



<b>ATF-LS-FT10</b> <b>Photo Documentation of Comparative Examinations</b>	Published Online: <b>March 2018</b>
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### I. Scope

This policy and procedure guideline sets a minimum standard for photo documentation in firearm and tool mark comparative examinations. This policy is applicable to all ATF Firearm and Toolmark Examiners and relates to documentation of comparative examinations of all types of tool marks.

### II. References

ATF-LS-FT3 Examination and Comparison of Fired Ammunition Components.

ATF-LS-FT6 Toolmark Examination.

ATF-LS-FT11 Theory of Identification and Range of Conclusions.

ATF-LS -4.13.2 Case Records.

AFTE Criteria for Identification Committee. "Theory of Identification, Range of Striae Comparison Reports and Modified Glossary Definitions – an AFTE Criteria for Identification Committee Report." *AFTE Journal*, 24(2), April 1992, pp. 336-340.

AFTE Documentation Standard Committee. "Standardization of Comparison Documentation." Adopted at AFTE Business Meeting, May 26, 2004 and published in *AFTE Journal Supplement* Volume 2, Issue 2, August 2004, pp. 18-19.

### III. Background

Based on the AFTE Theory of Identification, a comparison of two tool marks will result in one of four basic types of conclusions: the tool marks were produced by the same tool, the tool marks were produced by different tools, inconclusive and unsuitable for examination. In order to reach such a conclusion, an examiner has to evaluate the similarity or dissimilarity of various class and individual characteristics, and the potential for subclass characteristics.

The adopted AFTE Standardization of Comparison Documentation requires that, "At a minimum, the documentation must include **interpretable** depictions or descriptions of the agreement or disagreement of individual and/or class characteristics to the extent that another qualified firearm and tool mark examiner, **without the benefit of the evidence itself**, can review the case record, understand what was compared, and evaluate why the examiner arrived at the reported conclusion.

It must be understood that the documentation is not for the purpose of the individual doing the review to independently arrive at his or her own conclusion with regard to the evidence. It is to allow an individual reviewing the case record to determine if there is sufficient documentation of observations that supports the conclusion that was reached.

Furthermore, the language of the standard is such that the observations are recorded in a manner that is "interpretable." This means that the individual doing the review should be able to understand as precisely as possible what was observed. Simply, nebulous language that can be construed to

mean different things to properly trained examiners is to be avoided unless supplemented by photo documentation.

#### **IV. Clarification on the Role of Photomicrography in Comparison Documentation Requirements**

##### ***Class Characteristics***

Class characteristics are easily measured or classified, and the measurements or classifications recorded. Measurements are discreet and can be communicated in a manner that leaves little to no room for incorrect interpretation by another examiner reviewing the work. Likewise, classifications of class characteristics are done according to a classification scheme such that another properly trained examiner would know precisely what the original examiner observed. Therefore, the recording of such measurements or classifications according to standardized protocols without supplemental photomicrography is sufficient for an individual to review the case record for the purpose of determining whether the conclusions are supported.

##### ***Subclass Characteristics***

Subclass characteristics provide for a level of positive association of two items that is more restrictive than class characteristics but less than individual characteristics. Subclass characteristics have been defined as “incidental to manufacture” potentially arising from a “source that can change over time.” Due to their similarity to and potential confusion with individual characteristics it is essential that the evidence be evaluated for the potential of subclass characteristics.

If subclass characteristics are present, they must be documented and any potential influences addressed. If they are not present, then that should be documented as well. Due to their similarity to individual characteristics, if subclass characteristics are present and their correspondence forms the basis for the reported conclusions, then the guidelines for photo documentation of individual characteristics will apply.

##### ***Individual Characteristics***

Correspondence, or lack thereof, of individual characteristics is not easily communicated. Observations such as “significant agreement,” “good agreement,” “excellent matching detail,” can mean different things to each and every examiner. These do not completely serve as “interpretable descriptions” of what was observed because the individual performing the review will likely have his or her own concept of these phrases based upon individual training, experience and knowledge.

Therefore, the documentation of the comparison will be supplemented by photomicrography of a representative area that was observed. For example, the analyst could describe a particular pattern of correspondence as “good” correspondence and refer to a photograph of the actual comparison as an example of what he or she means by “good” correspondence. Then the individual performing the review has an “interpretable description or depiction.” If a series of exhibits is compared and identified a representative photograph of the observed correspondence is to be included. Not every comparison of a series need be documented by photographs.

There may be instances in which no correspondence was observed. In these cases, the wording itself provides an “interpretable description” of what was observed. There may be instances in which some correspondence was observed, but insufficient for a conclusion that the two marks were produced by the same tool. Photomicrography will serve as a helpful “interpretable depiction,” in that the examiner can take a photomicrograph of the best area and indicate in the notes that this

is an example of one of the better areas of correspondence, yet, insufficient for an unequivocal positive association.

If it is not possible to photo document a representative sample, then the best attempt will be made and then supplemented by a narrative that describes the issues preventing adequate photo documentation.