



# Recovered Ballistic Evidence: Best Practices for Crime Gun Intelligence Centers

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The mission of a Crime Gun Intelligence Center (CGIC) is to prevent gun violence through the consistent production of timely, precise, and actionable intelligence concerning gun crimes to identify armed violent offenders for investigation and targeted enforcement. Timeliness of crime gun intelligence is the key to how actionable the intelligence is and therefore, its ability to be used to prevent future gun violence. The timeframe from the recovery of ballistic evidence (crime guns and cartridge cases) to the notification of a NIBIN lead to all affected investigators should ideally occur within 24 to 48 hours.

Utilizing the National Integrated Ballistic Information Network (NIBIN), IBIS compares the image of a test-fired cartridge cases from a recovered crime gun or recovered cartridge cases from a crime scene to previously submitted images of cartridge cases recovered from crime scenes. By comparing the correlated images, it is possible to link one or more separate shooting incidents (e.g., homicides, attempted homicides, gunshot detection alerts with cartridge cases recovered, and other incidents involving the discharge of a firearm) from the same jurisdiction, neighboring jurisdictions, or even from another state to the same firearm.

Likewise, by tracing a recovered firearm through ATF's National Tracing Center, CGICs can determine when and where the firearm was initially purchased and by whom. This information can provide leads to additional witnesses, associates, and even additional crimes and coconspirators.

Entry into NIBIN and eTrace is dependent upon having timely and efficient procedures for processing recovered ballistic evidence. While ATF's Minimum Required Operating Standards allow more time, the CGIC goal should be to have all recovered crime scene cartridge cases and test fired cartridge cases entered into BRASSTRAX within 24 hours of being recovered by law enforcement. For a recovered crime gun this would include procedures to make sure the firearm is unloaded and safe to test fire, that it has been completely and accurately identified for tracing, and having a trained individual test fire the gun and enter the resulting cartridge case in BRASSTRAX within 24 hours of the crime gun's recovery.

The process for accomplishing the goal of 24-turn around time for ballistic evidence processing is dependent upon each jurisdiction's resources and should be established in consultation with all CGIC components, especially crime laboratory personnel and prosecution partners. This paper highlights critical steps that all CGICs should incorporate into their crime gun processing, as well as processes currently used by highly effective CGICs.

## Processing Crime Guns

The first critical steps for processing a crime gun are documenting the recovery for tracing and getting the crime gun to personnel to perform necessary functions. In establishing a CGIC program each jurisdiction needs to assess their current process for the documentation and processing of crime guns. Adjustments may need to be made to these procedures in order to facilitate getting the crime gun to the appropriate personnel for examination, test firing, and entry of the cartridge case into the NIBIN network, as well as tracing the crime gun, all within 24 hours of its recovery.

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It is critical to understand that although test firing, NIBIN entry, and correlation review have traditionally been done by highly trained firearms examiners at a crime laboratory, these steps do not need to be performed by firearm examiners, nor do they necessarily need to be performed at a crime laboratory. Instead, these tasks can be performed in a controlled and secure location by sworn officers, laboratory technicians, NIBIN contractors, or ATF personnel who are appropriately supervised and have received appropriate training. Not only does this free up firearm examiners to focus their time on confirming the NIBIN leads as “hits,” something that only they can do, but expanding the pool of personnel available to conduct these tasks also helps ensure that they can be accomplished within the 24-hour window.

Protocols and standards for examining firearms and cartridge cases for DNA and latent fingerprints should be established; however, these processes should not inhibit the timely processing of firearms and cartridge cases for NIBIN entry within 24 hours of recovery. This process of establishing protocols should begin with candid conversations and consultation among law enforcement, crime laboratory personnel,

and prosecutor partners regarding prosecutorial requirements, jury expectations, realistic probability of obtaining additional evidence, and the cost of and requirements for the collection and storage of DNA evidence.

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## Tracing Crime Guns

In order to trace a crime gun, it is critical that whenever officers recover firearms they provide all available data associated with the crime gun recovery as part of the recovery and submission process. This data is captured by completing the ATF’s National Tracing Center Trace Request form and includes:

- A full and accurate description of the firearm (manufacturer, model, caliber/gauge, serial number, as well as country of origin and importer if of foreign manufacture)
- Possessor of the firearm (if known)
- Any criminal associates who were with the possessor
- Crime(s) associated with the firearm’s recovery
- Recovery location
- Date of recovery

Many departments have worked with ATF to develop a **firearm recovery form** that both serves as a property form for the police department and captures all of the information needed to complete a trace request in eTrace — ATF’s web-based firearms trace request submission system that allows police departments to submit trace requests, monitor the progress of their traces, retrieve trace results, and make queries of their trace data. Officers who recover firearms need to be trained to fully and accurately identify firearms and complete the requisite paperwork as part of the standard recovery process. ATF has developed posters that depict the markings on firearms and show where each of those markings is recorded on the trace request or firearms form. These posters can be prominently displayed at police department locations where personnel are entering firearms into property or evidence.

During the process of test firing the crime gun, the ATF trace or department firearm recovery form should be reviewed to ensure that the crime gun is accurately identified and that all known information is properly documented (e.g., possessor, recovery location, suspect vehicle description, possessor associate). Review of the trace/firearm recovery form should take place during the test-fire process so that the description of the crime gun provided can be compared to the actual markings on the crime gun and any necessary corrections to the form can be made. Crime guns should be entered into eTrace within 24 hours of recovery and a system should be in place to ensure



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that the trace results are forwarded to the officer investigating the case as well as the CGIC analysts and investigators reviewing NIBIN leads. It should be noted that ATF has expanded the justification for urgent traces to include recovered crime guns that have been linked by NIBIN to prior shootings. Urgent traces are usually completed within 24 hours.

## Current Crime Gun Processing and Tracing Practices

In the Denver CGIC a NIBIN contractor generates a list of all firearms recovered in the previous 24 hours and requests that the Central Property Section pull all of those firearms daily. He subsequently retrieves them and transfers them to the Denver Crime Laboratory for examination and test fire. By contrast, officers at other departments, such as the St. Louis Metropolitan Police Department (SLMPD) submit all recovered firearms directly to the Police Department's Crime Laboratory before the end of each shift.

At the SLMPD Crime Laboratory, firearms turned in within the previous 24 hours are first sent to the Firearms Section, which ensures the guns are unloaded and safe to handle. Because they are physically in possession of the firearms, they also compare the description of the firearm provided by the submitting officer on the paperwork to the markings on the firearm, making any corrections needed if the firearms are inaccurately or incompletely described. The firearms are then transferred to other sections of the laboratory where they are expedited through the Biology/DNA Section for DNA swabbing and the Identification Section for fingerprint examination and then returned to the Firearms Section for test firing.

Once again, it is key to understand that DNA swabbing does not have to be done by laboratory personnel or technicians, so long as it is done by appropriately trained and supervised personnel and is properly documented. Denver combines several steps of the process, all captured at their laboratory, utilizing trained personnel (non-firearm examiners) who examine the firearm for any sign of fingerprints (making detailed notes about the presence or absence of visible prints), swab the textured surfaces of the firearm for DNA (making notes detailing the surface areas swabbed), and test fire two rounds from the firearm remotely on a gun cart. As part of the process, because they are physically in possession of the firearm, they also examine the markings on the actual gun to ensure the description of the firearm provided is both accurate and complete, making any correction needed. They then enter the firearms into eTrace. NIBIN contractors subsequently examine the two test-fired cartridge cases to identify which has the most sufficient characteristics for comparison and enter it into BRASSTRAX. Although all of these tasks are performed at the Denver Crime Laboratory, it is worth noting that this "one-stop shopping" approach could just as easily be conducted within the property section or elsewhere in a police department where a secure space that meets the safety requirements for those tasks exists or can be established.

## Processing of Recovered Cartridge Cases

The processing of cartridge cases recovered from crime scenes requires the same sense of urgency for entry into NIBIN within 24 hours. Although in some ways less complicated than processing a recovered crime gun, cartridge cases present challenges of their own. Cartridge case recoveries are often associated with gunshot detection system alerts or calls for shots fired where no victims, witnesses or suspects are identified. The recovery of cartridge cases, while crucial to the success of NIBIN, can take an officer out of service for a substantial period of time. In the case of a gunshot detection system alert, it is likely that the officer will be out of service in an area with a high volume of calls and likely during the time of day or night when calls for service are high. SLMPD created a partial remedy for this problem by creating an abbreviated reporting process for cartridge case recoveries in cases where there is no associated victim, witness or suspect, reducing the officer's time out of service to a mere 15 to 20 minutes rather than an hour or more.

Just like recovered crime guns, recovered cartridge cases from crime scenes need to be delivered to trained personnel who can triage them to determine how many different firearms the recovered cartridge cases represent. If the recovered cartridge cases are two 9mm, one .40 caliber and one .45 caliber, it is easy to see that they are from multiple handguns. However, upon examination a firearm technician



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may determine that the markings on the 9mm cartridge cases indicate they were fired from two different firearms, meaning the four cartridge cases recovered represent four separate firearms, not three. Cartridge cases from each firearm must be triaged to select the best representative for each firearm for entry into BRASSTRAX. Finally, the cartridge cases must be entered into BRASSTRAX. Once the cartridge case has been entered, NIBIN provides a list of candidates ranked by correlation score from highest to lowest. A correlation review, an on-screen comparison of the digital images, must then be conducted to determine the potential for two cartridge cases to have been fired from the same weapon. Just as with firearms, these tasks can be performed by a variety of properly trained and supervised personnel in a safe and secure environment. In some departments these tasks are performed by a NIBIN contractor at the lab; in others these tasks are performed by a firearms technician assigned to the CGIC.

## Conclusion

When establishing a NIBIN process, police departments and crime laboratories should be flexible in their thinking about who will carry out processes and where they will be carried out. Departments should consider the most efficient and effective approach to tasks, as long as there is no decrease in the quality and accuracy of the work, in the safety and security of the environment, or an erosion of the evidentiary value (such as a break in the chain of custody). As described above, the cast of participants for many tasks can be greatly expanded beyond fully trained firearm examiners, whose time can be freed up to perform the confirmation of hits and other tasks that only they are uniquely qualified to perform. It takes two years or more to fully train a firearm examiner, but only weeks to train technicians on BRASSTRAX entry or MATCHPOINT correlation. A number of tasks, such as confirming the description of the firearms provided by the recovering officer and swabbing the firearm for DNA, can be performed as part of the test-firing process by a firearm examiner, NIBIN technician, or other appropriately trained and supervised personnel. The objective should be to eliminate inefficiencies and streamline the processing of crime guns and recovered cartridge cases in the NIBIN process.

The key is timeliness. NIBIN leads that are generated months after the recovery of the crime guns or cartridge cases are often useless as investigative leads or intelligence, and therefore will have minimal, if any, impact on curbing future gun violence or closing cases. NIBIN does not seek to merely provide evidence for court linking a recovered firearm to a particular crime; it seeks to link together otherwise unassociated shootings to target armed and currently active “trigger pullers” for identification, investigation, arrest, and successful prosecution.



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