Deadline of Submission of Comments: **27-Apr-20**
Document Number: **ASB Std 137**
Document Title: **ASB Standard 137, Standard for Examination and Documentation of Footwear and Tire Impression Evidence, First Edition**

Note: a specific Proposed Resolution must accompany each comment or it cannot be considered.

#	Section	Type of Comment (E-Editorial, T-	Comments	Proposed Resolution	Final Resolution
6	Foreword	E	While no ACE-V process can ever or should ever be 100% linear, failing to treat each step of that process as a separate and distinct endeavor has provoked serious errors in forensic science. For example, the Office of the Inspector General determined that one of the causes of the Brandon Mayfield misidentification in the latent print realm was the failure by examiners to fully separate and distinguish between analysis and comparison. Examiners there fell prey to circular reasoning, i.e. they sued the comparison stage and features observed in the known print of Mayfield to reason backwards and fill in blanks or ambiguities in the latent print. The result: before exposure to Mayfield's known print the FBI examiners marked out only 7 features (4 bifurcations and 3 ridge endings) on the latent recovered from the bombing, but after keying in on Mr. Mayfield as a suspect (and in an attempt to resolve differences so that the latent matched the print of Mr. Mayfield), the same examiners falsely identified him by re-labeling 5 of the 7 original features (from bifurcation to ridge ending, and vice versa) as well as adding 9 new features (an independent examiner after the fact, however, determined that 7 of the 9 added features were incorrect, as were all but one of the changes). The foreword to this standard, as currently written, acknowledges that processes may not be 100% linear by saying "some steps may not have clearly defined starting and ending points and that steps may need to be revisited at various times in the examination." But nowhere in the foreword or otherwise, does the standard grapple with defining the circumstances under which such revisiting might be appropriate or inappropriate. By failing to do so this standard does nothing to guard against the kind of circular reasoning that helped provoke the Mayfield error. If certain circumstances warrant, for example, revisiting the comparison phase (the examiner is on the fence between an inconclusive and identification in a very close call, or the examiner sees evidence of some oddity in the known that justifies performing more analysis of the latent) those circumstances should be laid out clearly for examiners and should require documentation indicating what the examiner did and why. More generally, and at a minimum according to groups like NCFS, documentation and transparency require that records should be created contemporaneous with the examination of evidence and the technical review that, along with the Forensic Science Service Provider quality management system documents relating to the forensic work performed, would allow another analyst or scientist, with proper training and experience, to understand and evaluate all the work performed and independently analyze and interpret the data and draw conclusions. This forward should make that requirement clear. Each section and subsection of the standard should then outline precisely what kinds of documentation would be required to meet minimum thresholds of documentation and transparency for this discipline. In many instances this standard does that in the sections that follow. Where appropriate I have added some additional items that should be documented to meet this standard.	A section should be added to the standard indicating or at least broadly outlining the justifications for revisiting steps of the ACE-V process as well as documentation requirements clearly indicating that the examiner has gone backwards in said process, why they did so, and what new information or opinions, if any, that revisiting contributed to. Language should also be added to indicate that records should be created contemporaneous with the examination of evidence and the technical review that, along with the Forensic Science Service Provider quality management system documents relating to the forensic work performed, would allow another analyst or scientist, with proper training and experience, to understand and evaluate all the work performed and independently analyze and interpret the data and draw conclusions	Accept with Modification: Suggestions were addressed throughout this document (see sections: 4.1, 4.2.1, 4.3.1, 4.4.5, 4.6, 4.6.3) as this information is not appropriate for the foreword section.
1	2	E	Annex B is referenced, but there is not Annex B.	Change "Annex B" to "Annex A"	Accept
15	3.1 - 3.6		I would just double-check to make sure terms 3.1-3.6 are consistent among all our documents. 		Accept: Section 3 is applicable to this document only and these terms do not appear in other ASB Footwear and Tire CB documents. CB did double check for consistency.
7	4.1	E & T	This section includes language indicating that "The type of documentation (photographs, written, annotations, etc.) that is used to meet this standard may vary." On a technical note it appears, I would assume, that an unintentional comma has been added between the words written and annotations. On a more substantive note, this language threatens to create confusion and diminish best practices in terms of fully documenting the features (class and characteristics of use) relied on by examiners. There is an avalanche of research from other ACE-V methods indicating that, not only are the ultimate conclusions of examiners subjective, but also their feature selection is a subjective and variable endeavor that is not without errors. Affected parties in the legal system (defense and otherwise) therefore deserve to know what features examiners are relying on to reach their determinations and to have those features documented in a fashion that is standard and robust. Some courts are even beginning to make such disclosures mandatory. For example People v. Safford, 392 Ill. App. 3d 212, 228 (1st Dist. 2009) & North Carolina v. McPhaul, 808 S.E.2d 294 (App. Ct. 2017). By inserting this language, however, Standard 137 gives examiners who wish to document their examinations without explicit notations regarding features relied upon an out. In that way it creates a conflict with some other portions of this standard as currently written, as I will suggest they should be amended in subsequent comments.	Change the current language to: "The type of documentation (photographs, written annotations, etc.) used to record the observations made during the examination process may vary as outlined throughout the remainder of this standard." Each section and subsection of the standard should then outline precisely what kinds of documentation would be required to meet minimum thresholds of documentation and transparency. If rejecting this resolution as a whole and leaving the language as in, remove the superfluous comma between the words written and annotations.	Accept with modification: The first paragraph of Section 4.1 was updated.
16	4.2.1		4.2.1 - Is this for examination or inventory? Shouldn't all evidence be inventoried as soon as it is received? 		Reject: This section is accurate as is.
18	4.2.2-D		4.2.2. d language seem stilted. Recommend: inventory of content and assignment of identifiers..... 		Accept
8	4.3.1	E	By acknowledging that the analysis of an unknown impression shall occur prior o the analysis of a known this standard appears to recognize the danger of cognitive bias, particularly circular reasoning, that I noted in my earlier comment. Spurred on by the Mayfield misidentification and the extensive research on cognitive bias (specific to forensic science and otherwise) multiple agencies have begun to recommend the incorporation of various protections into the process for conducting ACE-V. Because this standard explicitly adopts ACE-V as the method for examination it should heed those recommendations. More specifically, the Office of the Inspector General, The Working Group on Human Factors sponsored by the DOJ to evaluate patent print comparisons, the American Academy for the Advancement of Science, the President's Council of Advisors on Science & Technology under Obama, Interpol, ENSFI, and others have recommended that some form of Linear ACE-V be adopted and used in all cases. These groups specifically note that examiners should complete the analysis phase prior to any***exposure*** to the known print and explicitly document the features observed during that phase. If during the comparison phase the examiner observes additional features those features should be distinguished and documented clearly as having been missed or misidentified during analysis. Glenn Langenburg and Christophe Champod recommend one way of doing just that in their article: "The GYRO System – A Recommended Approach to More Transparent Documentation," 61(4) JFI 273 (2011) and a collection of experts on forensics and bias have made similar recommendations and suggestions in to letters to the editor on sequential unmasking (published in JFS in 2008 and 2015). NCFS also offered additional guidance in its views document "Ensuring That Forensic Analysis is Based Upon Task-Relevant Information." But despite that plethora of recommendations, this section fails in two ways to guard against cognitive bias (1) it requires that examiners perform analysis of an unknown only prior to analysis of a known rather than prior to exposure to that known, and (2) it does not explicitly state that the analysis must also be documented before moving on to the known. Adding these requirements would be simple and would not overly burden labs who (at most) would need some type of case manager (as suggested by NCFS) to handle inventory of items to prevent exposure.	The section should read: "An examiner shall conduct and fully document their analysis of an unknown footwear or tire impression prior to any exposure to or analysis of a known footwear or tire."	Accept with modification: Section 4.3.1 has been updated.
21	4.3.2 a	T	what does sample preparation mean	add a definition	Accept with modification: Example was added for clarity to section 4.3.2 -a.
3	4.3.2a)	T	What is meant by sample preparation? If this is refering to enhancement or lifting," b) examination quality photographs;" should be first to avoid confusion of order.	If sample preparation is meaning enhancement or lifting, photographing should be placed prior to avoid order confusion. If this is not the definition of sample preparation, then the term should be better defined.	Reject: Sample preparation does not refer to lifting or enhancement. Example was added for clarity to section 4.3.2- a.
19	4.3.2-e		Similar minor grammatical concerns with 4.3.2 e, f relative to the opening paragraph of this section 		Accept: Section 4.3.2 -e and f were revised for clarity.
22	4.3.2 e	E	"determine suitability" would be more appropriate pharasing as the the entire process is the analysis	change analyze suitability to determine suitability.	Reject: Section 4.3.2- e was revised for clarity.
4	4.3.3a)	T	What is meant by sample preparation? If this is refering to test impressions," c) photographs of known footwear or tire;" should be first to avoid confusion of order.	If sample preparation is meaning test impressions, photographing should be placed prior to avoid order confusion. If this is not the definition of sample preparation, then the term should be better defined.	Accept with Modification: Section 4.3.3-a was revised for clarity.
5	4.3.3c)	T	This should include both general documentation and examination quality photographs. Examination quality photographs accurately document the outsole/tread of the known.	Include examination quality photographs.	Accept: See revised section 4.3.3-c.
17	4.3.4		4.3.4, 4.4.6, and 4.6.2 - how is complexity determined?		Accept with modification: Section 4.3.4 was updated to address factors of complexity.

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9	4.3.4	E	This section appears to conflict with sections 4.3.2 and 4.3.3. Specifically each of those two earlier sections, appropriately, makes annotations of class characteristics and characteristics of use mandatory. But 4.3.4 only requires such documentation "where applicable." If there are situations where such documentation would not be applicable (i.e. there were no suitable characteristics of use relied on) this section should specify those circumstances.	Section 4.3.4 should be removed. If it is retained it should not provide a way to avoid or justify not completing annotations of class characteristics and characteristics of use. It could therefore read: "Documentation of the analysis shall correspond to the complexity of the examination and ***shall*** include markings of ***all*** class characteristics and characteristics of use observed or relied upon by the examiner." (The bold and italics are for emphasis to reviewers of this comment.)	Accept with modification: Section 4.3.4 was updated for clarity.
10	4.4.2	E	This section currently reads "If significant non-correspondence is observed during the comparison the examiner may move to the evaluation…." This standard as written provides no standardized guidance to the examiner. The phrase "significant non-correspondence" should be denied.	Define "significant non-correspondence."	Accept with Modification: An example was added for clarity.
20	4.4.3		Section 4.4.3: Under what conditions might additional test impressions be needed. (I see the OSAC Statistical Task Group asking this eventually).		Accept with modification: The second sentence was revised for clarity.
11	4.4.4	E	This section admirably requires documentation of the choices made by examiners when creating test impressions. But it should go further and outline not just the matrix and substrate selected but the reasons why the examiner made those choices. Obviously there will be some variability in the matrixes and substrate selected by various examiners (unless some other standard with which I am unfamiliar lays out the explicit options and precisely when they should be chosen) and interested parties in the legal system deserve insight into rationale for examiner decisions in this area.	Section 4.4.4 should include as letter (d) the following language: "and the reasons the examiner selected the particular matrix and substrate utilized for a test impression."	Reject: This is outside of the scope of this document.
12	4.4.5	E	As mentioned above in my comments on Section 4.3.1, multiple organizations have recommended a shift not just to the way that examiners proceed through their examination (limiting exposure to a known) but also the way they document those examinations. Specifically, in the latent print field, multiple agencies recommend explicit documentation of (1) features observed during analysis, (2) features observed only once an examiner has proceeded to the comparison phase, and (3) any changes to feature mark ups caused by information gleaned during the comparison phase (many of these organizations also encourage assessments of confidence, i.e. documenting features in which the examiner is strongly confident as opposed to features the examiner believes, during analysis, may be present but is unsure of…that might be a good addition to this section as well as sections 4.3.2 and 4.3.3). While Section 4.4.5 calls for documentation of class characteristics and characteristics of use during the comparison phase it lays out no explicit requirement that an examiner indicate what features were observed or changed during that phase, in contrast to the many recommendations summarized in my comment to 4.3.1.	Section 4.4.5 should include a mandatory requirement that examiners clearly indicate any observations of the unknown or changes to prior observations of the unknown that occurred only after exposure to a known impression.	Reject with modification: Last paragraph added to section 4.4.5. "Inspection of the known can provide valuable information regarding the context of the questioned impression; therefore, contemporaneous documentation should reveal observations formed prior and post-examination of the known." The use of contemporaneous observations satisfies the need to document observations prior and post-examination of a known.
23	4.4.5 b	T	quality and quantity is already documented in earlier	recommend removing this consider its to be documented at an earlier phase of the exam	Accept with modification: Section 4.4.5 -b was updated for clarity.
24	4.4.6	T	marking of non-correspondence, I am not sure how this can be a done. Differences maybe a better term	change non-correspondance to differences	Reject: The definition for "difference" in the NIST/OSAC Lexicon is "A characteristic which demonstrates the particular known footwear or tire was not the source of the impression. " Difference should not be confused with Dissimilarity.
13	4.6.1	E	This section suffers from two major flaws: (1) it does not even acknowledge the value of blind verifications of lay out a process for such verifications, (2) it ***requires*** verification of only same source associations. The latter necessarily clues any verifier in to the conclusion reached by the initial examiner (if only same source associations are routinely verified because those are the only mandatory verifications) then examiners asked to perform a verification will know the conclusion reached by their peers. Moreover, this section wholly bypasses the movement towards blind verification and provides no process for when such verifications should or should not occur. Even years ago, SWGFAST recommended that blind verifications occur ""in cases involving an individualization, exclusion, or inconclusive of a person based on only a single latent print." The OIG, following the Mayfiled misidentification recommended blind verifications and the FBI adopted them in certain circumstances. And more recently the Houston Forensic Science Center has moved to blind verifications in all cases.	This section, in line with standards from other pattern matching fields that utilize ACE-V, should lay out the precise circumstances in which blind verifications are required or at least suggested (and given the success of labs like Houston there is no reason that should not be in all cases)/ Moreover, to prevent cognitive bias and ensure that examiners do not know whether they are verifying a same source association, this standard should also require verifications of all evaluation conclusions. Finally, this standard should specify that verifiers not be permitted to know the identity of the examiner whose work they are verifying until after they have completed their examination. All these goals could be accomplished (if the drafters of the standard wished) by incorporating the idea of a case manager pursuant to NCFS's recommendations of dealing with task irrelevant information.	Accept with modification: "Examiners are encouraged to employ methods to minimize cognitive bias during the verification process." Was added to section 4.6.1
25	4.6.1	T	"supports proposition of the same source". A clarification in regards to propostion of the same source would be helpful. Considering associations of class characteristics and limited association of class characteristics are technically a potential of being from the same source would these be subject to verification also? is the intent of this clause for "identifications only"	change language to either identification or positive associations, depending on the intent of the clause.	Reject: Terminology is valid as is.
14	4.6.2	E	This section sets unacceptably low standards for documentation by verifiers. The standard elsewhere indicates that all verifications must be "independent" but does not follow that requirement to its logical and necessary conclusions with regard to verification. If verifications are truly independent there is no reason or justification for requiring less documentation by verifiers than by initial examiners. Beyond that, multiple cases require testimony by verifiers in order for forensic pattern matching evidence to be admissible and considered reliable, for example: State v. Langill, 13 A.3d 171, 177 (N.H. 2010) & People v. Cline, 2020 IL App (1st) 172631 (2020). Defense attorneys and other interested parties should be given as much information about and transparency regarding the information relied on by the verifier as they are regarding the initial examiner to understand the conclusions reached and prepare for cross examination of that witness. Additionally, this minimal documentation requirement essentially eliminates even the possibility of conducting a blind verification, which is deeply problematic as outlined in previous comments. Finally, the standard in no way addresses the resolution process that should follow a disagreement between examiner and verifier (i.e. one examiner calls an identification and the verifier would only say inconclusive). A section should be added describing how that process should proceed and requiring robust documentation of how any disagreement was resolved. In many cases this way well constitute Brady material that the prosecution must disclose to the Defense, and forensic scientists cannot undercut that vital constitutional protection by not documenting disagreements and resolution processes.	Section 4.6.2 should set the documentation required by examiners to the same levels as those required by the initial examiner, potential language might be as follows: "Examiners performing independent verifications shall document their examinations in the same manner and to the same extentlevel as would be required if they were performing an initial examination. This applies to their documentation of the analysis, comparison, and evaluation phases." Additionally, a section should be added to describe the resolution process and the document of the process and the resolution when the examiner and the verifier disagree.	Accept with modification: See new sections 4.6.2 and 4.6.4 added to this document. Resolution process is up to the laboratory.
2	Annex A	E	The hyperlink to the SWGTREAD standards does not work.	Change current hyperlink to "http://treadforensics.com/index.php/standards/u-s/standards-swgtread"	Accept