CPRC

CANADIAN POLICE RESEARCH CENTRE

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CENTRE CANADIEN DE RECHERCHES POLICIERES

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- USE OF TECTOPO FOR COCAINE EXHIBITS
- COMMUNICATING RESEARCH RESULTS TO POLICE
- MISCELLANEOUS

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TECHNICAL MEMORANDUM

Submitted by
RCMP Forensic Identification
Research & Review Section

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

EXECUTIVE SUMMARY

This report addresses some of the work covered during the fiscal year 1994/1 995. Dr. Wilkinson has been researching this area for a while, and has produced other reports which can be read in conjunction with this one.

This report addresses research in three separate areas:

(1) Field Study: Use of TECTOPO for cocaine exhibits,

(2) Communication of information arising from research to police, and

(3) Miscellaneous
testing of a new cyanoacrylate glue, and
testing of the Minicrimescope

SOMMAIRE

Le present rapport porte sur les recherches menées par le professeur Wilkinson au cours de l'exercice 1994-l 995. Comme ses travaux portent sur ce domaine depuis longtemps, il est possible de consulter ses autres rapports en même temps que celui-ci.

Sujets des recherches :

(1) etude sur le terrain : utilisation d'oxyde de trioctylphosphine de chélate d'europium thénoylique pour les pieces à conviction (cocaine)

(2) communication des résultats des recherches 8 la police

(3) divers

essai d'une nouvelle colle à base de cyanoacrylate

essai du «Minicrimescope».

(1) Field Study: Use of TECTOPO for Cocaine Exhibits

Summary

Cocaine exhibits are notorious for developing excessive cyanoacrylate on the background surface which obscures all print detail. A comparison between TECTBPO and CA/ TEC as treatments for cocaine exhibits was initiated.

Cocaine samples were prepared (prints deposited on the outside of the bag, pure cocaine inside the bag for one and two week periods). The samples were divided into two, one half treated with TECTBPO and the other with CA/ TEC. The samples were reconstructed and photographed. For one week old samples the best ridge detail was visualised using CA/ TEC whereas for the two week old samples the best ridge detail was observed for TECTBPO.

As a consequence of the encouraging results, for the visualisation of lipid fingerprints on plastics contaminated with cocaine, a field study has been initiated with 'A' division. Cpl. Karl McDiarmid is comparing the ability of TECTBPO (T-2) against CA/ TEC at visualising fingerprints on plastics that are heavily contaminated with cocaine. The field study was expected to run for four months from September to the beginning of January over which time a statistical bias indicating the best method of treatment would be evident. Unfortunately an insufficient number of exhibits became available during this time frame so the study is continuing for the foreseeable future.

(2) Communication of information arising from research to police

A paper entitled "A Comparison of Techniques for the Visualisation of Fingerprints on Human Skin including the Application of Iodine and a-Naphthoflavone" has been submitted to the Journal of Forensic Identification for publication.

(3) Miscellaneous

Testing of a New Cyanoacrylate Glue

A "new" glue for cyanoacrylate fuming recently was brought to our attention by Ballentine USA who claimed that the glue fumed at a lower vapour pressure and boiled at a lower temperature which resulted in shorter exposure times. Two crude tests were carried out to test their claims;

1) **The rate of evaporation of the glue was directly compared to Superbonder 495 (current glue used by the RCMP) by heating the samples to 1 50°C. 94% of the Superbonder evaporated over this temperature range whereas only 59% of the ID-TEK glue was evaporated; and,**

2) **Samples were placed in the vacuum chamber with one of the glues and the pressure reduced to 5 torr and left for 30 minutes. 39% of ID-TEK evaporated over this time period compared to 30% of Superbonder 495.**

Neither test indicates the major improvements claimed by the company.

Since both glues contain the same chemicals just in slightly different ratios I cannot see how their claims can be justified.

Testing of the Minicrimescope

As a result of Sgt. Misner's trip to the C.I.S. conference in Windsor, Ontario, loan of a new light source called the mini-crimescope was facilitated. Since we only had access to the light source for one week, a quick series of tests were completed;

1) **Rhodamine 6G treated cyanoacrylate samples were observed under the mini-crimescope and the Luma-Lite side-by-side, both gave excellent intensity in the blue with the Luma-Lite having the slight edge; and,**

2) **The filter transmission of the five filters contained in the rotating filter wheel were measured and nothing unexpected was observed all filters appeared capable of achieving excitation as described in the brochure.**

Unfortunately no further measurements were possible. The light source looked promising although concerns were expressed by Sgt. Misner over the ease of use.