Tom Bevel, President/CEO
Ross M. Gardner, CSCSA
Iris Dalley, CSCSA
Tom "Grif" Griffin, CBPA, CSCSA
Mike Maloney, MFS

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&
Associates Inc
A forensic education and consulting group.
www.bevelgardner.com

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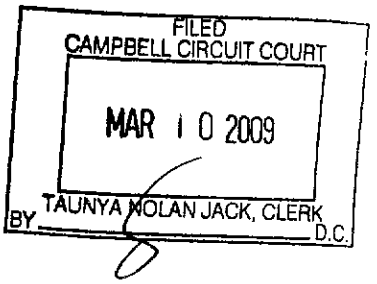
RE: Crime Scene Analysis Report – Robert McCafferty Homicide Scene



For: Dale Dorning
Precision Investigations & Consulting LLC
8216 Princeton-Glendale Road
260
West Chester, Ohio

Purpose: A crime scene analysis is an in-depth analysis that employs scientific method to evaluate the physical evidence known to the analyst. Its function is to gain explicit knowledge of the series of events that comprise a given incident and when possible to identify the sequence of those events. The analyst's opinion is based upon all available evidence and relies upon his education, experience and training.

It is important to recognize that few reconstructions can identify all events and events segments related to a given incident. Should additional information become available in the future, the analyst will consider such information's significance and may choose to revise the final analysis.

Submitted: February 3, 2009

Ross M. Gardner

DEFENDANT'S EXHIBIT

DH #2

Initial Contact Date: December 12, 2008

Date of Scene and or Evidence Examinations: 23 January 2009, Ft Thomas Police Department

Background: Following notification of police by Mr. McCafferty's wife, police arrived at his residence and found Mr. McCafferty supine in his bed. His body was covered by bed linen with the exception of his right hand and head. Mr. McCafferty suffered a single primarily penetrating gunshot wound to the left forehead. There was however a secondary injury, 2 cm to the left of the gunshot wound and metal fragments were located on and imbedded in other scene surfaces.

Limitations: The following report and conclusions are based on the autopsy report, ballistics report, bloodstain pattern analysis report, photographs of the scene and my own evidence examinations. No specific crime scene reports, other than a general investigative report were provided.

Bloodstain Patterns of Interest

As found in the scene Mr. McCafferty's head was positioned on top of two stacked pillows. It was right side down. On his person and scene surfaces were:

Multiple flow patterns from the wound across and down the forehead and face. All of the flows originate from a single area, however they diverge, indicating alteration of the head subsequent to wounding. Two flows initiate in the nose and also similarly diverge in path as the flow moves down the lips and face. (Photo D page 4).

The terminating aspects of the two lowest flow patterns (those lowest on the face in relation to standard anatomical position) are smeared and disturbed. The highest flow simply terminates. (Photo D, page 4, Autopsy Photo 5537001)

On the pillow case where Mr. McCafferty's head is resting, there is an apparent cylinder/muzzle flash deposit. This is a gray in color deposit associated with firing a revolver in close contact with a surface. The deposit appears to be voided, resulting in two deposits separated by a short distance. As the pillow is positioned, in line horizontally to this GSR deposit, are a saturation stain and two flow patterns. (Photo C page 8). On physical examination the cylinder/muzzle flash has been destroyed by apparent saturation of the fabric, making it difficult to recognize its existence. (RMG 167) IR photography did not resolve attempts to better examine this area. The flow patterns are evident on the pillow case, with no obvious source but Mr. McCafferty's wound.

In relation to Mr. McCafferty's final position, no spatter were observed on the surfaces of the pillow case to his right side (oriented toward the middle of the bed). A small group of relatively large spatter stains (4-5 mm) are present on the opposite side of McCafferty's head position. (RMG 169 -172). There is no radiating pattern present, but the gamma angles are oriented from approximately 120 to 170 degrees. No similar spatter are observed in the crime scene photographs on Mr. McCafferty's head or neck as they face upward in the scene.

An area of origin (AO) determination for the spatter pattern on the head board was performed by crime scene investigators using only four stains. This placed the origin in line with the level of the top pillow and the victim's head as observed in final position. (DSC 032-44). No tight convergence occurs in this AO effort. Physical examination of the head board reveals a significant number of stains in this pattern. (RMG 182) The stains dispersed outward left to right and slightly upward, with gamma angles of 280 to 310 degrees. They must be associated to the gunshot event and demand the defect was similarly oriented at the moment of wounding.

No additional AO was attempted during my physical examination, as the scene context could not be reestablished accurately (position and height of the pillows). A two-dimensional convergence examination of the stains on the head board was attempted, but limited in value. The primary consideration of this effort was the presence of the spatter on the headboard in the lower region of the radiating effect. If Mr. McCafferty's head were located on the pillow and putting pressure there, the edge of the pillow would naturally rise upward and potentially act to void the lower aspects of the spatter pattern. This effect however is not observed. Both the AO and convergence information indicate the relationship of the pillows and the spatter lie at a cusp, where the pillows may or may not have voided this area. The issue is simply to close to call. A more thorough AO effort on scene, might have resolved the issue. At this point it cannot be resolved.

Small impact spatter stains are observed on the upper front aspect of Mr. McCafferty's t-shirt. There are at least nine stains present. They extend from the shoulder down the chest approximately 12 cm. (RMG 156, 160). The stains are small, 1 – 1.5 mm in size. They are oriented to the right side of the chest, but a saturation stain over the right shoulder and chest mars this area, making it impossible to determine how far they extend. The presence of these stains call into question the condition of the final scene as observed in the initial crime scene photographs (McCafferty 0545-0549). In these photographs no part of Mr. McCafferty's chest is exposed. Examination of the surfaces of comforter and sheets failed to locate similar staining and as positioned in the final scene they prevent spatter deposition to the t-shirt.

Forensic Pathology Aspects

Dr Stephens reports that the gunshot wound is a penetrating injury to the left forehead that strikes the interior temporal/occipital region. He offers a path of front to back, right to left, above to below. He also reports the range as intermediate. (McCafferty Autopsy Report A07-174, pg 3)

Ballistics Aspects

Ballistics examiner Smith reported gunshot residues (GSR) without a pattern on the front surface of the t-shirt worn by Mr. McCafferty. Lead residues were detected on the front aspect of the collar and spot reactions as low as the "Y" letter on the t-shirt. (Lab Rpt 07062900NN, pg. 1).

There is reported vaporous lead in and around the biological stain on the pillow case, interestingly I did not find a point where Mr. Smith clearly discusses the evident gray deposits, oriented to the left of the biological stain. This pattern does not appear in the photos he provides. This may indicate the pattern was altered (perhaps blood stained after collection through folding of some nature) prior to his examination.

A small fragment of what appears to be metal is found on the same pillow Mr. McCafferty's head is resting on, where the pillow lays against the head board. (Photo C pages 2 and 3).

An item is embedded in the ceiling above Mr. McCafferty's head. The true nature of this item is unknown, but it appears to be a lead fragment. (Photo B page 7, Photo E page 9-12)

A light blue jacket was present in the scene partially beneath the comforter, centered in the bed between the pillows on the left and right side. A symmetrical burn and soot deposit consistent with a cylinder flash is present on the right lower sleeve of the jacket. (RMG 135-139) The presence of the burn indicates the sleeve was draped across the weapon at the moment of firing.

Bullet holes and GSR deposits are present on multiple items of clothing recovered from the closet in the master bedroom. (RMG 140-151) Also located with the clothing is an expended bullet. (01012003_Page04).

Conclusions

Event Segments

1. A gunshot event occurred in the closet.
    a. Multiples items of clothing have defects, soot and GSR deposits present on them.
2. Mr. McCafferty was exposed to this event.
    a. GSR residues are located on Mr. McCafferty's t-shirt in areas that are not in proximity to the wounding shot.
3. Mr. McCafferty was subsequently positioned in the bed, not significantly different than that observed in his final position.
    a. Two flow patterns initiate from his gunshot wound, flowing generally with gravity (accounting for slight alteration/repositioning of the head)

b. Based on the AO effort spatter is ejected from a similar position as observed in final position, onto the head board (accounting for slight alteration/repositioning of the head).

4. Mr. McCafferty was shot once from a position to his right, while the weapon was positioned low on the bed with the sleeve of the jacket draped over the cylinder.
   a. A cylinder flash pattern is evident on the sleeve of a blue jacket.
   b. A cylinder/muzzle flash pattern is evident on the pillow where Mr. McCafferty's head is laying.
   c. Based on the AO effort spatter is ejected from a similar position as observed in final position, onto the head board (accounting for slight alteration/repositioning of the head).
5. Subsequent to wounding Mr. McCafferty's head repositioned downward.
   a. The two flow patterns (head wound and nose) show alteration in flow direction (approximately 25 degree change in orientation).
   b. The final position of Mr. McCafferty's head excludes spatter ejection as observed on the headboard.
   c. The muzzle/cylinder flash pattern on the pillow is positioned 12 cm above his final position.
6. The comforter was repositioned in some fashion subsequent to wounding.
   a. In final position, Mr. McCafferty's t-shirt is not exposed.
   b. Spatter are present on the t-shirt.

Discussion:

Mr. McCafferty's head was positioned on or very near the bed pillow at the moment of wounding. It was however positioned higher up the surface than observed in final position, by at least four inches. Spatter ejects generally perpendicular to the surface of a defect, therefore at the moment of wounding the head must be oriented so that the spatter can eject in line with the wound and the apparent lead fragment embedded in the wall with the secondary exit wound. As shown in final position, the head is not so aligned. Additionally the GSR residues on the pillow (resulting from the muzzle/cylinder flash) are inconsistent with final position and the terminal ballistics provided by Dr. Stephens.

The blood flows show a minimum alteration of 25 degrees from initial head position to final position. (McCafferty_0545) Additionally the outermost flow terminates into a smear, even though this portion of Mr. McCafferty's face is not in direct contact with the pillow case. This smear extends down the forehead, across the eyelid and onto the lower cheek adjacent the nose. The flow pattern originating in the nose shows a similar alteration of flow direction. It flows downward until reaching the upper lip and then follows the contours of the lip to the right. Both indicate a slight change in orientation of the head following the initial wounding. These flows are consistent with the required alteration of the head needed to align the defect with the spatter pattern on the head board.

The presence of the spatter on the front of the t-shirt demands some alteration of the comforter's position. This spatter may be expectorate (e.g. from the nose) but forces an issue that the t-shirt must be exposed in some fashion. The nature of the alteration of the comforter cannot be defined.

The combination of the void area between the gray soot deposits, their separation from the evident flow patterns and the finding by Dr. Stephens of an intermediate distance, support a belief that the weapon was fired from the right side of Mr. McCafferty, low to the pillows surface. The void, which is evident before the scene is disturbed, indicates that the pillow has altered its original position in some fashion. The nature of this position change by the pillow cannot be fully explained.

A question was posed by counsel "Can it be determined if Mr. McCafferty was asleep based on the evidence presented?"

The conscious condition of an individual, in and of itself, leaves no specific physical evidence. If that individual were engaged in some physical action that could be recognized, it might be possible to make a claim as to a positive (conscious) condition. If however the head is resting on or was simply near the surface of the pillow at the moment of wounding, then no one can make an objective conclusion as to the victim's conscious condition based on crime scene findings.

This report was peer reviewed by Tom Bevel on 5 February 2009.