

**Detroit Police Department Firearms Unit  
Preliminary Audit Findings as of September 23, 2008**



**Michigan State Police  
Forensic Science Division**

## **BACKGROUND AND SCOPE**

Upon request by former Detroit Police Department (DPD) Chief Ella Bully-Cummings, the firearms unit and quality assurance program of the DPD Forensic Services Laboratory were inspected by personnel from the Michigan State Police (MSP) Forensic Science Division beginning in June 2008.

The format of the inspection was based on the accreditation criteria listed within the American Society of Crime Laboratory Directors / Laboratory Accreditation Board's (ASCLD/LAB) Legacy accreditation program. Included in the inspection was a review of the laboratory's Quality Manual along with the Procedures and Training Manuals for the firearms unit.

Additionally, 30 completed cases from each of the nine firearms examiners (where possible) were selected for reanalysis. The reanalysis of these cases was conducted by Ron Smith & Associates at the MSP's Lansing Forensic Laboratory under the supervision of the MSP Forensic Science Division.

At the request of the Wayne County Prosecutor's Office, 33 previously adjudicated cases were included as part of the cases examined by the inspection team. At this time, a total of 69 cases are still being audited.

## **PRELIMINARY AUDIT FINDINGS**

The DPD Forensic Services Laboratory was found to be in non-compliance with 66 of the 101 applicable criteria upon which they were inspected. This preliminary report includes a review of the 28 Essential standards for which they were non-compliant.

The ASCLD/LAB defines Essential standards as criterion that directly affects and has fundamental impact on the work product of the laboratory or the integrity of the evidence. Essential criteria must show 100% compliance for accreditation to be achieved under the ASCLD/LAB Legacy program. During this review, the DPD firearms unit scored only 42% compliance with the Essential criteria. All the Essential criteria within the ASCLD/LAB Legacy program are used to determine the effectiveness of a laboratory's quality system. If the quality system is failing in one forensic discipline, it is highly likely to be an indicator of a systemic problem that affects other forensic disciplines as well.

The complete audit report, which will be available in late October 2008, will provide a comprehensive overview of all three categories of standards (Essential, Important, and Desirable) and will include a review of all discrepancies and inconsistencies found during the casework examination.

## **CASEWORK REANALYSIS**

Approximately 200 firearms cases have been re-examined to date. Nineteen of the cases have either Class I or Class II inconsistencies; the results of which have been shared with the Wayne County Prosecutor's Office.

The ASCLD/LAB defines the three classes of inconsistencies as follows:

Class I: The nature and cause of the inconsistency raises immediate concern regarding the quality of the laboratory's work product. Examples of a Class I inconsistency may include an erroneous identification, false identification, or false positive.

Class II: The inconsistency is due to a problem that may affect the quality of the work, but is not serious enough to cause immediate concern for the overall quality of the laboratory's work product. Examples of a Class II inconsistency may include a missed identification or false negative.

Class III: The inconsistency is determined to have only minimal effect or significance, be unlikely to recur, is not systemic, and does not significantly affect the fundamental reliability of the laboratory's work. An example of a Class III inconsistency may include an administrative or transcription mistake.

Repeated instances of Class II or Class III (or a combination of Class II or Class III) inconsistencies occurring in the same laboratory over time or at one time may be viewed as raising to the level of a Class I inconsistency.

Of the 33 adjudicated cases from the Wayne County Prosecutor's Office that were reanalyzed, 3 exhibited Class I inconsistencies. In total, this equates to approximately 10% of the completed firearms cases having significant errors. On average, the DPD firearms unit analyzes 1,800 cases per year. If this 10% error rate holds, the negative impact on the judicial system would be substantial, with a strong likelihood of wrongful convictions and a valid concern about numerous appeals.

The majority of firearms cases analyzed by DPD examiners result in all fired evidence in a case being identified, which is a highly uncommon result. The audit team found that in many cases in which numerous items of evidence were involved, the examiner did not examine every item. Instead, an assumption was made to the entirety of all items based on the analysis of only a few. Inconsistencies such as this would normally be discovered during technical review; however, in the DPD firearms unit, a proper technical review is almost non-existent. Not only has the technical reviewer not been trained

sufficiently to perform an accurate technical review, but also the documentation required to complete a thorough review is not available in the case file record.

Other reasons contributing to the discrepancies observed in the firearms unit casework are the lack of an employee development program, the lack of support from the administration, the volume of work, and the deplorable conditions of the facility.

Nothing negatively influences a forensic discipline more than an erroneous identification. A prime example is the erroneous fingerprint identification made in 2004 in the Madrid, Spain train bombings case. To this day, latent print examiners in the State of Michigan are questioned while testifying in court as to how this erroneous identification could have happened.

When an examiner makes an erroneous identification and testifies to that identification, their credibility as an expert is lost. If the examiner is permitted to testify in future court proceedings, he/she will surely be questioned about their previous erroneous identification, making it impossible for a forensic scientist to fully recover his/her credibility in the courtroom.

#### **ESSENTIAL STANDARDS – NON-COMPLIANT**

**1. Does clearly written and well-understood documentation or procedure exist for handling and preserving the integrity of evidence?**

A review of case records showed that 90% of the file jackets failed to contain a property receipt, which is contrary to section 4.1.6.3 of the Quality Manual. Without a property receipt, the chain of custody is broken and the integrity of the evidence is compromised.

**2. Does clearly written and well-understood documentation or procedure exist for preparation, storage, security, and disposition of case records and reports?**

The record retention policy (section 1.13.6 of the Quality Manual) is extremely vague. There is no reference to the parent organization's retention policy. Section 1.13.5 of the Quality Manual requires the use of out-cards when a case file is removed from storage. The audit team could not verify compliance with the record retention policy.

**3. Does clearly written and well-understood documentation or procedure exist for calibration of equipment and instruments?**

The audit team noted a critical lack of understanding for the needed calibration and maintenance of the equipment and instrumentation. Only one of three comparison microscopes had a maintenance sticker; dated March 29, 2008. Equipment such as balances, scales, weights, and other measuring devices that have a direct impact on the forensic analysis of the evidence should be calibrated annually. If this is not done, then the results of the forensic examinations can be misleading or erroneous.

**4. Does the laboratory have and use a documented training program in each discipline and sub-discipline for employees who are new, untrained, or in need of remedial training?**

The Firearms Procedures Manual requires the training program as prescribed by the Association of Firearms and Toolmarks Examiners; however, the audit team was unable to verify whether a formal training program exists, nor were they able to locate a training manual. Instead, the audit team found the senior examiner trained all other examiners. Given the senior examiner's casework during the reanalysis portion of this audit showed numerous Class I inconsistencies, which are defined as erroneous identifications, false identifications, or false positives, the audit team has serious concerns about the quality of the laboratory's training and work product.

The audit team found no formal documentation of training for any of the examiners and competency tests were not administered prior to allowing an examiner to conduct casework. No documentation recognizing the successful completion of training was observed for any of the examiners.

**5. Does the laboratory have a written or secure electronic chain of custody record with all necessary data that provides for complete tracking of all evidence?**

The audit team was unable to verify that consistent documentation is maintained within the case file jacket showing when evidence is removed from the firearms property room vault for analysis. This lack of documentation jeopardizes the chain of custody and could have ramifications during a trial.

**6. Is evidence protected from loss, cross transfer, contamination, and/or deleterious change?**

The firearms vault is much too small to hold the volume of evidence. As a result, firearms evidence is laid about in the unit unsecured and unprotected from possible loss and contamination.

**7. Is there a secure area for overnight and/or long-term storage of evidence?**

Access to the firearms unit is not restricted during normal business hours. Due to a lack of proper storage space, firearms evidence overflows into office and workspace areas, potentially compromising its integrity.

**8. Has the laboratory established whether individual characteristic database samples are treated as evidence, reference materials, or examination documentation?**

Section 4.1 of the Quality Manual states characteristic database samples are not evidence, but does not characterize them further as either reference material or examination documentation.

**9. Are individual characteristic database samples protected from loss, cross transfer, contamination, and/or deleterious change?**

Test shots are maintained within the case files in unsealed envelopes, susceptible to loss. A recent procedural change, which was not documented in the Quality Manual or Firearms Procedures Manual, allows for database samples to be stored in the basement rather than in the case file jackets.

**10. Is access to individual characteristic database samples restricted to those persons authorized by the laboratory director?**

No. Access to database samples stored in the basement is not restricted. Allowing unrestricted access could lead to the database samples being lost or compromised.

**11. Did the accredited laboratory conduct and document an annual audit of its operations and submit an annual accreditation audit report to the ASCLD/LAB by the required deadline?**

Annual audits of the firearms unit are not conducted.

**12. Does the laboratory conduct and document an annual review of its quality system?**

Annual audits of the quality system are not conducted, nor are annual safety audits.

**13. Are the procedures used generally accepted in the field or supported by data gathered and recorded in a scientific manner?**

The audit team could not determine what procedures are being utilized during the analysis of firearms cases. Notes, photographs, sketches, and/or other examination documentation are almost nonexistent in the case file records to support the conclusions of the examiners. This lack of supporting documentation conflicts with the procedures generally accepted in the field for firearms analysis.

**14. Are the technical procedures used by the laboratory documented and are the documents available to laboratory personnel for review?**

The Firearms Operating Procedures Manual provides only an administrative overview with limited technical direction on how to perform an analysis used in firearms/toolmarks examinations. The lack of well-defined procedures may allow an examiner to draw conclusions on an analysis that may be inaccurate. An examiner must be held accountable for the decisions and conclusions he/she makes; however, without specific procedures in place, this accountability is impossible.

The National Academy of Sciences recently charged all the FBI-sponsored Scientific Working Groups (SWGs) with developing national standards, rather than guidelines, for the operating procedures of each forensic discipline. The expectation will be that all forensic laboratories abide by these new standards.

**15. Are appropriate controls and standards specified in the procedures and are they used and documented in the case record to ensure the validity of examination results?**

The Firearms Operating Procedures Manual does not contain appropriate controls and standards. The audit team was unable to find any documentation in the case file records of controls and/or standards being used.

**16. Is the quality of the standard samples and reagents adequate for the procedure used?**

Standard weights are not being used to determine trigger pull pressure and the instrument used to determine trigger pull pressure, an Aspring gauge, has no record of ever being calibrated. All equipment such as balances, scales, weights, and other measuring devices that have a direct impact on the forensic analysis of the evidence should be calibrated annually. If this is not a practice within the laboratory, then the results of the forensic examinations can be brought into question. Without proper calibration of the equipment, inaccurate conclusions could be drawn as to the results of the analysis.

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The reagents observed in the firearms unit lacked proper labeling (i.e. no dates) and were not recorded in a reagent log. All reagents have a shelf life and must be checked prior to their use in the analysis of forensic evidence. These checks are defined as controls and ensure the reagents are working properly. Without reagent logs and/or dates being recorded, an examiner could be using reagents that are not suitable for the analysis, which will influence the results.

The effect of not closely monitoring reagents is likely minimal, as the DPD firearms unit rarely conducts any analysis that involves the use of reagents. In the cases reviewed by the audit team, none involved either a serial number restoration or a distance determination, which are typical analyses done within a firearms unit where reagents are utilized. The lack of these tests is an example of how the city's forensic firearms needs are not being met.

**17. Does the laboratory routinely check the reliability of its reagents?**

The audit team was unable to determine whether there is a procedure for routine checks of the reliability of reagents.

**18. Are the instruments/equipment properly calibrated?**

The audit team could not determine if any of the instruments and equipment was properly calibrated because no calibration logs were observed in the firearms unit. All equipment such as balances, scales, weights, and other measuring devices that have a direct impact on the forensic analysis of the evidence should be calibrated annually. If this is not a practice within the laboratory, then the results of the forensic examinations can be brought into question. Without proper calibration of the equipment, inaccurate conclusions could be drawn as to the results of the analysis.

**19. Are conclusions and opinions in reports supported by data available in the case record, and are the examination documents sufficiently detailed such that, in the absence of the examiner(s), another competent examiner or supervisor could evaluate what was done and interpret the data?**

Case files rarely contain necessary notes, photographs, sketches, or other examination documentation needed to support the examiner's conclusions. Given this, it would be extremely difficult for another examiner or supervisor to determine what was done on a case. The limited data present in the case file makes peer review nearly impossible.



**20. Does the laboratory generate written reports for all analytical work performed on evidence, and do the reports contain the conclusions and opinions that address the purpose for which the analytical work was undertaken?**

Through interviews with DPD examiners, the audit team learned the results of some analyses are only provided verbally to investigators. If needed, a report is authored after the fact. This is not an acceptable practice in the forensic scientific community.

The conclusions drawn in the examiners' reports are general in nature and should be more specific to the item numbers listed in the reports. The analytical work conducted in the firearms unit is at a minimum. The audit team did not review a single case file in which a serial number restoration or toolmarks examination was performed.

**21. Where associations are made, is the significance of the association communicated clearly and qualified properly in the report?**

In many instances, associations/identifications are reported in a general fashion. For example, case #F06-0319A states, "Submitted evidence was examined and classified as stated. Microscopic comparison of the above evidence yielded they were fired in the same weapon."

**22. Does the laboratory have, use, and document a system of technical review of the reports to ensure the conclusions of its examiners are reasonable and within the constraints of scientific knowledge?**

The audit team found that DPD firearms examiners are technically reviewing reports in which they were involved in the original analysis. This practice significantly impacts the technical review process because an unbiased decision is impossible given the examiner is reviewing his/her own work. Additionally, the reanalyzed cases that revealed Class I inconsistencies (erroneous identifications) were authored by more than one examiner. Each examiner signing the report should be held accountable to effecting the erroneous identification.

**23. Does the laboratory conduct and document administrative reviews of all reports issued?**

Approximately 95% of the cases examined by the audit team did not include a Peer and Administrative Case File Request Summary as mandated by section 2.5 in the Quality Manual. Although inappropriate, the co-signer of DPD's firearms reports indicates that a technical review was done. However, without the Peer and Administrative Case File Request Summary present in the case file jacket, there is no way to

confirm this was actually done. Absent a proper administrative review, Class III inconsistencies will continue to exist and contribute to a poor quality work product.

**24. Does the laboratory monitor the testimony of each examiner at least annually and is the examiner given feedback from the evaluation?**

The monitoring of testimony by firearms examiners is inconsistent. The audit team found no records for 2003, 2005, and 2008, and only partial records for 2004, 2006, and 2007.

**25. Does the laboratory participate in proficiency testing programs conducted by approved test providers or by other external provider(s) when no approved provider is available?**

DPD firearms examiners take proficiency tests through an external provider, Collaborative Testing Services. However, because the proficiency tests are taken as a group with the consensus answers submitted to the test provider, management cannot determine an individual examiner's proficiency level.

**26. Did each examiner have extensive training from a qualified examiner and does each have experience commensurate with the examinations and testimony provided?**

The audit team was unable to verify whether a formal training program exists, nor were they able to locate a training manual. The senior examiner is responsible for training all other examiners, but numerous Class I inconsistencies found in the senior examiner's casework during the reanalysis portion of this audit, gives the audit team serious concerns about the quality of the laboratory's training and work product. The level of experience for each of the DPD firearms examiners can only be determined through their respective years of service, which is not a true measure of competency. The lack of training records, independent proficiency tests, and monitored testimony records brings into question the experience of each examiner and whether they should be conducting firearms analysis.

**27. Did each examiner successfully complete a competency test prior to assuming casework responsibility?**

While section 3.2.2.6 of the Quality Manual mandates a competency test must be satisfactorily completed before an examiner is assigned to casework, the audit team was unable to determine whether this requirement is followed.

**28. Did each examiner successfully complete an annual proficiency test?**

No.