

**CPRC**



**CCRP**

HERC

---

**TM-19-94E**  
**Oleoresin Capsicum Spray**

By: S/Sgt. R.Bonar  
General Enforcement Branch  
Royal Canadian Mounted Police

TECHNICAL MEMORANDUM

**April, 1994**

**NOTE: Further information  
about this report can be  
obtained by calling the  
CPRC information number  
(613) 998-6343**

---

## SUMMARY

For a number of years police forces have been attempting to give their officers an alternative to using lethal force. The development of Oleoresin Capsicum products has shown considerable promise in this area.

Consequently, the Royal Canadian Mounted Police (R.C.M.P.) embarked upon a three month evaluation of three types of products; First Defense, Cap-Stun, and Punch II. These products were used in varying cases such as crowd dispersal, disarming suspects with various types of weapons, quelling prisoners, effecting arrests, and deterring vicious dogs. The tests were carried out in medium to large communities in British Columbia and the North West Territories. In a high percentage of the 164 cases, the products proved extremely effective when used properly.

The R.C.M.P. has adopted the use of capsicum spray along with the appropriate training. Those cases in which capsicum spray is used will be monitored over the following year.

## **1. INTRODUCTION**

For a number of years police forces have been attempting to develop a product to give their members an alternative to using lethal force. Mace was one of the first products on the market and is still used in many places in the United States. However, because of health concerns, it has not received widespread use in Canada and remains a prohibited substance.

The development of Oleoresin Capsicum products, an organic extract of cayenne pepper, has shown considerable promise in situations where less than lethal force is appropriate. As a result, the Deputy Commissioner Operations on 91-1 I-27 requested information to determine the feasibility of using this product.

An interim report was submitted on 93-01-20. This document is the final report.

## **2. HISTORICAL BACKGROUND**

In the fall of 1990, Capsicum was brought to the attention of General Enforcement Branch for evaluation as a possible disabling agent for use by S.E.R.T. or for Tactical Troop use.

GEB began to collect information on the chemical composition and the aerosol propellant used, to ensure the product was safe for use against people and animals as well as being environmentally friendly.

Literature was obtained from the British Columbia Police Commission who conducted a study between April/October 1991 and from the F.B.I.

Research was begun by looking into specific products and suitable holsters. Three (3) different manufactured products were selected which were environmentally friendly and had been used in the United States for a number of years. Authorization to conduct a three month evaluation in "E" Division was given by the Deputy Commissioner Operations on 92-07-03, and in "G" Division in August.

### 3. METHODOLOGY

Initially it was decided to test three (3) products at four (4) large detachments in "E" Division (Surrey, Nanaimo, Prince Rupert and Prince George). One of the products, ***First Defense*** delivered a stream of liquid while the other two, ***Cap-Stun*** and ***Punch II*** delivered a cloud or spray. One hundred and fifty canisters (150) of each were obtained and testing was to begin by 92-10-01 and last three (3) months.

Before testing began a request was received from "G" Division to conduct cold weather tests at Yellowknife and Iqaluit. As a result, Port Alberni was dropped from the detachments in "E" Division and sixty (60) canisters sent to "G" Division.

Policy guidelines were also developed on when to use the product and Divisions were to ensure members utilising the product were appropriately trained. Training involved approximately four hours of instruction relating to: History of Oleoresin Capsicum, Physical Effects, Decontamination/First Aid, Introduction of Test Products and Force Policy on use.

Testing actually began in Prince George on 92-10-12, in Surrey on 92-10-19 and Nanaimo on 92-11-02. Yellowknife and Iqaluit Detachments began testing on 92-11-02. Members selected were uniform personnel on General Duty and Traffic. Individual members carried each product for one month to allow them to experience and evaluate all three.

### 4. PRODUCT RESULTS/FINDINGS

#### **FIRST DEFENSE**

This product uses distilled water rather than isopropanol alcohol in its formula. The Capsicum is dispensed in a sharp stream with a contact distance of 10 to 12 feet, dependant on canister pressure.

#### **Advantages:**

1. The canister has a permanent safety which prevents accidental discharge.

2. The sharp stream allows for less cross-contamination, greater accuracy and **is minimally affected by wind.**
3. The distance of the stream gives an additional safety zone of approximately 5 feet over other products.
4. The canisters have a serial number which assists in inventory control.

**Disadvantages:**

1. Holster: The metal snap on the strap attaching the holster to the Sam Black has a tendency to wear and allow the holster to become insecure.
2. A slight delay in contaminating large areas due to the sharp stream.

**Product Rating # 1.**

**Cap-Stun**

This product utilizes isopropanol alcohol in its formula and dispenses a thick stream with a maximum contact distance of 5 to 7 feet. Contact distance diminishes as the canister pressure is reduced.

**Advantages:**

1. The cone pattern makes it ideal for use in crowds or clearing rooms as it places a large quantity of Capsicum into the air.

**Disadvantages:**

1. The canister utilizes an external trigger system which has two major faults:
  - (a) The trigger assembly can break off rendering the canister inoperable and exposing the member to contamination when attempting to reattach the trigger. This happened on ten (10) occasions.
  - (b) The trigger becomes entangled in clothing or the holster and since the canister has no permanent safety it exposes the member to accidental discharge.

2. The cone disbursement pattern has a tendency to contaminate a large area creating cross-contamination problems.
3. The canister safety tab does not remain with the canister after the first use. This raises the possibility of accidental discharge.
4. The Holster: The canister is secured by a plastic retainer clip which secures the trigger assembly. The rivet snaps for the retainer clip make it very difficult to return the canister to the holster. The retainer clips have also broken rendering the holsters inoperable.

**Product rating # 2.**

**PUNCH //**

This product utilizes isopropanol alcohol in its formula and dispenses Capsicum in a wide cone pattern for a distance of 3 to 4 feet.

**Advantages:**

None.

**Disadvantages:**

1. The short dispensing distance exposes members to cross-contamination and requires that they be very close to the suspect.
2. There is no safety of any kind and because of the shape and design it is difficult to determine the front from the back. In low light and darkness members are exposed to self-contamination.
3. The holster must be threaded onto the Sam Black making it difficult to carry or remove without taking the belt apart.
4. The canister is difficult to remove as the sides of the holster extend to the top of the canister.

**Product Rating # 3.**

## 5. TEST RESULTS

Testing concluded on 93-02-02 and the three different products were used a total of one hundred and sixty-four (164) times. "E" Division reported one hundred and fifty (150) incidents and "G" Division fourteen (14). The spray has been used to disperse crowds, disarm suspects wielding knives and crowbars, to quell prisoners in the cell block, remove impaired drivers from vehicles and deter dogs.

There were approximately two hundred and nine (209) members involved in the test program and the results are very favourable. On some occasions, where the suspect may be mentally disturbed, on drugs and violent, it may not work. It will force their eyes shut but the person could continue to thrash about. This happened during seven (7) of the one hundred and sixty-four (164) incidents. The spray is equally effective outdoors or inside and on males or females. Cold weather does not have any effect on the product.

Perhaps the greatest benefit reported is where our members have been facing an armed person (knife or club), and the suspect was forcing the escalation of violence. Our members were able to stand back 8 to 10 feet and spray the suspect. On all occasions he dropped the weapon and was taken into custody. This avoided possible injury to the suspect or the members involved.

It has been used nine (9) times on vicious dogs. It was effective seven (7) times in that the dogs ran away. On one (1) occasion the dog did not leave and on the other (pit bull) it had no effect. Testing was conducted on aggression trained dogs, placed in the attack command. There was minimal or no effect upon the animal and quite often the dog became more aggressive.

The spray has been used thirty-two (32) times to quell unruly persons in the cell block, drunk tank or in the booking area. Incidents involved fights in the drunk tank, attempted suicides, assaults upon members, guards and matrons. This use revealed a problem of cross-contamination to guards and other prisoners. The type of spray used directly contributed to this problem. The sharp stream delivered by *First Defense* greatly reduced the risk of contamination. This is one area where indiscriminate use by members can create contamination problems and the perception of excessive force.

It has been used on two (2) occasions to control a drunken bar crowd while arresting persons within the crowd. It has also been successful in controlling house parties involving 80 to 100 people. A spray over the heads of the participants dispersed the crowd on all occasions.

There were only five (5) complaints received concerning the use of this product. Four (4) were resolved informally and one (1) is still under investigation.

## **6. CONCLUSIONS**

The results of this study have been extremely favourable. The tests confirmed that Oleoresin Capsicum is an effective alternative to the use of lethal force, and that which is designed to incapacitate, eg. the defensive baton. An unexpected benefit was the positive effect it had upon morale by members who were trained in using the product. Members responding to occurrences involving the threat of bodily harm or injury find that Capsicum provides them with an effective alternative to physical confrontation.

From a management perspective the Force might realize significant savings in time and money currently devoted to investigations of excessive force and the use of firearms. Furthermore the reduction of the psychological and physical effects experienced by our members and their families due to their involvement in occurrences involving the use of force will pay dividends. Reduced medical costs and civil liability awards may also be a positive outcome.

The temporary policy in place for the test period must be examined and changes made to prevent indiscriminate use. Guidelines must also be set for training and product use which establish the effects of the product on the victim, dangers inherent with an unrestricted reliance on this product to incapacitate people or animals, and the effects of use in confined environments such as cell blocks, police vehicles and public places. Our members must be aware of the impact contamination of the environment can have on innocent bystanders and take responsibility if this occurs.



The Force should continue to monitor the use of Oleoresin Capsicum for at least a year following full implementation to determine the influence the product has on the use of firearms, assaults of police officers and complaints of excessive force and statistics concerning their resolution.

Health and Welfare recently completed tests on the product and the only concern expressed dealt with asthmatics. It may trigger an attack and if this occurred the suspect would require medical attention. "E" Division did test the spray on five (5) members who were asthmatic with no side effects.

"E" Division also conducted tests on the flammability of the three test products. Testing was done at the Boundary Bay Training Site with photographs taken by an "E" Division Technician.

The testing was done over an open candle flame at a distance of 4 and 6 feet. One second and two second bursts were dispensed over the flame, and in two cases the alcohol ignited producing a fireball. The exception was **First Defense**, which extinguished the flame. The formula in this product contains distilled water.

While the tests would not qualify as "scientific" they did confirm that a serious safety hazard exists when an alcohol based product is used near an open flame. In police investigations there are many types of open flames, eg. matches, lighters, furnace pilot lights, gas/wood burning stoves and fireplaces.

## **7. RECOMMENDATIONS**

- 1. The RCMP adopt Oleoresin Capsicum for use by all operational personnel.**

### **Rationale:**

The test results have established that Oleoresin Capsicum has reduced the number of violent confrontations between the police and the public. The safety of the public, members and offenders is protected through the use of this product. Member confidence and morale is enhanced when given an alternative to physical violence or the use of lethal force. Oleoresin Capsicum provides an alternative, in most instances but not all, to carotid control, the defensive baton and lethal force.

**No member of the RCMP be allowed to carry this product until they are fully trained in its use.** All members will be encouraged to experience the effects of the spray, but will **only be subjected to a live spray on a voluntary basis.**

**Rationale:**

Members should be aware of the physical effects Oleoresin Capsicum can cause offenders. This is necessary to prevent indiscriminate use of the product and give them an understanding of how they will react to cross-contamination or direct spray from a suspect. They will know what decontamination procedures to implement, any first aid procedures to follow, and the emotional support the person must receive.

Members will also have enhanced credibility before a court if they can relate to their personal exposure being similar to that experienced by the suspect. In "E" Division the members were exposed to a one second burst with eyes and mouth closed.

Members who decline to be sprayed should be required to carry out the decontamination procedures or observe these procedures.

3. **The product selected should be nonflammable and meet certain preset standards set by the RCMP.**

**Rationale:**

While only one of the three products tested was nonflammable there are many companies involved in the production of Oleoresin Capsicum and they may use water as one of the ingredients. The product should also have a permanent safety device attached to prevent accidental discharge. The canisters must also contain environmentally friendly ingredients, deliver a specified number of one second bursts and contain not less than 5% Oleoresin Capsicum.

4. **Policy and guidelines need to be examined to discourage indiscriminate use and exposure to innocent bystanders.**

**Rationale:**

Contamination of cell block areas and public buildings, via the ventilation system, must be avoided. Oleoresin Capsicum may create a false sense of security for members and its use should be monitored to ensure they are aware of the dangers when encountering potentially violent individuals.

5. **The evaluation of Oleoresin Capsicum should continue for one year after introduction to the field.**

**Rationale:**

This evaluation could determine if the product has any influence on the use of firearms by members, assaults on police officers and complaints of excessive force. We could also monitor the number of complaints received from the public concerning the use of the product and the resolution of those complaints.