

## Letter to the Editor: Impact Damage on a Bullet and the Comparison to a Silicone Cast of Damage on a Shower Door Frame

Dear Editor,

I regrettably neglected to acknowledge the assistance of Laboratory Director Barry Miller, Solano County Crime Laboratory (former co-worker) in working the scene discussed in my paper "Impact Damage on a Bullet and the Comparison to a Silicone Cast of Damage on a Shower Door Frame" 2011 Volume 43, Number 3 (Summer), Page 261 thru 263.

Sincerely,

Mike Barnes

## Theory of Identification as it Relates to Toolmarks: Revised

By: Committee for the Advancement of the Science of Firearm & Toolmark Identification

Theory of Identification as it Relates to Toolmarks\*

1. The theory of identification as it pertains to the comparison of toolmarks enables opinions of common origin to be made when the unique surface contours of two toolmarks are in "sufficient agreement."

2. This "sufficient agreement" is related to the significant duplication of random toolmarks as evidenced by the correspondence of a pattern or combination of patterns of surface contours. Significance is determined by the comparative examination of two or more sets of surface contour patterns comprised of individual peaks, ridges and furrows. Specifically, the relative height or depth, width, curvature and spatial relationship of the individual peaks, ridges and furrows within one set of surface contours are defined and compared to the corresponding features in the second set of surface contours. Agreement is significant when **the agreement in individual characteristics** exceeds the best agreement demonstrated between toolmarks known to have been produced by different tools and is consistent with agreement demonstrated by toolmarks known to have been produced by the same tool. The statement that "sufficient agreement" exists between two toolmarks means that the agreement **of individual characteristics** is of a quantity and quality that the likelihood another tool

could have made the mark is so remote as to be considered a practical impossibility.

3. Currently the interpretation of individualization/identification is subjective in nature, founded on scientific principles and based on the examiner's training and experience.

*\*The additions that appear in bold, underlined text in the last two sentences of Section 2 were approved on February 22, 2011 by all members of the AFTE Committee for the Advancement of the Science of Firearm and Toolmark Identification. The Committee felt it was necessary to make these additions in order to account for the possible influence of sub-class characteristics when determining if sufficient agreement exists to conclude if two toolmarks share a common origin. The need for these additions was first recognized by AFTE member Gene Rivera on page 250 of his article "Subclass Characteristics in Smith & Wesson SW40VE Sigma Pistols", AFTE Journal, Vol. 39, No.3, Summer 2007, pgs. 247-253. The Committee recommends that these additions be adopted by the AFTE Board of Directors and that the AFTE Glossary be updated accordingly, to include an appropriate revision date. Footnote by John Murdock, Chairman, February 25, 2011.*