) of the United States Department of Justice, to establish a program of coordination and collaboration for the research, development, evaluation, and operational use of law enforcement technologies and to enhance the existing co-operation between the two agencies. In addition to a pre-existing cooperative research and development agreement (CRADA) for the RCMP Laboratory's Forensic Automotive Paint Database, this MOU has led to joint projects with respect to the Firearms Reference Table (a firearms identification software database) and a multi-hit test standard for soft body armour. As well, on-going cooperation exists on a wide range of topics including less-than-lethal technologies, high speed pursuit interdiction, personal protective equipment, and contraband detection.

US/CANADA BILATERAL COUNTER-TERRORISM RESEARCH AND DEVELOPMENT MEMORANDUM OF UNDERSTANDING

CPRC's participation in the US/Canada Bilateral Counter-Terrorism Research and Development provides a means of exchanging information and initiating joint projects with American colleagues. The manager of CPRC is the Canadian chair of two of this group's committees (Forensic and Investigative Techniques Committee and the Technology Transition Advisory Panel).

UNIVERSITY OF ALBERTA (U OF A)

CPRC has been working with the University of Alberta (U of A) and their Industrial Liaison Office to establish a closer working relationship between leading edge university R&D and the police community. This initiative holds much promise and has been met with enthusiasm by all participants. Of particular note is the world-class status of the U of A Computer Science department in data-mining and machine-learning. Also, the National Nanotechnology Centre is currently being constructed at the U of A. Nanotechnology is likely to create some of the most revolutionary products since the microchip, and will have a tremendous and wide-ranging impact over the next two decades. We plan to have the police community involved and taking advantage of it right from the start.

PROTECTION OF INTELLECTUAL PROPERTY ASSETS

CPRC'S Role in Technology Transfer

Some of our most innovative solutions come from our own employees. Police personnel faced with not having the proper tools for their jobs will often design and build a prototype themselves. Do you have a piece of equipment or software developed by yourself or unit? Does your daily work involve research and development? The creation of a new invention or the development of a new technology is an example of an "intellectual property (IP) asset".

Intellectual property can fall into several broad categories. Some are defined by statute and are referred to as "hard" rights. These include assets that can be protected by patent, trademark, copyright, industrial design, integrated circuit topography, and plant breeders' rights. Others, referred to as "soft" rights, include trade secrets, know-how, and show-how. These really are assets and not only do they have value commercially, they can help you and your colleagues do your jobs more safely and effectively.

Collaboration with the private-sector is often the next step in order to design and build a prototype for field trial. Following such a successful trial, the collaborator may wish to license the technology and take it to market.

The Science & Technology Branch of the RCMP, in addition to providing staff to the CPRC, works closely with other sectors to manage RCMP and CPRC IP assets. Other police agencies can obtain general information regarding the management of their own IP assets from the CPRC. The CPRC can assist you in the technology transfer process and can provide general information regarding the management of IP assets.

A video-cassette entitled "Intellectual Property – Protecting Your Technology" is available from the CPRC upon request by fax at (613) 952-0156 or email: cprc@cprc.org.

SUBMITTING R & D PROPOSALS

At the centre of this annual report you will find a research and development (R&D) proposal form. It should be completed as fully as possible. An Executive Officer must sign the form (Chief of Police, Commanding Officer or equivalent).

You may keep the original and submit a copy to us.

The focus of the CPRC is research, development, or evaluation of police equipment.

GUIDELINES FOR ACCEPTANCE AND ESTABLISHING PRIORITIES

How does it make a difference?

The priority assigned to each project proposal will be based on a review of the following factors:

RISK FACTOR	frequency of potential use or occurrence
OPERATIONAL IMPACT	how widespread is the need in the community?
DOLLAR IMPLICATIONS	resource saving potential/dollar cost
PROGRESS/INNOVATION	operational effectiveness and innovation
ATTAINABILITY	technical risks and costs (adapt or create)
PARTNERSHIPS	potential for risk and cost sharing, degree of commercial viability

A project must also fit one of the following three categories.

CATEGORY A	Health and safety: protecting the police in hazardous situations
CATEGORY B	Operational effectiveness: fighting crime, gathering information, intelligence and evidence
CATEGORY C	Protecting the public: traffic, custody, crime prevention

As an illustration, a category B project that will save significant resources, be applicable throughout the community, and has a high chance of success may be given the same or higher priority than a project that may protect a police officer in a hazardous situation that occurs infrequently. Similarly, protecting the public with a device that controls high speed chases simply and safely may score first overall in the reviews. Our goal in prioritizing project proposals is to effectively and objectively reflect the priorities of the overall police community and its clients.

The results of the review will be retained on the project file for reference.



www.cprc.org



“RESEARCH AND DEVELOPMENT PROPOSAL”	« PROPOSITION EN MATIÈRE DE RECHERCHE ET DÉVELOPPEMENT »
<ul style="list-style-type: none">• APPEND EXTRA PAGES IF INSUFFICIENT SPACE• COMPLETE EMAIL SUBMISSIONS AVAILABLE AT WWW.CPRC.ORG	<ul style="list-style-type: none">• ANNEXER DES PAGES SUPPLÉMENTAIRES SI L'ESPACE EST INSUFFISANT• POUR OBTENIR UN FORMULAIRE ÉLECTRONIQUE COMPLET, CONSULTER WWW.CPRC.ORG
PLEASE TYPE AND FORWARD ORIGINAL TO CANADIAN POLICE RESEARCH CENTRE BOX 8885 OTTAWA, ONTARIO K1G 3M8 Fax (613) 952-0156	VEUILLEZ DACTYLOGRAPHIER ET TRANSMETTRE L'ORIGINAL À L'ADRESSE SUIVANTE : CENTRE CANADIEN DE RECHERCHES POLICIÈRES C.P. 8885 OTTAWA (ONTARIO) K1G 3M8 Télécopieur : (613) 952-0156

1. PROJECT TITLE	TITRE DU PROJET	CPRC FILE NO. No DE DOSSIER DU CCPR
		ORIGINATOR FILE NO. N° DE DOSSIER DE L'AUTEUR

2. ORIGINATOR/CONTACT (NAME - ADDRESS - TEL. NO)

AUTEUR/PERSONNE-RESSOURCE (NOM - ADRESSE -N° DE TEL.)

3. OBJECTIVE	OBJECTIF
---------------------	-----------------

4. BENEFITS -

HOW WOULD THE PRODUCT ASSIST POLICE OPERATIONS?

AVANTAGES -

QUELLE SERAIT L'UTILITÉ DU PROJET PROPOSÉ POUR LES OPÉRATIONS POLICIÈRES ?

5. HAS RELATED RESEARCH BEEN DONE BEFORE?

(IF YES, INCLUDE REFERENCES/CITATIONS)

A-T-ON DÉJÀ EFFECTUÉ D'AUTRES RECHERCHES DE CE GENRE ?

(SI OUI, INDIQUER LES RÉFÉRENCES BIBLIOGRAPHIQUES)

6. **CONSEQUENCE OF NON-APPROVAL** - IF THIS RESEARCH IS NOT APPROVED WHAT WOULD THE CONSEQUENCES BE? WHAT ARE YOUR CONTINGENCY PLANS TO MEET THE OPERATIONAL NEEDS ADDRESSED BY THIS RESEARCH?

CONSÉQUENCES DU REFUS - SI CETTE RECHERCHE N'EST PAS APPROUVÉE, QUELLES SERONT LES CONSÉQUENCES ? QUELLES AUTRES OPTIONS RÉPONDRAIENT AUX BESOINS OPÉRATIONNELS VISÉS PAR CETTE RECHERCHE ?

7. **ASSISTANCE BY ORIGINATOR** - HOW CAN YOUR ORGANIZATION ASSIST WITH THIS PROPOSED RESEARCH? PLEASE PROVIDE DETAILS
(A) FUNDING?
(B) TECHNICAL RESOURCES?
(C) OTHER WAYS?

AIDE DE L'AUTEUR - COMMENT VOTRE ORGANISATION PEUT-ELLE CONTRIBUER À CE PROJET DE RECHERCHE ? VEUILLEZ PRÉCISER
A) FINANCEMENT ?
B) RESSOURCES TECHNIQUES ?
C) AUTRE ?

8. **RESEARCH PERFORMER** - WHO WOULD YOU RECOMMEND DO THE PROPOSED RESEARCH? PLEASE PROVIDE DETAILS.
(A) YOUR AGENCY/DEPARTMENT?
(B) OTHER DEPARTMENT/UNIVERSITY/RESEARCH AGENCY

PERSONNE CHARGÉE DE LA RECHERCHE - À QUI CONFIEREZ-VOUS CE PROJET DE RECHERCHE ? VEUILLEZ EXPLIQUER
A) VOTRE ORGANISME/MINISTÈRE?
B) AUTRE MINISTÈRE-UNIVERSITÉ-ÉTABLISSEMENT DE RECHERCHE

SIGNATURES

ORIGINATOR/AUTEUR

DATE

SUPERVISOR/SUPERVISEUR

DATE

**EXECUTIVE OFFICER OF ORIGINATOR'S ORGANIZATION/
CADRE SUPÉRIEUR DE L'ORGANISATION DE L'AUTEUR**

DATE

