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October 21, 2009



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ADMINISTRATIVE ORDER NO. 09-04
EFFECTIVE DATE: October 31, 2009

TO: All Personnel

FROM: Director Robin P. Pendergraft *RPP*

SUBJECT: MANUAL REVISIONS – SBI POLICY AND PROCEDURE MANUAL
PROCEDURE 15 – CRIME SCENE INVESTIGATIONS

BLOODSTAIN ANALYSIS

The purpose of this policy is to fully and accurately document the activities of SBI field agents conducting bloodstain pattern analysis. A secondary purpose of this policy is to help ensure that credible and accurate reports and results from bloodstain pattern analysis are provided to the required members of the criminal justice community. This document sets forth the minimum training and educational requirements for Bureau personnel engaging in bloodstain pattern analysis. This policy is based on recommendations from the Scientific Working Group on Bloodstain Pattern Analysis (SWGSTAIN). A primary function of SWGSTAIN is to build consensus-based, or "best practice," guidelines for the enhancement of the discipline of bloodstain pattern analysis through professional interaction.

BLOODSTAIN ANALYSIS PROGRAM

- A. The SBI has developed minimum educational and training requirements for bloodstain pattern analysts. For the purposes of this policy, the Bloodstain Pattern Analyst Training Program takes into consideration the pre-training knowledge, skills and abilities of the prospective bloodstain pattern analyst. In addition, the requirements for a bloodstain pattern analyst will also consider the professional instruction completed by a trainee seeking to become an active practitioner in the field of bloodstain pattern analysis.



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- B. No employee of the SBI will examine bloodstain evidence for interpretive purposes, issue a written report, or state conclusions or opinions unless that employee has successfully completed the SBI Bloodstain Training Program. The aforementioned program consists of a bloodstain recognition course. The advanced bloodstain analysis course will include a concentration on clothing documentation. A bloodstain analysis school provided by an outside agency may meet many of the requirements of the SBI training module for bloodstain pattern analysis. However, before such a course can be credited to SBI personnel as part of their training requirement, the course must be evaluated and approved by the coordinator of the SBI Bloodstain Analysis Program. It is recommended that SBI personnel attend schools, sponsored by outside agencies, for the purpose of continuing education in this discipline after the SBI Bloodstain Analysis Training Program has been completed.
- C. As part of the training requirement, an SBI analyst in training must also have participated in the analysis in a minimum of three (3) bloodstain cases and/or scenes. These cases and/or scenes must be directly supervised by a senior analyst at a crime scene. This direct supervision will allow a senior bloodstain analyst to determine if a bloodstain analyst in training exhibits a working knowledge and understanding of appropriate bloodstain analysis theories and methodology. It will also allow the senior bloodstain analyst to determine if the analyst in training properly documents the bloodstain case or crime scene through photography, notes, sketches, and reports. When the analyst in training is deemed proficient, the senior bloodstain analyst will send a letter of recommendation to the SBI Crime Scene Coordinator with the list of the cases documented and completed by the analyst in training.
- D. When the SBI Crime Scene Coordinator receives the letter of recommendation, the SBI Crime Scene Coordinator will review the aforementioned cases and, if appropriate, will issue a letter to the appropriate Assistant Director recommending the analyst in training be released from the Bloodstain Training Program and be allowed to work cases without the presence of a senior person on scene. The peer/technical review process is to be continued by all bloodstain analysts, in all cases even after release from the training program.
- E. Every bloodstain analyst will pass an annual proficiency examination administered by the SBI Crime Scene Coordinator or designee. Also, a minimum of eight (8) hours of training related to bloodstain pattern analysis should be completed annually by all bloodstain analysts. This training may include, but is not limited to, attending professional conferences, seminars, and/or workshops. It is also recommended that every bloodstain analyst belong to professional organization(s) related to bloodstain pattern analysis. A mentor or senior bloodstain pattern analyst must be an active practitioner in the field of bloodstain pattern analysis and should have a minimum of three (3) years of casework experience as a qualified bloodstain pattern analyst or other approval by the SBI Director or their designee. A mentor should have fulfilled all of the previously stated requirements for a bloodstain pattern analyst. Mentors should be utilized as a required resource to conduct "peer or technical review" of the bloodstain pattern analyst's work product and report findings prior to submission to Case Records Management System (CRMS).

- F. Additionally, a written report shall be generated for each bloodstain case and/or crime scene analyzed and the report shall be subject to technical and administrative review and approval. The aforementioned review will occur prior to the report and its attached documentation being included in the SBI Case Records Management System (CRMS). A conclusion of the finding of the bloodstain analyst will be generated within the report. The conclusion of the finding is to be separate and apart from the description and bloodstain documentation. A technical review of any bloodstain analysis and the supporting documentation must be completed by a fully trained SBI bloodstain analyst.

MINIMUM PROGRAM TRAINING REQUIREMENTS

- A. A qualified bloodstain pattern analyst must be familiar with and have a working knowledge of the following subject matter areas as they pertain to bloodstain pattern analysis:
1. An understanding of health and safety issues associated with bloodstain pattern analysis, to include bloodborne pathogens and other related health hazards. The bloodstain pattern analyst must also demonstrate an awareness of biohazard safety equipment and procedures.
 2. The bloodstain pattern analyst must have a general knowledge of the history of bloodstain pattern analysis.
 3. The bloodstain pattern analyst must have an understanding of the scientific principles related to bloodstain pattern analysis. The bloodstain pattern analyst must demonstrate an understanding of the scientific methods related to bloodstain pattern analysis and their application to bloodstain pattern experimentation, to include:
 - a. Problem identification
 - b. Hypothesis
 - c. Experimentation/data collection
 - d. Data analysis
 - e. Theory/conclusions
 4. A bloodstain pattern analyst must have an understanding of the principles of physics and the mathematical principles related to bloodstain pattern analysis to include:
 - a. Methods for origin determination
 - b. Physical laws of motion
 - c. Surface tension
 - d. Viscosity
 - e. Gravity
 - f. Air resistance

g. Velocity

5. A bloodstain pattern analyst must have an understanding of the effects of target surface characteristics, on the resulting bloodstain patterns and the effect of environmental factors on the formation and/or drying time of bloodstain patterns to include:
 - a. Air flow
 - b. Humidity
 - c. Temperature
 - d. Substrate characteristics

6. A bloodstain pattern analyst must be able to identify bloodstain patterns and have an understanding of the characteristics of blood in motion. A bloodstain pattern analyst must understand and be able to demonstrate how bloodstain patterns relate to the mechanisms by which they were created to include the patterns below:

Passive Stains

- a. Drip patterns
- b. Blow patterns
- c. Pools
- d. Saturation stains

Projected and Impact Spatter Stains

- a. Impact patterns
- b. Splashes
- c. Cast-off patterns
- d. Arterial spurt and gush patterns
- e. Expirated bloodstain patterns

Transfer Stains

- a. Wipe patterns
- b. Swipe patterns
- c. Transfer/Contact patterns

Miscellaneous Patterns

- a. Void patterns
- b. Fly Spot patterns
- c. Bubble rings
- d. Perimeter/ Skeletonized bloodstains

7. The bloodstain pattern analyst must be able to demonstrate acceptable documentation methods for bloodstain pattern evidence and possess an understanding of acceptable methods of preservation and collection of bloodstain pattern evidence that allow for future examination(s).
8. Documentation techniques specific to bloodstain pattern analysis include, but are not limited to:
 - a. Photographs
 - b. Sketching
 - c. Note taking
9. The bloodstain pattern analyst must possess the ability to communicate findings, conclusions, and opinions by written and/or verbal methods.

BLOODSTAIN ANALYSIS REPORT WRITING PROCEDURE

1. Reports shall be written under the following guidelines:
 - a. The report should document the collection of bloodstain evidence by photographs, sketches, object recovery or other approved methods, when no findings or opinions are stated.
 - b. When bloodstain evidence has been collected, or measurements, angles and other pattern analysis have been conducted wherein impact forces or directions are determined, these findings or conclusions may be stated. These conclusions must be approved through the review process.
 - c. Under no circumstances is a report to be written wherein conclusions are stated as to how such stains were deposited, i.e., from a hammer, gun, blunt object, etc. Only verifiable findings of impact force and direction should be stated, after sufficient testing has been conducted, and then the information will be stated in an approved reporting format.
2. If it is determined that outside consultation with an expert in bloodstain pattern interpretation is advisable, such recommendation should be made to the bloodstain analyst's Special Agent in Charge for approval. This should be done prior to engaging such an outside expert.
3. The technical review process should include a review of the written report, all photographs, evidence, laboratory analysis reports, or other relevant information which the bloodstain analyst used in reaching their findings. The review will be done by one of the SBI's trained bloodstain analysts. After the review, the report will be returned to the appropriate agent for release to distribution into the Case Records Management System (CRMS).