

# ***TM-19-93*** ***Gore-Tex Lined Sweater Evaluation***

*By Sergeant K. Beiko*

TECHNICAL MEMORANDUM

Submitted by  
Canadian Police Research Centre

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

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## SUMMARY

As a result of a visit to W.L. Gore & Associates, Inc. in Maryland in 1992 by one of the project managers in the Canadian Police Research Centre, it was decided that a field testing project would be of interest to the police community as a whole.

A number of large V-neck sweaters were obtained and retrofitted with the Gore-Tex XCR windproof lining. Numerous police agencies in Canada were canvassed to ascertain interest and participation. The response was overwhelming.

The project began in the Fall of 1992, and terminated in the Spring of 1993. No specific instructions were issued with the sweater. Departments were encouraged to follow their dress code, ie in some departments, a sweater can be worn as an outer garment.

The comments were numerous and varied but the consensus was that the sweater performed best when worn as an outer garment. There seemed to be too much heat buildup when worn under a winter coat when activity levels were high.

## RÉSUMÉ

Par suite d'une visite qu'un maître de projets du Centre canadien de recherches policières a effectuée en 1992 à la société W.L. Gore & Associates, Inc., au Maryland, on a décidé qu'un projet d'essais sur place intéresserait la collectivité policière en général.

On a obtenu un certain nombre de chandails à encolure en V de grande taille, auxquels on a ajouté une doublure Gore-Tex XCR à l'épreuve du vent. On a consulté plusieurs services de police canadiens afin de déterminer s'ils étaient intéressés à participer aux essais. La réaction a été très positive.

Le projet a commencé à l'automne de 1992 et a pris fin au printemps de 1993. Aucune instruction précise n'accompagnait les chandails. On a demandé aux services de police de suivre leur code vestimentaire. Par exemple, certains services permettent à leurs membres de porter le chandail comme vêtement de dessus.

Les commentaires ont été nombreux et variés, mais tous ont convenu qu'il valait mieux porter le chandail comme vêtement de dessus. Le port du chandail sous un manteau d'hiver lorsque le niveau d'activité est élevé entraînerait une trop grande accumulation de chaleur.

Sweaters were provided by the RCMP's Material Management Branch, Ottawa, Ontario, and the Gore-Tex XCR teflon windproof linings were purchased from and sewn into the sweaters by Lac-Mac Limited, London, Ontario.

The sweaters were an acrylic/wool blend (70%/30% respectively). Gore-Tex XCR is a windproof membrane that can be sewn into any V-neck sweater. It makes the sweater more versatile especially in the Spring and Fall seasons. There is less heat loss through the XCR lining, consequently, the sweater can be worn as an outer garment. Too, it can be worn under a winter coat to retain more body heat in extreme weather conditions providing one's activity level is minimal so that the body heat buildup does not create perspiration.

As with many product evaluations, views differ according to personal preference. This was the case with this test, but many of the comments were similar even though the field testing was conducted in varying climatic conditions.

Parties interested in having sweaters lined with the Gore-Tex XCR teflon membrane, enquiries can be directed to:

Lac-Mac Limited  
425 Rectory Street  
London, Ontario  
N5W 3W5

Attn: Mr. W.D.(Bill) Keenan,  
Sales & Marketing Manager,

toll free 1-800-461 -0001  
phone (519) 432-2616  
fax (519) 432-9757

The Gore-Tex XCR membrane lined sweaters were field tested by the following police agencies:

Vancouver Police Department, Vancouver, B.C.

RCMP Tumbler Ridge Detachment, Tumbler Ridge, B.C.

Saskatoon City Police Force, Saskatoon, Sask.

OPP Kenora District Headquarters, Kenora , Ont.

Peel Regional Police, Brampton, Ont.

Aylmer Police, Aylmer, P.Q.

Hull Police, Hull, P.Q.

Montreal Urban Police Service, Montreal, P.Q.

Halifax Police Department, Halifax, N.S.

Royal Newfoundland Constabulary, Labrador City, Labrador, NFLD.

Although Edmonton Police Service did not participate directly in this project, they very kindly submitted the results of their independent field tests on the Gore-Tex lined sweater and Gore-Tex socks. Consequently, their comments are being included in this report.

## WEATHER TEST CONDITIONS

extreme cold to mild winter

cool/cold and damp winter

cool to cold fall

cool to cold spring

humid, damp and rain spring and fall

## HOW WORN

over shirt as outer garment

under patrol jacket

under winter jacket

## WHERE WORN

office

indoor investigations

outdoor investigations

## TYPE OF DUTIES (all shifts)

### municipal

traffic

police dog handler

walking beat

general patrol

general investigation

### rural

detachment

police dog handler

general investigation

skidoo patrols

## COMMENTS

### GORE-TEX LINED SWEATER

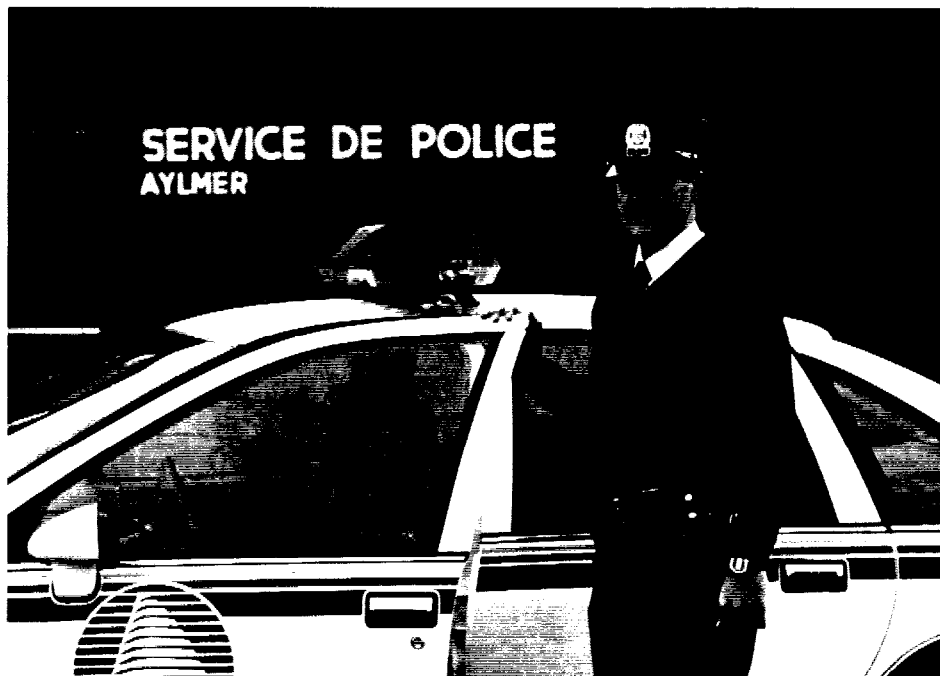
- complimented uniform
- light and resistant to wind
- comfortable
- long sleeved shirt required under sweater because of lining
- elbow patches and epaulets would have been useful to reduce wear and provide for rank insignia as well as place to clip radio microphone
- difficult to get to inside shirt pocket; V-neck could have been larger
- put outside breast pocket on sweater
- durable and easy to maintain
- gore-tex lining is noisy
- going from car to indoors frequently caused heat build up lending itself to excessive perspiration
- when worn as outer garment, was very comfortable
- when worn under patrol jacket or winter parka, tended to be too warm causing perspiration to become trapped between the sweater and jacket/parka causing chilling
- superior in warmth to woollen unlined sweater
- no perspiration build up when worn as outer garment
- sweater snagged easily by equipment
- sweater matted too easily
- sweater tended to wick moisture/perspiration
- sweater best worn as outer garment
- sweaters provided should have, been larger as gore-tex lining essentially reduces sweater size by one full size

### GORE-TEX LINED SOCKS (usual sock to be worn inside gore-tex lined sock)

- kept feet warm and dry during cold weather
- very good for cold weather exercises
- would be useful to keep feet dry in damp/wet conditions



Photograph 1 - Gore-Tex lined sweater



Photograph 2 - close up of Gore-Tex lined sweater