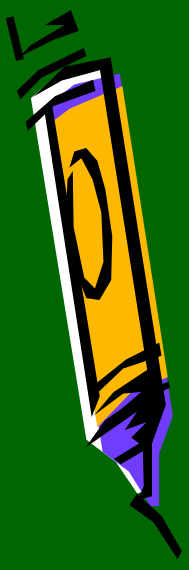
The Six Phases of a Project



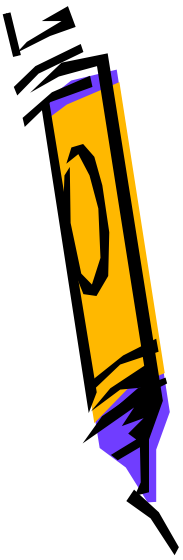
2. Enthusiasm

Written Reports: Guidance from SWGMAT

Maureen C. Bottrell

Trace Evidence Symposium

August 15, 2007

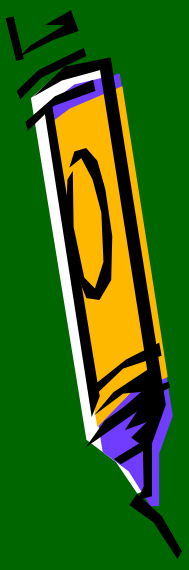


"I just called to see if there was anything we could do for you, anything to help you, if you needed more glass or anything from us. We'd like to do everything we can to move this examination along so we can **PUT THIS HEATHEN IN JAIL FOR MURDER!**"

(A real investigator from a real case.)

"It floats. That means he's GUILTY!"
(CSI, 2006)

The Six Phases of a Project



2. Enthusiasm
3. Disillusionment

FBI LABORATORY

7-1 (Rev. 5-13-99)

FEDERAL BUREAU OF INVESTIGATION
QUANTICO, VA 22135

Date: July 27. 2006

To: Christopher M. LoJacono
Commander
Forensic Science Division
Metropolitan Police Department
3521 V Street, NE
Washington, D.C. 20018

Case ID No.: 95A-HQ-15

Lab No.: 161616016 PO HM

Reference: Communication dated July 6, 2006

Your No.: CSIB 2005- / CCD 2005-002

Title:

OBVI S. SUSPECT;
IMA DEADMAN - VICTIM;
HOMICIDE

Date specimens received: July 6, 2006

The following specimens were received in the Trace Evidence Unit (mineralogy):

ITEM FROM EVIDENCE PROCESSING ROOM

Q1 Brown paper (Item 13)

ITEMS FROM VICTIM'S HUSBAND

Q2 Plastic bag (Item 14)

Q3 Shirt (Item 7)

Q4 Shirt (Item 8)

Q5 Jacket (Item 9)

Q5.1 Hat (Item 9)

Q6 Pants (Item 10)

This Report is Furnished for Official Use Only

Q7 Boot (Item 11)

Q8 Boot (Item 12)

K1 Glass sample from driver's side window (Item 5)

The results of the trace evidence (mineralogy) examinations are included in this report.

Results of Examinations:

Glass recovered from the pants and boots (Q6, Q7 and Q8) is dissimilar to and cannot be associated with the glass from the driver's side window of the vehicle (K1).

No glass was detected in the debris recovered from the brown paper (Q1), plastic bag (Q2), shirts (Q3 and Q4), jacket (Q5), and hat (Q5.1).

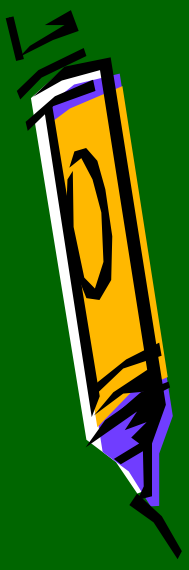
The specimens were examined visually using stereobinocular reflected light microscopy and petrographic microscopy. The refractive index of the glass was measured using the glass refractive index measuring system (GRIM 2) at 656 nanometers wavelength.

Remarks:

This report contains the opinions and interpretations of the examiner. Supporting documentation for these opinions and interpretations is contained in the FBI Laboratory files. The specimens will be returned to you under separate cover.

Maureen C. Bottrell
Trace Evidence Unit
(703) 632-7697

The Six Phases of a Project



2. Enthusiasm
3. Disillusionment
4. Panic

FBI LABORATORY

7-1 (Rev. 5-13-99)

FEDERAL BUREAU OF INVESTIGATION
QUANTICO, VA 22135

2

Date: July 27. 2006

Case ID No.: 95A-HQ-15

Lab No.: 161616016 PO HM

3

4

To: Christopher M. LoJacono
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Metropolitan Police Department
3521 V Street, NE
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Reference: Communication dated July 6, 2006

Your No.: CSIB 2005- / CCD 2005-002

Title:

1

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IMA DEADMAN - VICTIM;
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Q8 Boot (Item 12)

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FEDERAL BUREAU OF INVESTIGATION
QUANTICO, VA 22135

Date: July 27. 2006

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Title:

OBVI S. SUSPECT;
IMA DEADMAN - VICTIM;
HOMICIDE

7

Date specimens received: July 6, 2006

The following specimens were received in the Trace Evidence Unit (mineralogy):

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Q1	Brown paper (Item 13)

ITEMS FROM VICTIM'S HUSBAND

Q2	Plastic bag (Item 14)
Q3	Shirt (Item 7)
Q4	Shirt (Item 8)
Q5	Jacket (Item 9)
Q5.1	Hat (Item 9)
Q6	Pants (Item 10)

6

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Q7 Boot (Item 11)

Q8 Boot (Item 12)

K1 Glass sample from driver's side window (Item 5)

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Trace Evidence Unit
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11

FBI LABORATORY

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QUANTICO, VA 22135

Date: July 27. 2006

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Reference: Communication dated July 6, 2006

Your No.: CSIB 2005- / CCD 2005-002

Title:

OBVI S. SUSPECT;
IMA DEADMAN - VICTIM;
HOMICIDE

12

Date specimens received: July 6, 2006

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ITEMS FROM VICTIM'S HUSBAND

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Q4 Shirt (Item 8)

Q5 Jacket (Item 9)

Q5.1 Hat (Item 9)

Q6 Pants (Item 10)

This Report is Furnished for Official Use Only

13

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Q8 Boot (Item 12)

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18

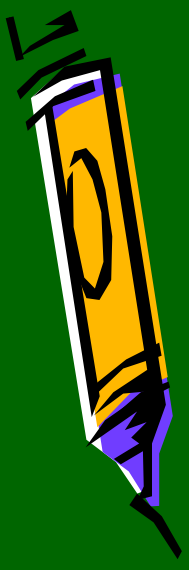
Maureen C. Bottrell
Trace Evidence Unit
(703) 632-7697

Summation of Requirements

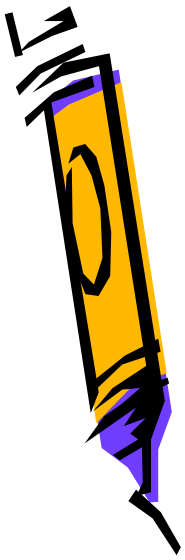
- Title
- Name and address of lab and location where tests were carried out, if different
- Unique ID of the report, and on each page an ID that ensures that page is part of the report, and a clear ID of the end of the report
- Name and address of client
- ID method(s) used
- Description of, unambiguous ID of and condition of item(s) tested
- Date of receipt of item where critical to validity and application of the results
- Date of performance of test
- Reference to sampling plan and procedures*
- Test results
- Name/function/signature/equivalent ID of person(s) authorizing test report
- Statement that results relate only to items tested*
- Pagination including page number and total number of pages
- Deviations from, additions to, exclusions from test method*
- Information on specific test conditions such as environmental factors*
- Statement of (non)compliance with requirements/specs*
- Estimated measurement uncertainty*
- Opinions and interpretations*
- Additional info as required*
- Date of sampling**
- Unambiguous ID of stuff sampled**
- Location of sampling (can use diagrams, sketches, photos)**
- Reference to sampling plan/procedure**
- Details of environmental conditions during sampling – if it affects results/interpretation**
- Any standard/spec for sampling, and any deviations/additions/exclusions**
- Opinions (when rendered) must be identified as opinions
- The results of sub-contractors (if used) shall be clearly identified
- Witness' qualifications***
- Basis and reasons for opinions***
- Opinions to which expert will testify***

* When relevant
** Where necessary
*** When requested

The Six Phases of a Project



2. Enthusiasm
3. Disillusionment
4. Panic
5. Search for the Guilty



ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories, 1999

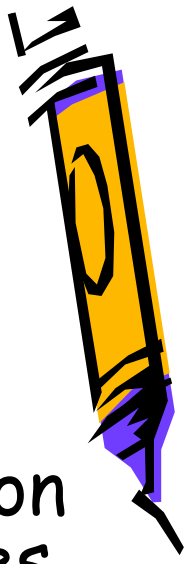
International Laboratory Accreditation Cooperation (ILAC) Guide 19 – Guidelines for Forensic Science Laboratories

ASCLD/LAB – *International* – Supplemental Requirements for the Accreditation of Forensic Science Testing and Calibration Laboratories

Federal Rules of Criminal Procedure: Rule 16

And more!

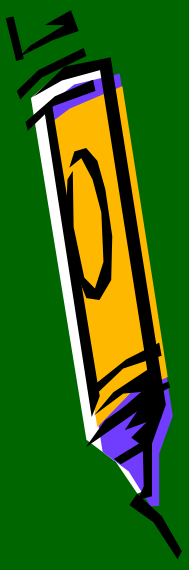
Requirements of ASCLD/LAB - *International*



Forensic labs can't always include everything in section ISO/IEC 17025 sub clauses 5.10 in their report. They may therefore adopt one or more of the following (which must be documented in their QA manual):

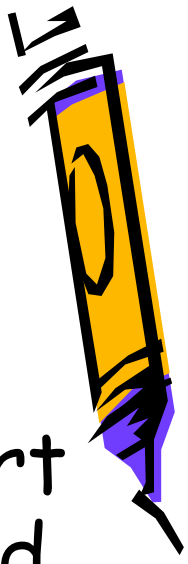
- Include all the information in the report.
- Prepare an appendix to the report with all the information
- Make sure all the information is in the case notes, and make the case notes available upon request.

The Six Phases of a Project



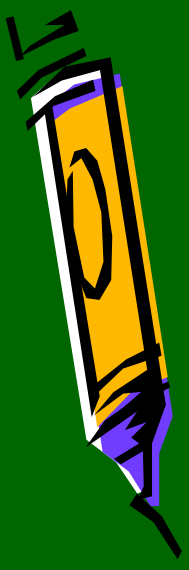
2. Enthusiasm
3. Disillusionment
4. Panic
5. Search for the Guilty
6. Punishment of the Innocent

Why I won't do what Maureen suggests



- It will just make the report cumbersome, confusing and cause me to have to explain more things in court.
- More people are likely to get called to testify.
- Lay people wouldn't understand it anyway.
- The client doesn't care.
- We've always done it this way, and my lab director isn't going to let us change.

The Six Phases of a Project



2. Enthusiasm
3. Disillusionment
4. Panic
5. Search for the Guilty
6. Punishment of the Innocent
7. Praise for the Non-Participants

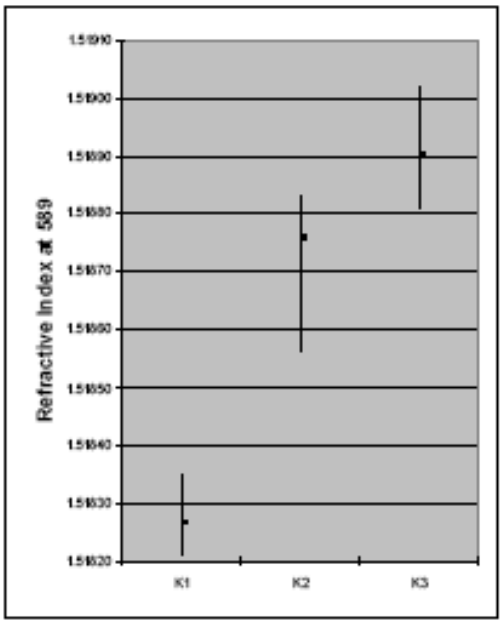
Minimum for Clarity

- Scientific conclusions
  - Statement of how you analyzed the samples.

Results of Examinations:

Comparison of glass items for the purposes of determining the possibility of a common origin is accomplished by using one or more analytical techniques. In this case, these techniques include: the determination of physical properties such as glass color; and measurement of refractive index at up to three wavelengths, 486nm, 589nm, and 656nm. The physical properties of the glass are determined using stereobinocular and petrographic microscopes. Refractive index of the glass is measured using the Glass Refractive Index Measuring system (GRIM2). The actual tests performed on any specific sample are dependent on the size of the sample, and analytical requirements.

The refractive indices measured in the glass from the rear, front and back windows of the Honda (K1, K2 and K3, respectively) span a range of values in the three wavelengths examined. There is no overlap in these ranges between the specimen K1 glass and the specimens K2 and K3 glass, so it is always possible to distinguish between the specimen K1 glass and the specimen K2 and K3 glasses. However, because the range of refractive indices exhibited in the specimen K2 and K3 glass overlap in each wavelength, it is not always possible to distinguish these two specimens by this method. But because the lower end of the range of refractive index values measured in the specimen K2 glass falls below the lower end of the range of refractive index values for specimen K3, it is sometimes possible to distinguish specimen K2 from specimen K3 by this method. Similarly, because the upper end of the range of refractive index values measured in the specimen K3 glass rises above the upper end of the range of refractive index values for specimen K2, it is sometimes possible to distinguish specimen K3 from specimen K2 by this method. The diagram at right illustrates this for the 589nm wavelength.



The specimen Q12.4 glass fragment is optically indistinguishable from the glass from the rear window of the Honda (K1). Consequently, the specimen Q12.4 glass fragment is consistent with having originated from either the rear window of the Honda or from another source of glass with indistinguishable optical properties. The front and back windows of the Honda (K2 and K3, respectively) are excluded as possible sources of the specimen Q12.4 glass fragment.

The specimen Q12.3 and Q12.13 glass fragments are optically indistinguishable from the glass from the front window of the Honda (K2). Consequently, the specimen Q12.3 and Q12.13 glass fragments are consistent with having originated from either the front window of the Honda or from another source of glass with indistinguishable optical properties. The rear and back windows of the Honda (K1 and K3, respectively) are excluded as possible sources of the specimen Q12.3 and Q12.13 glass fragments.

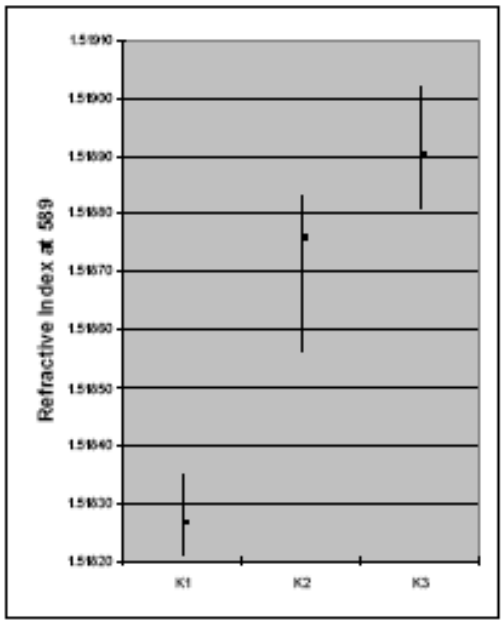
Minimum for Clarity

- Scientific conclusions
  - Statement of how you analyzed the samples.
  - Results.

Results of Examinations:

Comparison of glass items for the purposes of determining the possibility of a common origin is accomplished by using one or more analytical techniques. In this case, these techniques include: the determination of physical properties such as glass color; and measurement of refractive index at up to three wavelengths, 486nm, 589nm, and 656nm. The physical properties of the glass are determined using stereobinocular and petrographic microscopes. Refractive index of the glass is measured using the Glass Refractive Index Measuring system (GRIM2). The actual tests performed on any specific sample are dependent on the size of the sample, and analytical requirements.

The refractive indices measured in the glass from the rear, front and back windows of the Honda (K1, K2 and K3, respectively) span a range of values in the three wavelengths examined. There is no overlap in these ranges between the specimen K1 glass and the specimens K2 and K3 glass, so it is always possible to distinguish between the specimen K1 glass and the specimen K2 and K3 glasses. However, because the range of refractive indices exhibited in the specimen K2 and K3 glass overlap in each wavelength, it is not always possible to distinguish these two specimens by this method. But because the lower end of the range of refractive index values measured in the specimen K2 glass falls below the lower end of the range of refractive index values for specimen K3, it is sometimes possible to distinguish specimen K2 from specimen K3 by this method. Similarly, because the upper end of the range of refractive index values measured in the specimen K3 glass rises above the upper end of the range of refractive index values for specimen K2, it is sometimes possible to distinguish specimen K3 from specimen K2 by this method. The diagram at right illustrates this for the 589nm wavelength.



The specimen Q12.4 glass fragment is optically indistinguishable from the glass from the rear window of the Honda (K1). Consequently, the specimen Q12.4 glass fragment is consistent with having originated from either the rear window of the Honda or from another source of glass with indistinguishable optical properties. The front and back windows of the Honda (K2 and K3, respectively) are excluded as possible sources of the specimen Q12.4 glass fragment.

The specimen Q12.3 and Q12.13 glass fragments are optically indistinguishable from the glass from the front window of the Honda (K2). Consequently, the specimen Q12.3 and Q12.13 glass fragments are consistent with having originated from either the front window of the Honda or from another source of glass with indistinguishable optical properties. The rear and back windows of the Honda (K1 and K3, respectively) are excluded as possible sources of the specimen Q12.3 and Q12.13 glass fragments.

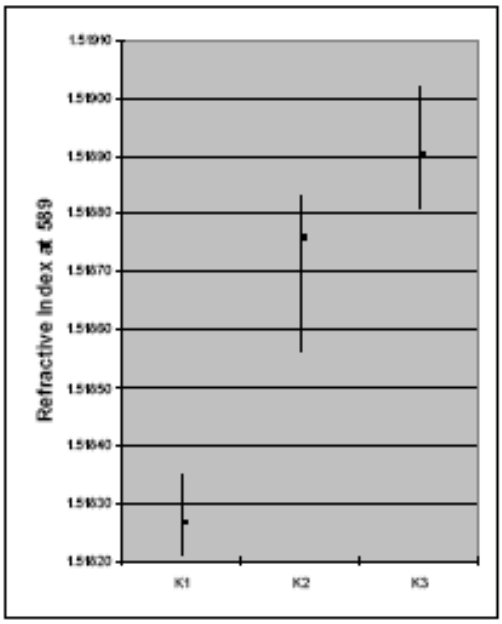
Minimum for Clarity

- Scientific conclusions
  - Statement of how you analyzed the samples:
  - Results:
- Interpretations/Opinion

Results of Examinations:

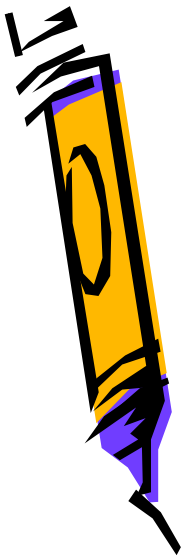
Comparison of glass items for the purposes of determining the possibility of a common origin is accomplished by using one or more analytical techniques. In this case, these techniques include: the determination of physical properties such as glass color; and measurement of refractive index at up to three wavelengths, 486nm, 589nm, and 656nm. The physical properties of the glass are determined using stereobinocular and petrographic microscopes. Refractive index of the glass is measured using the Glass Refractive Index Measuring system (GRIM2). The actual tests performed on any specific sample are dependent on the size of the sample, and analytical requirements.

The refractive indices measured in the glass from the rear, front and back windows of the Honda (K1, K2 and K3, respectively) span a range of values in the three wavelengths examined. There is no overlap in these ranges between the specimen K1 glass and the specimens K2 and K3 glass, so it is always possible to distinguish between the specimen K1 glass and the specimen K2 and K3 glasses. However, because the range of refractive indices exhibited in the specimen K2 and K3 glass overlap in each wavelength, it is not always possible to distinguish these two specimens by this method. But because the lower end of the range of refractive index values measured in the specimen K2 glass falls below the lower end of the range of refractive index values for specimen K3, it is sometimes possible to distinguish specimen K2 from specimen K3 by this method. Similarly, because the upper end of the range of refractive index values measured in the specimen K3 glass rises above the upper end of the range of refractive index values for specimen K2, it is sometimes possible to distinguish specimen K3 from specimen K2 by this method. The diagram at right illustrates this for the 589nm wavelength.



The specimen Q12.4 glass fragment is optically indistinguishable from the glass from the rear window of the Honda (K1). Consequently, the specimen Q12.4 glass fragment is consistent with having originated from either the rear window of the Honda or from another source of glass with indistinguishable optical properties. The front and back windows of the Honda (K2 and K3, respectively) are excluded as possible sources of the specimen Q12.4 glass fragment.

The specimen Q12.3 and Q12.13 glass fragments are optically indistinguishable from the glass from the front window of the Honda (K2). Consequently, the specimen Q12.3 and Q12.13 glass fragments are consistent with having originated from either the front window of the Honda or from another source of glass with indistinguishable optical properties. The rear and back windows of the Honda (K1 and K3, respectively) are excluded as possible sources of the specimen Q12.3 and Q12.13 glass fragments.



Sample "Opinion"

- Analytically Indistinguishable
  - "Consequently, the specimen Q12.4 glass fragment is consistent with having originated from either the rear window of the Honda or from another source of broken glass with indistinguishable optical properties."
- Analytically dissimilar
  - "The front and back windows of the Honda (K2 and K3, respectively) are excluded as possible sources of the specimen Q12.4 glass fragment."