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**Document Title: An Empirical Study to Improve the Scientific Foundation of Forensic Firearm and Tool Mark Identification Utilizing Consecutively Manufactured Glock EBIS Barrels with the Same EBIS Pattern**

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“An Empirical Study To Improve The Scientific Foundation Of Forensic Firearm And Tool Mark Identification Utilizing Consecutively Manufactured Glock EBIS Barrels With The Same EBIS Pattern”

The examiners were able to distinguish the questioned bullets from multiple consecutively manufactured gun barrels. The data collected demonstrated that consecutively manufactured gun barrels differ from each other, producing different signatures. This data also supported the hypothesis that firearm and tool mark examiners, on an international level, can identify bullets as having been fired through a particular barrel with a reasonable degree of scientific certainty.

Hamby and Brundage (2007) continued the quest of the 1998 Brundage study using the 9mm Ruger firearm barrels. A total of 438 examiners from 17 countries participated and no incorrect identifications were made. In the United States, 47 states were represented in this study. Hamby reported an error rate of .001 percent based on the data collected from all 438 participating examiners. According to Nichols (2007), “error rates have been studied and can provide consumers of the discipline with a useful guide as to the frequency with which misidentifications are reported in the community using appropriate methodologies and controls.”

In 2009, Hamby, Brundage and Thorpe reported that their 10 consecutively manufactured Ruger barrel research project had a total of 507 participants from 20 countries. As of their publication in 2009, no incorrect answers were reported.

Each study described here independently tested the question as to whether markings imparted to bullets fired through consecutively manufactured barrels are reproducible and identifiable. The results of each study demonstrated that firearm and tool mark examiners can correctly identify same gun evidence. Repeated support of the same hypothesis supports the foundational concepts of firearm and tool mark examination.



























































































