Deadline of Submission of Document Number: 17-Jun-24

Document Number: ANSI/ASB Std 196

Document Title: Standard for the Documentation and Processing of Shooting Scenes

Comment #	Comenter's Name	Commenter's Email	Text Line # (s)	Document Section	Type of Comment E-Editorial T-Technical	Current Document Wording	Proposed Revision	Revision Justification	*For Working Group and Consensus Body use only, not to be completed by commenter.* Final Resolution
1	Taryn Emswiler	TarynEmswiler@fdle.state.fl.us	45	Terms & Definitions	E	casing	remove casing as an official term	Believed to be considered a slang term in the field of Firearms	Accept
2	Taryn Emswiler	TarynEmswiler@fdle.state.fl.us	97,123	Glossary	T	low (incident) angle used in two defintions	Define what low angle is in terms of a specific number, if there is one	Make definitions easier to understand for someone not in the field of ballistics	Accept with modification. Definition for pinch point revised for clarification and to remove low incident angle. Defintion for ricochet revised to shallow angle
3	Taryn Emswiler	TarynEmswiler@fdle.state.fl.us	155	Procedures	E	Shooting Scene Preservation Firearms Evidence Documentation	Preservation AND Firearms Evidence	missing word	Accept
4	Charles DeFrance	csdefrance@fbi.gov		4.2.1	E	…for example: ejection pattern,	for example: impact sites, fired cartrdidge cases…	Return impact sites since they are a major item discussed. Remove ejection pattern since the location of cartridge cases covers that topic.	Reject. Impact sites are ballistic evidence, not firearm evidence. Section 4.3 contains the projectile impact information.
5	Charles DeFrance	csdefrance@fbi.gov		4.2.1.1	E		Move under 4.1. Add wording that there are other safety issues related to scenes and shooting scenes in particular that are not addressed in this standard.	By calling out firearms safety specifically, it makes all the other hazards in a shooting scene (eye protection around trajectory rods,	Reject with modification. "and any departmental or agency requirements and protocols" added to the last sentence to cover generic safety issues.
6	Taryn Emswiler	TarynEmswiler@fdle.state.fl.us	163	Procedures	T	ANSI/ASB BPR Rec shall be used to minimize	Shall to should?	Can shall be used in reference to a BPR? If so, then should the BPR actually be a STD?	Reject. A BPR can be referred to normatively according to ASB guidelines.
7	Sean Conner	sean.conner@mesaaz.gov	167-168	4.2.1.3	T	A unique identifier shall be assigned for each cartridge case, and recorded, along with respective headstamp information.	A unique identifier shall be assigned for each cartridge case, and recorded, along with respective headstamp information, when practicable and necessary.	I've been to plenty of shooting scenes where I've collected multiple fired cartridge cases as a single item when based on the scene it made sense to do so. A collection of fired cartridge cases in roughly the same area, all of the same caliber, and with witness information indicating 1 shooter doesn't need to be collected as separate items. NIBIN would prefer them all be together to decide the best exemplar to enter and later processing for DNA would like them collected together to faciliate swabbing. Headstamp information is a little overrated in my experience and opinion given the proliferation of reloaders and multiple headstamps being found in a single gun magazine.	Accept with modification. "Exceptions shall be documented." has been added to the end of the section.
8	Taryn Emswiler	TarynEmswiler@fdle.state.fl.us	167	Procedures	T	A unique identifier shall be assigned for each cartridge case	shall be assigned for each cartridge case or tight cluster of cartridge cases	Language adjusted to accommodate when there is a tight pattern of cartridge cases. If each individual location is required, provide a NOTE or explanation as to what that information is used for	Accept with modification. "Exceptions shall be documented." has been added to the end of the section.
9	Kelly Keyes	kellykeyesmdi@gmail.com	177-180	4,2,1,7	T	n the course of shooting scene documentation and processing, it may be necessary for the 178 investigator to move objects within the scene in the interest of the investigation (e.g., search, body 179 movement). This is permissible, but non-destructive actions shall be taken first to record the 180 object's location to allow the object to be properly replaced for analysis, if necessary.	add" In cases where there is a decedent on scene, response to and removal of the decedent shall be prioritized, and shall be coordinated with the medicolegal death investigation authority to ensure the condition of the remains is altered by decomposition as little as possible."	This does not address if there is a decedent on scene, it should be made clear that if there is a decedent on scene the ever changing condition of the remains needs to be considered, and collaboration with the medicolegal death investigation authorities needs to occur, to ensure that needs of both entities are considered and prioritized to ensure protection of the condition of the remains. Far too many times i've had CSI want to process the scene for hours and hours, and leave the body laying there, decompsing and changing adn loosing potential fleeting evidence (related to time of death or wound margins dehydrating), not to mention decomposition occuring which is desprectful to the decedent and potentially to family's ability to view them.	Reject. This recommendation is outside the scope of this document.
10	Sean Conner	sean.conner@mesaaz.gov	183-186	4.3.1	T	All projectile impacts shall be documented to include photography, labeling, measurements, and location. Surface damage that lacks the physical or chemical characteristics to describe it as a projectile impact shall be documented in the same manner as a projectile impact and may be referred to as a defect.	All projectile impacts shall be documented to include photography, labeling, measurements, and location. Surface damage that lacks the physical or chemical characteristics to describe it as a projectile impact shall be documented in the same manner as a projectile impact and may be referred to as a defect, when practicable and necessary.	Same comments as before, not every shooting scene warrants this level of documentation based upon the circumstances and criminal offenses involved.	Accept
11	Charles DeFrance	csdefrance@fbi.gov		4.3.1	T	…and location.	…and 3-dimensional location.	All measurements must be in 3D. It is not uncommon for measurements to be taken in 2D and neglect that important third measurement.	Reject. 2D measurements to represent a 3D scene is generally accepted
12	Charles DeFrance	csdefrance@fbi.gov		4.3.1	E	Surface damage that lacks…shall be documented…	Surface damage that lacks the physical or chemical characteristics of a projectile impact should be documented and may be referred to as a defect.	Shall is a really strict requirement for every scuff mark and screw hole in a scene.	Accept with modification. Based on Comment 10, "when practicable and necessary" have been added to the end.
13	Charles DeFrance	csdefrance@fbi.gov		4.3.2	E	A single path…	Delete this sentence.	There are lots of potential pitfalls by labeling impacts as trajectories on the front end.	Accept with modification. Sentence revised for clarification to read: "When multiple impacts have been associated A with a single path with multiple projectile impacts they can be documented in a corresponding manner."

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14	Sean Conner	sean.conner@mesaaz.gov	188-190	4.3.2	T	Projectile impacts shall be given a unique identifier and that shall be recorded in photographs, notes, and sketches/diagrams. A single path with multiple projectile impacts can be documented in a corresponding manner (e.g., A1, A2, A3).	Projectile impacts shall be given a unique identifier and that shall be recorded in photographs, notes, and sketches/diagrams. A single path with multiple projectile impacts can be documented in a corresponding manner (e.g., A1, A2, A3), when practicable and necesary.	I've been to plenty of shooting scenes where there is just a single hole in a car door, a single hole in a house, or a single projectile that traveled through two walls into a neighboring apartment. This level of documentation just isn't necessary for every shooting scene. A few weeks ago, my colleague responded to a scene where an intoxicated individual fired off 12 rounds into the dashboard of his own car. Why are we going to do all of this documentation for what amounts to a misdemeanor discharge of firearm in city limits or similar such charge?	Accept with modification. Sentence revised for clarification to read: "When multiple impacts have been associated A with a single path with multiple projectile impacts they can be documented in a corresponding manner."
15	Charles DeFrance	csdefrance@fbi.gov		4.3.3.b	T	…a scale/label.	...and perpendicular to the plane of the target surface.		Reject. Already covered in section 4.3.3 a
16	Charles DeFrance	csdefrance@fbi.gov	199		E		Remove note.	This section relates to impact documentation and the note references trajectory documentation. These are two different topics.	Accept
17	Charles DeFrance	csdefrance@fbi.gov	205	4.3.4.a.1	T	construction	material	Construction implies assembly, but what we want to do here is document the material(s) being impacted.	Accept
18	Taryn Emswiler	TarynEmswiler@fdle.state.fl.us	206	Projectile Impact Characteristics	T	contour	Does it mean curvature? Slope? Wouldn't that be similar to angle?	expand this consideration so it is more clear what is meant	Accept with modication. Added e.g. statement
19	Charles DeFrance	csdefrance@fbi.gov		4.3.5	T	Location of Projectile Impacts	3-Dimensional location (title and in body)		Reject-2D measurements to represent a 3D scene is generally accepted
20	Charles DeFrance	csdefrance@fbi.gov		4.4	T			The qualities of a trajectory that need to be determined/documented are directionality, location, and angles. That is how the original OSAC document was written. That was reworked in a way that lacks clarity. Suggest returning to the original organization.	Reject - Vague comment. These characteristics are covered in the revised document.
21	Charles DeFrance	csdefrance@fbi.gov	n/a	4.4 (4.3.2 in OSAC)	T	Original OSAC text removed.		A trajectory line must be associated with at least one measured impact in the scene. If this is not done, then the line is just floating in space and not rooted to the scene.	Reject - Vague comment. These characteristics are covered in the revised document. Under 4.4.2.2.3
22	Charles DeFrance	csdefrance@fbi.gov		4.4.2.1	E	e.g....	Remove e.g.	Consider removing e.g. as there are so many more common physical characteristics not included.	Reject. "e.g." is not intended to be "all inclusive". WG believes that it is important to have examples.
23	Charles DeFrance	csdefrance@fbi.gov		4.4.2.1	E	(e.g., pinch point, lead-in mark, bullet wipe)		Not incorrect, but also not all the most common indicators of directionality.	Reject. "e.g." is not intended to be "all inclusive". WG believes that it is important to have examples.
24	Charles DeFrance	csdefrance@fbi.gov		4.4.2.2.1	T		Single projectile impacts can provide trajectory information	This topic was very intentionally avoided because it is too hard to describe here when this technique does not work.	Reject: The use of "can provide" indicates that the technique isn't infallible. CB believes it is important to mention the existence of this technique.
25	Charles DeFrance	csdefrance@fbi.gov		4.4.2.2.2		…using tools such as rods, strings, or lasers.		The statement is not false, but it neglects that the trajectory can be determined through notes of those projectile impacts, calculations, or graphically.	Reject - The language does not exclude using notes, calculations or graphical analysis. These techniques are also covered under 4.4.3 b) and c)
26	Charles DeFrance	csdefrance@fbi.gov		4.4.3	E	horizontal (azimuth) angle and vertical (elevation) angle		We have already established the equivalency of horizontal to azimuth and vertical to elevation in the terms. Why keep using both terms?	Reject - Associations between common language and technical language can be helpful. Defintions cross reference these terms.
27	Charles DeFrance	csdefrance@fbi.gov		4.4.3.a.3 and 4 and 6.e	T	zero-base protractor	protractor	There are a couple issues. First, this implies that a zero-base protractor is required for this measurement when it is not. Second, the equipment section calls them zero-edge protractors, so we have inconsistent terminology. And third, the equipment list also includes standard protractors as an option, which contradicts the implied requirement to use a zero-base.	Reject with modification - terminology for protractor was rendered consistent at "zero edge"throughout the document. WG agrees that zero edge protractor is most appropriate equipment to be used.
28	James Carroll	jpcarrol@lasd.org	247	4.4.3a5	T	all angle measurements shall be recorded in the scene investigator's case notes and documented photographically;	all angle measurements shall be recorded in the scene investigator's case notes and/or documented photographically;	It seems excessive and redundant to require both the recording (presumably via pen/pencil) of angle measurements and the photography of angle measurements. This is especially true when limited personnel are available. It is very difficult, if not impossible, for one person to hold the measuring equipment and take a photograph of it.	Accept. Changed to "and/or"
29	Charles DeFrance	csdefrance@fbi.gov		4.4.3.a.5	T	all angle measurements shall be recorded in the scene investigator's case notes and documented photographically		Do we want to require? Does this require photographing the actual measurement of the angle, such as a photography of the angle finder? Is that necessary?	Accept - changed to and/or
30	Charles DeFrance	csdefrance@fbi.gov		4.4.3.a.5 and 6			and documented photographically to accuractely reflect the horizontal or vertical angle.	Combine these two.	Reject - These are two separate procedures. 6 is specific to the perspective of a photo while 5 is the option whether or not to photograph.
31	Charles DeFrance	csdefrance@fbi.gov		4.4.3.a.6	T	when photographing, photographs shall be taken to accurately reflect the horizontal or vertical angle		There is a technique for taking photographs in a manner that allows for measurement of angles from the photograph. Is that what we are talking about here? Or is this just general photodocumenation of the trajectories?	Reject - 4.4.3.a.6 indicates that it is perspective related.

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32	Charles DeFrance	csdefrance@fbi.gov		4.4.3.c	T	...are measured from the same reference plane.		This should be a common coordinate system, not a reference plane. See 4.3.5. It is not uncommon that impacts are measured in different coordinate systems that have to be associated later. For example, a trajectory that traverses multiple rooms. Those impacts would often be measured using a coordinate system associated with the room they are in, but the overall sketch of the scene should allow for those coordinate systems to be associated and one converted to the other so that everything can be done in a single coodinate system. However, the point is that they are not MEASURED in the same coordinate system.	Accept: Chnged to: "Horizontal and vertical angles can be calculated using trigonometry or resolving multiple measurements in a coordinate system."
33	Taryn Emswiler	TarynEmswiler@fdle.state.fl.us	259	Projectile Recovery	T	Efforts shall be made to minimize damage to projectiles...	Add an example or note for not using metal tools to retrieve projectiles or projectile fragments	Ensures it is clear to the reader what types of steps can be taken to minimize damage	Reject - The point is to minimize damage however the CSI achieves this.
34	James Carroll	jpcarrol@lasd.org	267	4.5e	T	If a projectile cannot be found or physically recovered, the reasons shall be documented.	If a projectile cannot be physically recovered, the reasons shall be documented.	It may not be known why something cannot be found. In other words, perhaps a search was conducted in areas likely to contain the projectile, but it was not located. The reasons may be unknown.	Accept: Language was modified to read: "Projectiles that cannot be found or physically recovered shall be documented."
35	Charles DeFrance	csdefrance@fbi.gov		4.5.f	E	If the projectile impact on a target is removed, the removed area shall be collected and preserved.		Unclear what this means.	Accept with modification: "If the a projectile impact is removed from the scene, the removed area shall be collected and preserved."
36	Charles DeFrance	csdefrance@fbi.gov		4.6.2	T	Shot accounting shall include the loaded status of all firearms and magazines recovered in connection with the shooting incident.	If the loaded status of firearms and magazines connected to the shooting incident are available, they shall be included in shot accounting.	This information is not always available.	Accept - Added "if available"
37	James Carroll	jpcarrol@lasd.org	276	5.1	E	Notes shall be taken contemporaneously with the examination, which records pertinent observations and measurements.	Records of all pertinent observations and measurements shall be made contemporaneously with the examination. OR Notes, which record pertinent observations and measurements, shall be taken contemporaneously with the examination.	Wording is awkward	Accept - chose second option
38	Taryn Emswiler	TarynEmswiler@fdle.state.fl.us	276,277	Recording and Reporting Observations	E	Notes shall be taken contemporaneously with the examination, which records pertinent observations and measurements	examination, which **record**	missing word or wrong word somewhere?	Accept - see above
39	Taryn Emswiler	TarynEmswiler@fdle.state.fl.us	275,280	Sections 5,6	E		Better suited at the beginning of the document since all tooks and information needed prior to executing tasks within the document?		Reject. The CB feels these sections are appropriately placed, as they are listed in the Table Of Contents.
40	Charles DeFrance	csdefrance@fbi.gov	329		E	Noedell	Noedel	misspelled	Accept - changed

Deadline of Submission of Document: 21-Jul-25

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1		Under 3	T	N/A	directional angle The angle (gamma) between the long axis of a projectile impact and a defined reference line on the target.	Angle of Impact and Directional Angle are used together to determine the shooter's location. This is the same term/concept as in BPA.	Reject: Bullet/Projectile defects differ from bloodstains in that a clear elliptical configuration is less common/probative. Liquid blood drops in flight are "oscillating spheres" vs. bullets that can yaw, fragment, and become destabilized. "gamma" is outside the commen terminology for shooting reconstruction.
2		3.2	T	Angle of Incidence	Angle of Impact	The concept and mathematical determination are the same in bloodstain pattern analysis as in shooting incident reconstruction. Therefore, the same term should be used. Two terms for one concept is what we are trying to avoid.	Accept with modification: Although Shooting Incident Reconstruction in not analgous with BPA, reconstructionists also use "angle of impact" which has been added to the definition.
3		3.18	E	The angle in a horizontal plane typically between the path of a bullet and a object that was struck, also known as azimuth angle.	The angle on a horizontal plane between the trajectory and an object struck, also known as the azimuth angle.	Wording	Reject with modification: Trajectories are parabolic and are calculated vs. a bullet path represented by a straight line during on-scene reconstruction. Modified definition to include "measured at the point of impact".
4		3.19	T	Lead-in Mark	Leading Edge	Correct Term	Reject: the term as written in the commen term used in shooting reconstruction.
5		3.19	T	A visible, thin, elongated deposition of bullet wipe transferred to a surface as a bullet first makes contact with that surface at a shallow angle of incidence.	The initial impact point where a bullet strikes a surface will create a dark, half-elliptical area from the abrasion, lead transfer, soot, and/or debris.	More common feature and aspect	Reject: Proposed revision is an explanation rather than a definition
6		3.21	E	NOTE Pellet patterns can be used to estimate the muzzle-to-target distance and/or impact angle	NOTE Pellet patterns can be used to estimate the muzzle-to-target distance and/or angle of impact	Correct Term	Accept with modification: Changed to "Angle of incidnece"
7		3.22	E	Projectile damage where the projectile entered and did not exit a target.	Projectile damage or wound where the projectile entered and did not exit a target.	Broader application	Reject: Projectile damage includes wounds and targets include human targets.
8		3.23	E	Projectile damage where the projectile entered and exited a target.	Projectile damage or wound where the projectile entered and exited a target.	Broader application	Reject: Projectile damage includes wounds and targets include human targets.
9		3.24	T	A small area of surviving original surface within an angled projectile impact that is located at the initial contact point.	A small area of surviving paint from original surface within an angled projectile impact that is located at the initial contact point.	The particles left behind are paint	Reject: The remaining particles are not necessarily paint. Certain laminates and other materials can be excellent indicators of a pinch point.
10		3.35	E	The angle in a vertical plane typically between the path of a bullet and level, also known as elevation angle.	The angle on a vertical plane between the path of a bullet and level or vertical, also known as elevation angle.	Wording and application	Reject with modification: the inclusion of "Typically" in the defintion allows for measurements other than using a "zero" horizontal plane. For clarification, "measured at the point of impact," added to the definition.

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11		4.2.1	T	for example: ejection pattern, fired cartridge cases, fired bullets/projectiles, firearms, and/or other ammunition components.	for example: firearms and firearm components, cartridge cases, bullets/projectiles, and/or other ammunition components	An ejection pattern is an analysis where the others are specific items. The documentation of a scene should not include any analysis.	Accept. "Eection pattern" was deleted. NOTE: The word "fired" was not included in the proposed revision, howeverwas not excluded in the revision.
12		4.2.1.2 now 4.2.1.3	T	Location of each fired cartridge case shall be documented.	Location of each cartridge case should be documented. Cartridge cases may be grouped together if within a small area.	The need to measure the exact location of each cartridge case in a shooting does not provide a more accurate determinaiton of the shooter's position due to the ground, terrain, objects, or other factors.	Reject: WG disagrees with explanation. Normative reference (Std. 159) allows for exceptions to be made as long as they are carefully doucmented
13		4.2.1.7 now 4.2.1.8.1	T	to allow the object to be properly replaced for analysis		an object should never be replaced after it is moved.	Reject with modification: Sentence added: "Method(s) implemented to record the removal and replacement of each item's position/location shall be clearly documented."
14	177-180	4.2.1.7 now 4.2.1.8.1	T	In the course of shooting scene documentation and processing, it may be necessary for the 178 investigator to move objects within the scene in the interest of the investigation (e.g., search, body 179 movement). This is permissible, but non-destructive actions shall be taken first to record the 180 object's location to allow the object to be properly replaced for analysis, if necessary.	add" In cases where there is a decedent on scene, response to and removal of the decedent shall be prioritized, and shall be coordinated with the medicolegal death investigation authority to ensure the condition of the remains is altered by decomposition as little as possible." or add similar languae as you did to the other scene standard for which this came up.	my comment from first round was not resolved and is not out of scope of this document. Please refer to the prior comment about addressing the scope of this document to address specialized responders like MDIs to whom an outsider may think this document would apply, but it overarchingly does NOT, given their limited focus.	Accept: Wording developed for Std 195 has been added to section 4.1
15		4.4.2.2.1	E	Single projectile impacts can provide trajectory information through measurements to calculate an impact angle using trigonometric functions.	Single projectile impacts can provide trajectory information through measurements to calculate an angle of impact using trigonometric functions.	Correct Term	Accept
16		4.4.2.2.3	E			Should be a sentence at the end of 4.4.2.2.2 and not its own subsection since it is referring directly to the one above.	Reject with modification: Sentence clarified to not refer to the previous paragraph.
17		4.4.3 - C	E	Horizontal and vertical angles can be calculated using trigonometry or resolving multiple measurements in a coordinate system.	If it is determined that the projectile impacts are associated with a single projectile, horizontal and vertical angles can be calculated using trigonometry or resolving multiple measurements in a coordinate system.	Clarification when this can be used	Reject with modification: Sentences revised to NOTES and revised for clarification.
18		4.4.3 - D	E	Impact angles for single projectile impacts can be calculated using trigonometry when the length and width for the projectile impact are measured.	An Angle of Impact for single projectile impacts can be calculated using trigonometry when the length and width for the projectile impact are measured.	Correct Term	Accept with modification. Modification made and item converted to a NOTE.
19		4.4.3 - D	T		The directional angle should be determined based on either the vertical plane or a horizontal standard.	Needed for reconstruction when determining a shooter's location if the horizontal and vertical angles cannot be obtained with a trajectory rod.	Reject: At this time the recommended addition is not common practice in shooting reconstruction. The CB would like to readdress this topic when the document is up for revision in a few years.
20		4.5	T	Shall	Should	The projectiles should be made to locate and recover the projectiles, however, there are many times where this is not feesible as stated in subsection e.	Reject: The CB is aware that it may not be possible to find all items, but feels that all **efforts** shall be made in the recovery process. Additionally, this was broken into two sections to clarify the requirements.

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21		4.5 e)	E	Projectiles that cannot be found or physically recovered shall be documented.	Projectiles that cannot be physically recovered shall be documented.	A very similar comment was previously submitted (comment 34), but the adjudication suggests that the comment/suggestion may not have been understood because it was listed as accepted, yet the issue was not fixed. The issue is that sometimes projectiles cannot be found, but the investigator may not know to look for it. For example, a shot is fired at a high angle (e.g., +30 degrees) and the projectile lands several blocks away. This projectile doesn't end up being found, because it is several blocks away , outside of the scene containment. It is hard to document something that isn't known. I believe the spirit of the current wording is perhaps a situation in which there is a hole in a wall that is believed to be/determined to be caused by the passage of a bullet, with no corresponding exit on the opposite side of the wall. The bullet is likely in the wall, but after an exhaustive search it is not located (i.e., not found). I agree completely that this shall be documented, and the proposed revision covers this scenario in my opinion.	Reject with modifiation: If a shot was fired and no evidence at the scene indictes said shot was fired (e.g. revolver fires bullet into the air), the investigator cannot be faulted for not knowing the shot was fired. Sentenced changed to its format: "d) reasons documented if a projectile cannot be found or physically recovered."
22		4.5 - f	E			Does not apply to this section as it is the recovery of a projectile impact and not a projectile	Accept. Moved to 4.3.5
23		6 - f	E	Inclinometers	Inclinometers / Angle Finders	To coincide with use of inclometers above	Accept
24		6 -s	T	N/A	Calipers	Used to measure the width and length of a projectile impact	Accept