SWGGUN SCIENTIFIC WORKING GROUP for FIREARMS and TOOLMARKS

TRANSITION FROM ASCLD/LAB LEGACY TO ISO/IEC 17025

1.0 Objective

To set forth selected and important ISO requirements that exceed ASCLD/LAB Legacy program requirements which are new and of interest to the Firearms-Toolmarks community.

2.0 Identified Requirements and Applications

2.1 The laboratory shall evaluate the suppliers of critical consumables, supplies and services, and maintain records of these evaluations and list those approved. [4.6.4]

2.1.1 This may include calibration and maintenance services for balances, microscopes and consumables, which may include gunshot residue supplies.

2.2 The laboratory must estimate the uncertainty involved with all measurements critical to the examination outcome. [5.4.6]

2.2.1 Only uncertainty of measurement in quantitative testing is considered.

2.2.1.1 Examples of such measurements could include those which place or border the measurement within a legal or regulatory standard. This may include linear measurements associated with barrel and overall lengths of firearms, projectile velocity measurements and bullet weights for energy calculations.

2.2.1.2 Examples of instruments which may affect uncertainty calculations and may need to be calibrated could include calipers, micrometers, rulers, microscopic reticules, chronographs and balances.

2.2.2 All components which may influence uncertainty of measurements should be considered and documented (manufacturer error rate is one such consideration).

2.2.3 If the reproducibility experiment is designed in such a way that variability due to all of the major sources of uncertainty is sampled, then reliable estimates of uncertainty can be based entirely on experiment without having to resort to the mathematics and theory found in the ISO Guide to the Expression of Uncertainty in Measurement.

2.2.4 The statistical spread results in a series of measurements may yield, through its standard deviation, a measure of the uncertainty. This could be achieved by having all examiners within their unit take test measurements, collecting the aggregate data, and then having standard deviations calculated (this procedure will incorporate instrumentation errors). A plus or minus figure could be assigned to a measurement based on one or two standard deviations from the mean.

2.3 Reference collections that are maintained for identification, comparison or interpretation purposes should have their specimens uniquely identified, fully documented and properly controlled. [5.6.3.2]

2.3.1 Examples may include firearms, ammunition and fired-specimen collections.

2.3.2 Attempts should be made to appropriately classify and characterize firearm reference collections and their associated components.

2.3.3 Components of ammunition reference collections may be traceable by the lot number on the ammunition boxes, the head stamp, or the purchase practices.

2.4 When opinions and interpretations are included, the laboratory shall document the basis upon which the opinions and interpretations have been made. Opinions and interpretations shall be clearly marked as such in the test report. [5.10.5]

2.4.1 Reports which contain test results enhanced with the conclusion, opinion or interpretation shall in some way notify the customer that the report contains conclusions, opinions and interpretations of the person issuing the report. This may be accomplished in a variety of ways.

2.4.1.1 A heading for the results section of the report that reads "Results and Conclusions," or "Results and Interpretations," or "Results and Opinions."

2.4.1.2 A footer or preformatted message on the report, such as:

"This report contains the conclusions, opinions and interpretations of the analyst whose signature appears on the report."

2.4.1.3 Or, if a heading or preformatted message is not used, the author of the report may use appropriate wording directly in the text of the report.

"It is the opinion of this examiner that…"

3.0 References

1. General Requirements for the Competence of Testing and Calibration Laboratories, International Standard, ISO/IEC 17025, Second Edition 2205-05-15, Reference number ISO/IEC 17025:2005(E)
2. ISO/IEC 17025:2005 / 5.10.5 Opinions and interpretations, ASCLD/LAB Discussion, Interpretation and Application; Adopted by the ASCLD/LAB Board of Directors on September 14, 2008-10-22
3. 2006 Supplemental Requirements for the Accreditation of Forensic Science Testing Laboratories, Corresponds to ISO/IEC 17025:2005; Effective Date: January 24, 2006; Approved by: ASCLD/LAB Board of Directors
4. Guidelines for the Accreditation of Forensic Testing Laboratories; CAN-P-1578; September 2003
5. A2LA Guide for the Estimation of Measurement Uncertainty in Testing; July 2002; Edited by Thomas M. Adams