

Bloodstain Pattern Identification Subcommittee Annual Report

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Chair

During the past year the IAI has gained several new members to the bloodstain pattern identification discipline, not only from the United States, but also from Europe, Japan and Canada. As a new discipline our membership continues to grow.

One of our goals as a subcommittee over the preceding year was to establish a standardized vocabulary within our discipline. A final draft was completed by our subcommittee and presented to the Board of Directors at the Orlando conference, for their approval. This terminology was assembled by our subcommittee after extensive research of articles and publications, as well as personal interviews. It represents a compilation of phrases and definitions used currently by practitioners and professional organizations. Its purpose was to provide a common vocabulary for all disciplines within the Association, eliminating all boundaries, as a multi-disciplined approach to the crime scene process and its ultimate reconstruction. Attached is a copy of the recommended vocabulary and statement of purpose, as presented to the Board of Directors.

Several meetings have been held by members of our sub-committee regarding certification within our discipline. A common consensus was that minimum standards of training should be established. These standards would outline a standardized course outline for training courses in Bloodstain Pattern Identification. There are still mixed emotions pertaining to the term certification and at present no definite approach has been determined. However, as a new goal for the 1994 year within our discipline, a committee has been appointed to continue the study and possible implementation of a certification program. With new subcommittee members and undoubtedly new ideas, hopefully, concepts can be finalized pertaining to a valid certification program.

Again, our discipline had a very successful breakout training program at the Orlando conference. Our approach to training was that of a "Multi-Disciplined Approach to the Crime Scene Function". We had some very interesting speakers from the other disciplines within the Association, as well as from our own. Our subcommittee members for the 1994 I.A.I. year have already been contacted and are hopefully working toward another successful training conference in Phoenix.

Terminology Bloodstain Pattern Identification

This glossary of terms is proposed by the Bloodstain Pattern Identification Subcommittee, 1993. This terminology was assembled after extensive research of articles and publications as well as personal interviews. It represents a compilation of phrases and definitions used currently by practitioners and professional organizations. The purpose for this project was to provide a common vocabulary for all the disciplines within the Association.

Bloodstain Pattern Identification is the recognition and study of the physical characteristics of blood stains and patterns as a function of origin, flight paths, force and sequence that permits reconstruction of a chain of events involving bloodshed. In consideration of the above defined purpose of our discipline, the intent of this subcommittee is to establish an acceptable vocabulary within our discipline. Our goal is to provide this terminology to all associated disciplines, thus eliminating all boundaries and providing a multi-discipline approach to the crime scene process and its ultimate reconstruction.

Terminology

I. Definition and/or clarification of terms generally accepted by various authorities in the field of Bloodstain Pattern Analysis.

II. Definition and characterization of identifiable stain patterns which have been scientifically researched and documented.

I. General

ANGLE OF IMPACT: the internal angle at which blood strikes a target, relative to the horizontal plane of that target.

ATOMIZED / MISTING: blood that has been reduced to a fine spray that characterizes high velocity incidents.

BACK SPATTER: blood that is projected back toward the energy source.

CLOT: fibrous material which results from plasma separation as red cells retract from serum.

CONVERGENCE: the common intersection to which a bloodstain pattern can be projected. (This convergence is determined by tracing well defined bloodstains back to a common reference point or source.)

DIRECTIONALITY: related to, or indicating, the direction of blood traveling in space from its origin. (This term can be applied to stain ellipse or pattern distribution.)

DROP: blood volume of approximately .05 ml falling to a surface.

FORWARD SPATTER: blood particles that travel in the same direction as the source of energy or force that caused the spatter.

IMPACT SITE: the site where static blood is forcefully acted upon. An impact site may also refer to the target surface upon which blood has landed.

ORIGIN - POINT OF: the location in space where bloodshed originated.

PARENT DROP: the central stain from which a satellite spatter originates.

SATELLITE SPATTER: small droplets of blood that are projected around or beside a parent drop.

SECONDARY SPATTER: blood droplets which have been deflected by an intervening object prior to landing on a target.

SERUM: a clear or yellowish stain that is present after retraction of red cells.

TARGET: a surface onto which blood has deposited.

TERMINAL VELOCITY: the maximum speed to which a free-falling drop of blood can accelerate in space: approximately 25.1 feet per second.

VELOCITY: the extent or degree of force associated with an incident of bloodshed.

II. Pattern Classification / Descriptions

CAST-OFF PATTERN: blood drops that are flung or cast from some object as a result of a motion, creating a series of stains that describe an arcing pattern. Stains within the pattern appear more elliptical in their direction of travel.

DRIP: a series of blood drops accumulating in a central pool, surrounded by a radial spatter pattern.

FLOW: an accumulation of blood drops in motion, directed by gravitational pull or being shed by a moving source. Direction of the moving source is determined by the spatter or ellipse of the stains.

IMPACT SPATTER PATTERN: a distribution of blood particles which result from a single action, traveling in a conical mass prior to landing. The extent or degree of force associated with a pattern may be interpreted by the predominant stain diameters found within the pattern, as follows:

- **LOW VELOCITY (LVIS):** blood subjected to a force of 5 feet per second or less. Commonly refers to blood splashed onto a surface or subjected to minor impact.
- **MEDIUM VELOCITY (MVIS):** blood subjected to a force of 5 to 25 feet per second or less. Predominant stain diameters are 3 mm and less. Commonly associated with blunt force injuries.
- **HIGH VELOCITY (HVIS):** blood subjected to a force of 100 feet per second or more. Predominant stain diameters are 1 mm and less, often appearing as a fine, atomized mist accompanied by larger droplets. Commonly associated with gunshot wounds and explosions.

PROJECTED: a volume of blood being propelled forward or downward at speeds greater than normal falling speed. The resultant stains are surrounded by spiny edges accompanied by numerous smaller blood droplets. These patterns are commonly produced by blood released under pressure such as arterial spurting or gushing. Blood may also be projected by an act of vomiting or expectoration - or when a pool of blood is subjected to a forceful impact.

SMUDGE: a stain that has been distorted to a degree that its history cannot be identified. (Chemical enhancement of these stains may yield identifiable patterns.)

SPLASH: a pattern created when a volume of blood drops (approximately 1.0 ml) or spills to a surface or is subjected to minor impact.

SWIPE: transference of blood from a moving source onto a previously unstained surface. Direction of motion is usually determined by the feathered edge or the accumulation of blood at one end of the pattern.

TRANSFER: a pattern created when blood is transferred from one object or surface to another.

TRANSFER IMPRESSION: an image created by contact of a bloodstained object onto a non-stained surface.

VOID / SHADOWING: an unstained area within a pattern or stain from which an intervening target has been removed.

WIPE: a pattern created when an object moves through the existing stain, removing and/or altering its appearance.